TELEGRAPH AGE.

A SEMI-MONTHLY JOURNAL DEVOTED TO TELEGRAPHY.

Single Copies, 10 cts. ESTABLISHED 1883. $1.50 per year.

Vol. XIX.—No. 17. NEW YORK, SEPTEMBER 1, 1902. Whole No. 463.

THE TELEGRAPH AGE

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SOME POINTS ON ELECTRICITY.

A Few Questions and Answers.

BY WILLIS H. JONES.

So many interesting questions from correspondents of this journal appertaining to electrical problems have been crowded out of these columns owing to the press of other matter, that we will try to make amends by sandwiching in a few replies as opportunity is offered.

The first inquiry in order comes from Grand Rapids, Mich., and is printed in full:

"Will you kindly explain the following: We often find while taking a line balance on a duplex circuit a difference in the amount of resistance obtained between the open and the closed key of the polechanger, notwithstanding our effort to adjust the pegs in the rheostat so that one value will answer for both open and closed key."

The explanation is that where a condition exists which causes the discrepancy mentioned, it will probably be found that a foreign electromotive force, due to a leak from some other circuit, or a difference of potential between the home and the distant "ground," is adding to the value of the home battery in one instance and detracting from it in the other, with the result that the main line is fed with more than the normal pressure of the battery in one position of the polechanger, and less than the full value in the other, while the artificial line being free from foreign influence maintains the same value of current in either alternative. Thus, if the home battery be, say, 100 volts, and the foreign pressure 5 volts positive, in one position of your key the main line will be fed by 105 volts, and in the other by but 95 volts, while the artificial line faces 100 volts in either position.

Another way to put the case is to say that a counterelectromotive force acts as so much added resistance to the line, while an auxiliary pressure apparently reduces the resistance of the circuit to the same extent. Where such foreign influences cannot be eliminated from the wire, the partial remedy therefor lies in halving the discrepancy obtained by alternately balancing by each pole of the home battery.

Another correspondent asks:

"Why do you use a standard No. 2 differential quadruplex relay at the battery station in the Morris duplex apparatus for circuits with battery at one end only? As I understand it, there is but one coil actually in circuit at one time. Why would not a single line really answer the same purpose?"

The standard neutral relay is employed primarily because its construction is such that it will perform the work desired by the inventor without any mechanical alterations whatever; and because it is necessary to have two coils of wire around the magnet notwithstanding but one is actually in operation at any given moment, in order to preserve the same magnetic polarity in the core of the relay magnet at all times, regardless of the battery reversals, that being the feature of the invention.

The object in preserving a given polarity in the home relay is to prevent the retractile spring from pulling the armature back during the period that an incoming signal is being formed. This end is attained by means of the companion coil (oppositely wound), very much upon the same principle that the discharge of a condenser tends to occupy the deserted core of a quadruplex relay during the moment of "no magnetism," and thereby sustains the original pull on the relay armature. In the Morris two-coil arrangement, while there is no "filling in" process at work in the core, the same effect is obtained by catching the fleeing magnetism in the core during the process of demagnetization before it has all disappeared, and in addition to thus compelling the fugitive to exert its pull on the relay armature in the right direction at the proper moment, uses the remnant as a stepping stone towards quickly

rebuilding the strength of the core with the opposite pole of the battery. In other words, the operation of the two-coil plan is too quick to allow the relay magnet to demagnetize sufficiently during the short period of reversal to overcome the tension of the retractile spring.

A third query is:

"Why can we not use the old style "clockface" continuity preserving contact point polechanger with quadruplex apparatus employing dynamo currents?"

You can, where the electromotive force of the battery is not over 100 to 150 volts. Beyond that pressure the annoyance from arcing increases from the "mere troublesome" state at 150 to the positively prohibitive at 300 volts. It should be understood that with the clockface pattern the battery is short circuited for a fraction of a second with each reversal of polarity, but as there is but one battery employed in the bluestone arrangement, the maximum electrical pressure between the contact points at the moment the mechanical break is made at the tongue can never [illegible]e than that of the voltage which feeds the line; whereas with the dynamo system two separates batteries of identical pressure, but opposite in sign, face each other across the air gap between the bar lever and one contact point of the "walking-beam" polechanger.

The continuity preserving device would bring the latter two forces directly in contact with each other, thus creating a difference of potential across the gap when the break occurs equal to just twice the pressure which feeds the line. Thus, two quadruplex batteries of 300 volts each, when separated by the air gap, would have a tension of 600 volts instead of 300 trying to jump the space and thereby create an arc between those points.

A fourth correspondent writes:

"When a line balance as indicated by the rheostat shows that the resistance of the quadruplex circuit is nearly double what it should be, and that upon inquiry we find that the balance of the distant station is normal, what does the fact indicate?"

It indicates that the distant compensating ground coil is partially or entirely open, and that you have measured the resistance of the line, plus that of the rheostat at the distant station, through which latter your current was forced to seek a ground.

This fact may be verified by balancing to the distant battery. This is done by considering the neutral relay and the polechanger as an ordinary Stearns duplex, and after "turning down" the retractile spring adjusting the rheostat until your own reversals do not affect the neutral relay; then pull up on the spring and adjust the tension to the incoming signals. Should the wire now "quad" O. K., the fault suspected will have been proven to be the disturbing element.

Submarine Cables as Accessories to Land Telegraph Lines.

A. Davidson, in a recent letter to the Electrical World and Engineer, says:

"In the recent correspondence on the telegraph situation in the United States, it seems to me that the value of submarine cables in maintaining communication during the periodical collapses of the land line system has not received the attention which it deserves. This value will be sufficiently illustrated by the fact that New York has never been cut off from Europe during at least the last ten years, and the system of cables in the North Atlantic is so complete that the probability of such a thing happening is extremely remote.

"The question of coast cables to maintain telegraphic communication between London and Scotland during the annual breakdowns of the aerial lines has already been ventilated in England, and there are many who think that such cables would be a more satisfactory solution of the problem than underground cables. There are, naturally, many points to be considered before it could be said that a system of coast cables would be useful, reliable and economical in the case of the United States, and most of these points could only be decided by those in possession of the requisite data.

"There may be some doubt as to the suitability of the submarine cable for emergency work, but I think it may fairly be claimed that a submarine cable of the present type is not very inferior in actual work to a land line of equal length, provided the lengths are moderate. The traffic carrying capacity of a telegraph circuit is necessarily greatly dependent on the electrical stability of the line, and when one considers the violent electrical changes to which aerial lines are subject, more particularly during storms, the practical failure of automatic systems when most required is not surprising. On the other hand, the electrical condition of a submarine cable is practically stable and automatic working is successfully and extensively used.

"Then, again, we are probably within measureable distance of considerable improvements on the lines of Prof. Pupin's patents, and it is evident that the electrical stability of the submarine cable will allow of the application of the inductance coils under the most favorable conditions, provided mechanical difficulties can be overcome. Distortionless circuits so constructed would be ideal lines for high speed automatic systems, and, wherever practicable and advisable, would prove invaluable in promptly handling a large amount of traffic when suddenly called on by a collapse of the aerial-line system."

The Buckingham Long-Distance Page-Printing Telegraph.*

BY WILLIAM MAVER, JR.

From the days of Wheatstone, House and Hughes, almost to the present time, printing-telegraph systems have depended primarily for success upon the uniformity of revolution of a cylinder or wheel at a transmitting station with a revolving type wheel at a receiving station.

Thus if, as in Fig. 1, two wheels of equal size, having at their peripheries type letters of the alphabet, similarly arranged, are caused to rotate at equal rates of speed, it is evident that if they have started together, with a given letter on each opposite a given point, each wheel will continue to present a similar letter at that point. If, then, the wheels are suddenly stopped, and at the same

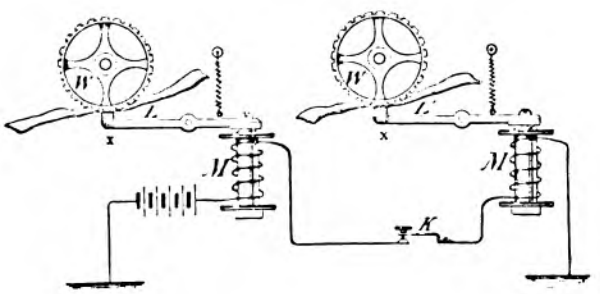


Fig. 1.—ILLUSTRATING SYNCHRONISM.

time the circuit of the magnets be closed, their armatures will be attracted and the upper ends of the levers will strike against the paper strips provided, impressing thereon whatever letter may at the time be opposite thereto. It is, however, a difficult matter to obtain a uniform rotation of two such wheels, especially when they are rotated at a high rate of speed, unless their rate of rotation is controlled by some master wheel or transmitter.

In printing-telegraph systems such as are used in the well-known "ticker" service, the type wheel of the tickers in the various offices are placed under control of a transmitter, which operates them by a positive, or "step-by-step," movement.

This "step-by-step" movement is produced by a transmitter which sends out pulsations of current, generally of alternate polarity, to which a polarized magnet at the receiving station is responsive. The pulsations thus originated cause the armature of the polarized magnet to oscillate from side to side, and as it does so it operates an escapement, which, in turn, permits an escape-wheel to rotate one-half tooth, or "step," for each half-oscillation; that is, one step for each pulsation of current. If, then, there are, say, sixteen teeth on the escape-wheel, thirty-two pulsations of current will cause it to turn one complete revolution. In practice, a type-wheel having, say, thirty-two letters and other characters on its periphery is placed on the escape-wheel shaft, and hence thirty-two steps of the escape-wheel will effect one revolution of the type-wheel.

In "step-by-step" systems the transmitter is usually designed to transmit, automatically, the number of pulsations requisite to bring any desired letter on a distant type-wheel opposite a given point by the depression of a corresponding key of a keyboard at the transmitting end of the circuit. The printing is usually done by a "press-magnet" in the same circuit as the polarized magnet. The press-magnet is so constructed that it will not respond to the rapid reversals of polarity that actuate the more sensitive polarized magnets, but when a steady current of either polarity flows, one end of the armature lever of the press-magnet is raised against the type-wheel, impressing on the paper the letter which is at that instant in the printing position.

In other printing-telegraph system, such as the Phelps in this country and the Hughes in Europe, the uniform rotation of the transmitter and type-wheel is maintained, by a nearly synchronous rotation of the motors at each end of the circuit, and, in addition, by a device which corrects any slight tendency to variation from the given rate of rotation. A keyboard transmitter is also generally used on these systems.

In these systems it is evident that a considerable loss of time ensues, from the fact that frequently it is necessary to rotate the type-wheel the greater part of a revolution in order to print one letter. Thus, if the letter A follows B in a given word, it will require 31 pulsations of current to print A. If R follows C, 15 pulsations will be necessary. This is nearly equal to 15 pulsations for each letter, and for the space between words as well, and hence conduces to a comparatively low rate of speed, perhaps an average of 30 to 40 words per minute; the message being printed as received on a paper strip, which is not an agreeable form for delivery to the public; in fact, large users of the telegraph frequently specify that messages shall not be delivered to them in strip form. When also it happens that the transmitting cylinder and a printer on these step-by-step systems get out of unison, as it is termed, it is necessary to let the transmitter run free for two or three revolutions, until a unison device which holds the ticker at a unison or zero point is actuated, this frequently requiring sixty or more pulsations of current in the step-by-step systems. In the synchronous systems it is frequently necessary to allow the apparatus to run free for several minutes to obtain unison. Also, it is well known that a high degree of skill is required on the part of the operator of the Phelps and similar keyboards to secure the best results.

The Buckingham long-distance page printer is the successful outcome of the efforts of the inventor, Mr. Charles L. Buckingham, of New York, ably assisted by Mr. E. Germann, to produce a rapid printing-telegraph system adapted to operate on the longest circuits and to avoid the paper strip and other objectionable features

*From the Electrical World and Engineer of May 24, 1902.

of previous printing-telegraph systems. The success of these efforts is attested by the fact that this system has been in daily operation on some of the longest circuits of the Western Union Telegraph Company for nearly four years, transmitting 100 messages per hour between New York and Chicago in each direction, simultaneously on one wire, and printing the messages as received on the regulation telegraph blank, or on large sheets if desired.

It is evident that to obtain these results it was necessary to diminish largely the number of pulsations required for the transmission of letters and spaces below that requisite on the ordinary printing-telegraph. As a first step toward this desideratum, the Buckingham printer employs four very small octagonal type-wheels mounted side by side on one shaft, on the periphery of each of which wheels are placed eight letters and other characters, thirty-two in all. The shaft on which this combined type-wheel is mounted is so disposed that by an ingenious arrangement of five levers it may be given both a lateral and a rotary motion such that any one of the thirty-two characters on the type-wheel may be placed before a given point for printing by five pulsations of current—that is, two and one-half alternations of polarity from the transmitting station. It may also be noted here that the Buckingham receiving apparatus is so arranged that a succession of five short pulsations must always bring the escape-wheel of the receiving apparatus to the unison position, in a manner to be explained subsequently.

For the actual printing of the letter the pulsation required to produce the space between letters and words in the Morse and Wheatstone systems is utilized. Hence the selection and printing of any character are brought about in the Buckingham system by a cycle of six pulses of current in all—that is, three alternations of polarity. These pulses are, however, of varying length, akin in this respect to the Morse alphabet. For example, the letter A will be selected by a dash and two dots, B by a dot, space, dash, space, dot (. — .), the space, as in the Wheatstone system, being made by a negative current; and since it is known that a succession of five short and long pulses can be arranged in thirty-two different ways, a different combination is readily obtained for the twenty-six letters of the English alphabet and six other characters.

These combinations form what is termed the Buckingham alphabet or code, given herewith.

Inasmuch as the prolonged negative or positive pulse of this alphabet, like that of the dash of the Wheatstone-Morse alphabet, is equal to three short pulses (that is, as the dash is to the dot), the letters that occur most frequently in the English language are, in the Buckingham alphabet, allotted the combinations which contain the least number of prolonged impulses.

In the feature of preparing the messages for transmission, and in the actual transmission of the messages, the Buckingham system is almost identical with the Wheatstone automatic system. Consequently, the messages are prepared for transmission by being perforated in a double row on a paper strip, which is then passed through the Wheatstone transmitter, and if the Wheatstone receiver were employed at the receiving end the messages would be recorded on the paper strip as dots, dashes and spaces, differing from the Wheatstone records only as the Buckingham alphabet differs from the Morse alphabet.

A —··	I ·· —	Q — — ·	Y — · —
B — · · ·	J ·— — —	R ·— ·	Z — — · ·
C —·— ·	K —·—	S ···	& ·— ···
D — ··	L ·— ··	T —	(·) —·— —
E ·—	M — —	U ··—	(·) —·— —·
F ··—·	N —·	V ···—	(?) ··—— ·
G — — ·	O — — —	W ·——	(—) ·———·
H ····	P ·—— ·	X —··—	Space ···

The Wheatstone transmitter is shown in Fig. 2. It is said that Wheatstone obtained his idea for this instrument from the Jacquard loom, which in its operation it somewhat resembles. It is seen that the perforated paper is caused to pass above two vertical rods, which receive a tendency to rise vertically by the springs shown, but are limited in their motion by pins on a rocking beam, which, during the operation of the apparatus, is rocked by suitable machinery, and thus, with the rods, presents the appearance of an inverted walking beam, one rod rising with the rocking beam and the other being depressed alternately. When the holes in the paper come immediately above the rods, the latter pass through them and complete a full phase. Hence, if there are a succession of holes in each edge of the paper strip, the rods will make complete excursions, and in that case the levers attached to the lower ends of the vertical rods will operate a pole-reversing device which will send out a succession of short positive and negative currents to the line. When, however, the holes in the paper come at suitably designed intervals, so that at times a rod in rising comes in contact with the paper, it is thereby prevented from rising further with the rocking beams, and thus at that time a prolonged

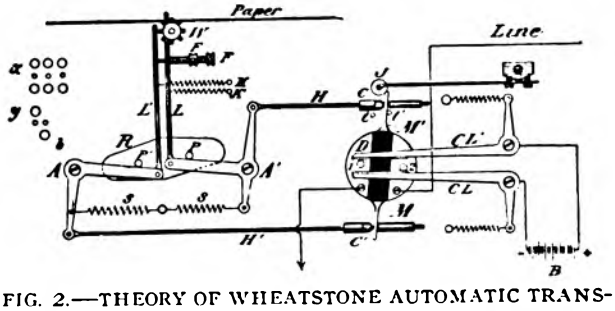


FIG. 2.—THEORY OF WHEATSTONE AUTOMATIC TRANSMITTER.

pulse of one or other polarity goes to the line, since at that time the levers of the pole-changers do not alter position, and by suitably arranging the holes in the paper, short and long pulses of current may be transmitted in any desired order.

The transmission of the six pulses of alternating polarity thus arbitrarily arranged for each character of the Buckingham alphabet results in the operation of a Wheatstone polarized relay in the main line at the receiving end of the system, which relay by its armature controls a local circuit in which are a governing relay, a unison magnet and an escapement magnet, which latter imparts, by means of an escapement, a step-by-step motion to a "sunflower" or distributor of peculiar construction, to such purpose that, with the cooperation of the governing relay, and depending on the duration of the incoming pulses and the order of their arrival, one or more selecting relays are operated, and these, in turn, cause the operation of the type-moving levers which bring a desired letter on the type-wheel to the printing position.

The Buckingham printer is thus a positive or "step-by-step" system in which an escape-wheel, and with it the sunflower, is caused by a cycle of six pulses of current, one or more of which are prolonged, to undergo a cycle of six steps for each letter or character printed. The term prolonged pulse is a relative term, as will be understood if it is considered that when the system is operating at the rate of 100 words per minute the length of a prolonged pulse is about the one-fortieth part of a second.

Before further considering the receiving apparatus, the manner of preparing messages for transmission by the Buckingham system will be described.

First it may be noted that the ordinary method

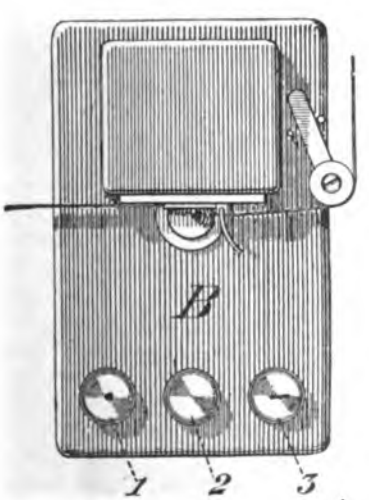


Fig. 3.—WHEATSTONE PERFORATOR.

of preparing messages for transmission by the Wheatstone system is a somewhat tedious and arduous process. The apparatus consists essentially of a set of five metal punches, each moving within a close-fitting case, Fig. 3, and which, by suitable mechanism, may be pressed outwardly beyond the case a short distance. The paper to be perforated is caused to pass close to the edges of the punches, Fig. 4. The inner ends of the punches are adjacent to three rods or levers, which connect with three keys or discs, 1, 2, 3, the dot, space and dash keys, respectively. These keys are placed in a position convenient for the

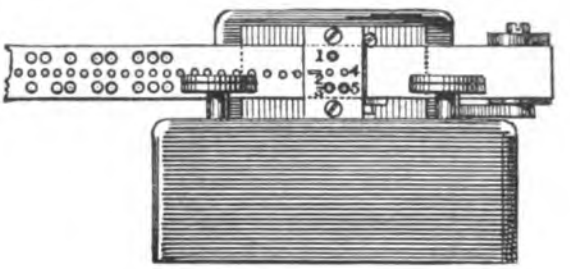


Fig. 4.—WHEATSTONE PERFORATOR.

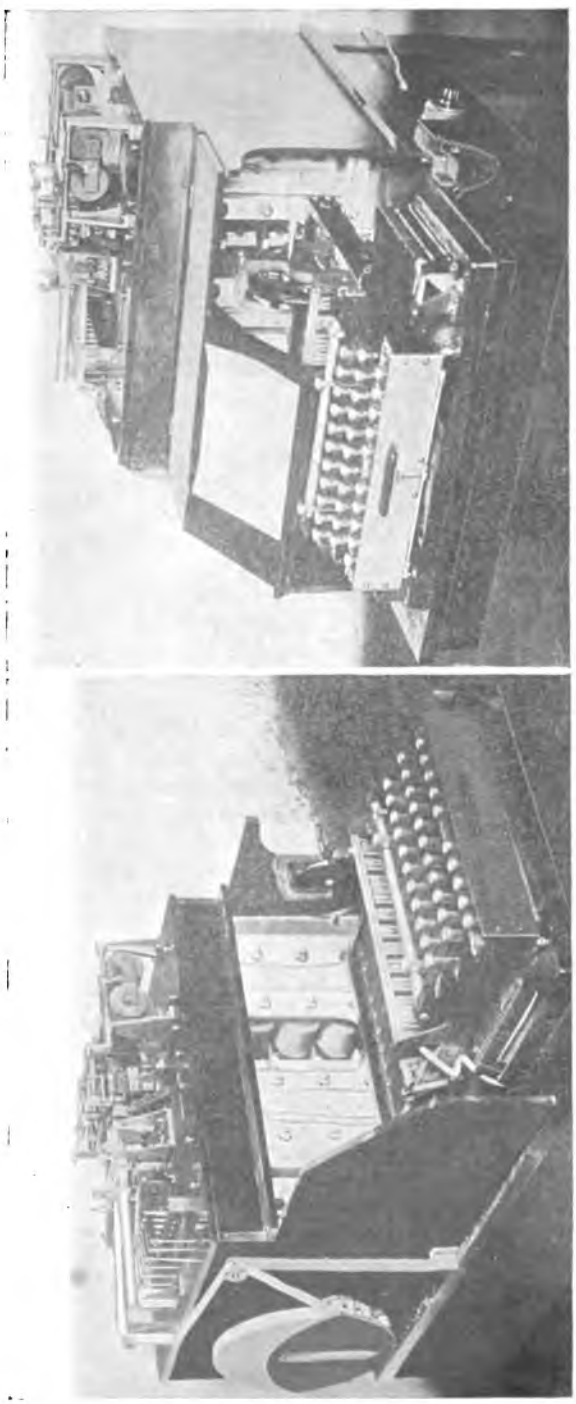
operator, who depresses them by means of a rubber-tipper mallet in each hand. Depressing the dot key perforates three vertical holes in the paper, two large and one small. Depressing the dash key perforates four holes, two small central holes, and two large holes at an angle with each other. Depressing the space key perforates a central hole only. The act of depressing a key also causes the paper to be fed by a small star wheel meshing in the central holes. The rate at which a Wheatstone puncher can prepare messages is from twenty to forty words per minute.

One of the important features of the Buckingham system is that it dispenses with this mallet method of punching messages, in which every element of a letter has to be punched separately by the operator, and, instead, it employs a method in which all the elements of a given letter are perforated by the depression of one key on a keyboard corresponding to that of the Remington keyboard, and by means of which messages can be prepared at a speed which is only limited by the capacity of the operator to manipulate the keyboard, some data relative to which will be given towards the end of this article.

This keyboard perforator is shown in the accompanying illustrations, Figs. 5, 5*a*, the operation of which may be described in general terms as follows: Under the levers of the keys a number of fine piano wires are stretched, at right angles to the key levers, at intervals of about 1-4 of an inch. These wires are secured at the left end, while at the right end each wire is attached to a crank lever which controls a circuit in which is an electromagnet. There are in all twenty-five of these wires, sixteen of which through their crank levers control an equal number of punching magnets, and nine of which control nine paper-feed magnets. The key-levers are provided with inverted stirrups on their under edges, the actual number and placing of which is different for each letter, and when a given key lever is depressed

these stirrups engage with certain of the piano wires, which latter operate the crank levers with which they are connected and close the circuits of their respective electromagnets. Hence a given key will always operate the same electromagnets.

The punches in the apparatus are sixteen in



FIGS 5 AND 5A.—BUCKINGHAM KEY-BOARD PERFORATOR, FROM OPPOSITE SIDES.

number, of the same diameter as those used in the Wheatstone puncher, and are placed in two rows, eight in each row, one series of which perforates the necessary upper holes in the paper, the other series the lower holes in the paper. There is thus an upper and a lower row of punches, the upper row being caused to punch the paper from one side, the lower row from the opposite side. Behind each punch there is placed a crank lever, one for each punch, so arranged that it may be operated by the armature of a certain one of the punching magnets, which latter are compactly arranged in a vertical row under the punches for that purpose, as may be partially seen in the illustration. It then follows that when a given key is depressed it will close a certain six of the circuits containing punch magnets, which, in turn, will operate the punches connected therewith, thereby perforating three upper and three lower holes in the exact order required for the transmission of the letter represented by the key so depressed.

It should be noted that the small central holes in the paper strip are prepared in advance by a separate machine at a very high rate of speed.

Inasmuch as the letters of the Buckingham alphabet, like those of the Morse alphabet, are of variable length, it is evident that a variable paper feed device must be employed in this punching apparatus. This device is outlined in Fig 6. It consists of a drum-shaped wheel, 1.6 inches in diameter, on the periphery of which are placed

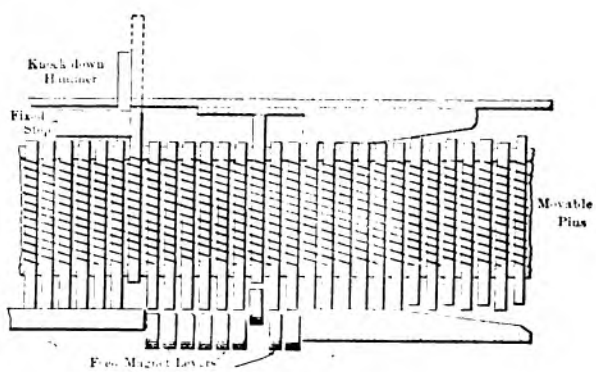
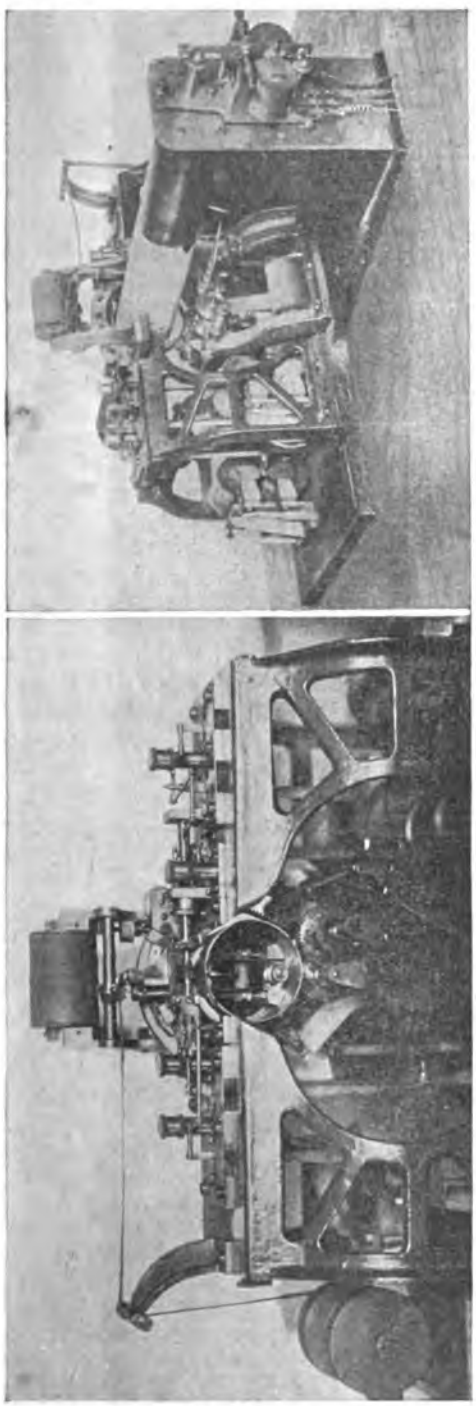


FIG. 6.—THEORY OF PERFORATOR PAPER FEED DEVICE.

small teeth of the proper size and so spaced as to mesh into the central holes of the perforated paper. This wheel is carried on a vertical shaft driven by a motor-wound barrel spring.

This variable feed action is automatically brought about in a very simple manner. There are arranged vertically around the edge of the feed-wheel (Fig. 6) a number of movable pins, frictionally held in any position by close-fitting spiral springs. These pins normally project below, but may be raised above the upper surface of the feed-wheel. Normally, also, some one of these movable pins is always thus raised, and while so raised it engages with a fixed stop placed above the wheel, whereby the wheel's rotation is stopped. When a key-lever is depressed one of the feed magnets referred to is operated, and through its armature lever it drives up another of the movable pins which is distant from the fixed stop a space equal to the length of the letter represented by the key so depressed. Simultaneously with the raising of the latter pin the

proper punching magnets have also been actuated and have punched the paper. At nearly the same instant the hammer end of the armature lever of a magnet termed the "knock-down" magnet has been placed above that pin which is now raised at the fixed stop. When the operator removes



FIGS. 7 AND 8.—FRONT AND REAR VIEWS OF BUCKINGHAM PRINTER.

his finger from the key, allowing it to ascend, the circuits of the punch magnets and feed magnets are opened, the punches are withdrawn from the paper, and, nearly simultaneously, the hammer of the knock-down magnet hits the pin under it, depressing it below the fixed stop, whereupon the feed-wheel quickly turns, drawing with it the paper strip, until the pin last raised arrives at the fixed stop, when the wheel is again halted and the apparatus is ready for the punching of another letter. When the punched paper strip passes the feed-wheel it enters a curved chute (seen in the photograph of the perforator), which strips it from the teeth of the feed-wheel, and it is then ready to be "run" through the Wheatstone transmitter.

In the operation of this keyboard perforator the operator depresses the keys precisely as in the case of the ordinary typewriter, depressing a space key once for the space between the words. To prevent the operator over-running a line, an escape-wheel, termed an indicator, is provided, which is rotated step by step with each key depressed. At the zero point of this wheel, which

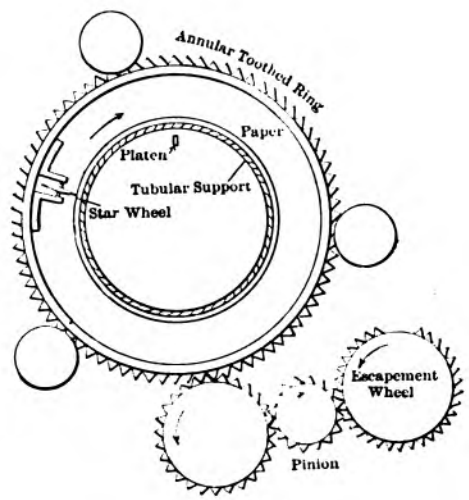


FIG. 8A.—END VIEW OF ANNULAR RING PAPER FEED GEARING.

corresponds with the end of a line, there is a slot into which a pawl drops and locks the apparatus. To unlock it the operator depresses a line space key, which at one operation throws the pawl out of the slot and punches a line space. On the periphery of the indicator, which is plainly seen at the right of the keyboard, is a white mark, which comes into view as the end of the line is approached, giving the operator visual warning to that effect. Provision is also made whereby when a message, or any part of it, ends in the middle of a line the operator may manually turn a knob on the axle of the indicator, which brings it at once to the zero or locked position, ready for the beginning of a new line.

The Buckingham page printer is shown in front and rear view in the illustrations, Figs. 7, 8. To avoid the delay that would necessarily follow the attempt to move a paper carriage in the manner of the ordinary typewriter and page-printing telegraph systems, Mr. Buckingham employs a novel device. The telegraph blanks are arranged in the form of a tube, which is placed loosely over a fixed tubular support. A row of small holes is

perforated in advance along the margin of the blank, and the teeth of a small star-wheel mesh into these holes. This star-wheel is carried on the inner side of an annular toothed wheel supported on roller bearings, and which may be seen in Figs. 8, 8*a*. Gearing operated by a motor-wound clock spring gives this wheel a tendency to rotate, but under the control of the printer escapement it acquires a step-by-step movement around the tubular support. There are seventy-four teeth on this ring (sufficient to carry it once around), which correspond with the number of letters and spaces on one line of a telegraph

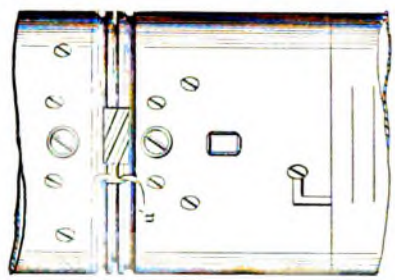


Fig. 9.—SUPPORTING TUBE.

blank. Near the zero point of the escape-wheel several of its teeth are omitted for a purpose presently to be mentioned. While a message is being printed, letter by letter, this annular ring, and with it the star-wheel, is moved step by step around the supporting tube, the star-wheel being held in one axial position by the engagement of its teeth in three circumferential grooves on the supporting tube (Fig. 9), until, at the end of a revolution, the paper is almost at the place of beginning. Since certain of the star-wheel teeth are meshed with the perforations in the paper tube, the latter will obviously be carried around the fixed tubular support, step by step, and thus, as printing goes on, a new surface is regularly fed beneath the type-wheel. This wheel is visible in Fig 7, in which a section of the tube has been removed for purposes of illustration.

It will be seen that the circumferential grooves on the tube turn off at an angle, or incline, at a point (Fig. 9) which corresponds with the end of a line on the paper sheet or tube. When the star-wheel in its course passes through these inclines it must turn on its axis, causing its teeth to mesh with new perforations in the paper, and advancing the paper thereby the distance of one line along its support. At the time when the star-wheel arrives at the entrance of the inclined grooves the escape-wheel, from which several teeth are omitted, jumps a corresponding distance, and with it the annular ring, with the result that the annular ring simultaneously moves a distance equal to several short steps, and the paper is advanced a line, with but one step of the escape-wheel; in other words, with but one pulse of current.

Figs. 10, 11, 12, 13 show details of the receiving, unison and printing apparatus. The main-line polarized relay and the apparatus which it directly controls are shown in Fig. 10. Its armature controls two branch circuits, in which are the sunflower escapement magnet, a unison magnet and a governing relay. These have each two coils reversely wound, and in the case of the escapement magnet the effect is to oscillate its armature from side to side in common with the armature of the main-line relay. The unison magnet is polarized, and its coils are so connected that a current through one of its coils corresponding to a negative current on the main line tends to assist the induced magnetism which a current in the other coil (corresponding to a positive current on the main line) opposes the induced magnetism of the magnet. The adjustment of the retractile spring of the magnet is such that its armature will not be attracted by short pulsations of either polarity, nor by prolonged positive pulses, but it will be attracted by prolonged negative currents. The result of this is that when short and long positive and short negative currents are coming over the main line, the hook on the end of the armature of the unison magnet is always in the path of the teeth of the unison wheel on the same shaft as the escape wheel; but when a long negative pulse is received the armature is attracted, and the hook is withdrawn from the path of the teeth. The space between any two of the teeth on the unison wheel is equal to the space between any three of the teeth on the escape-wheel. Six pulses of current will move the escape-wheel a distance of three teeth. Hence six pulses will also move the unison wheel a distance equal to that between two of its teeth. Therefore so long as the escape-wheel is in unison with the received pulses of the latter, the hook will always be drawn out of the

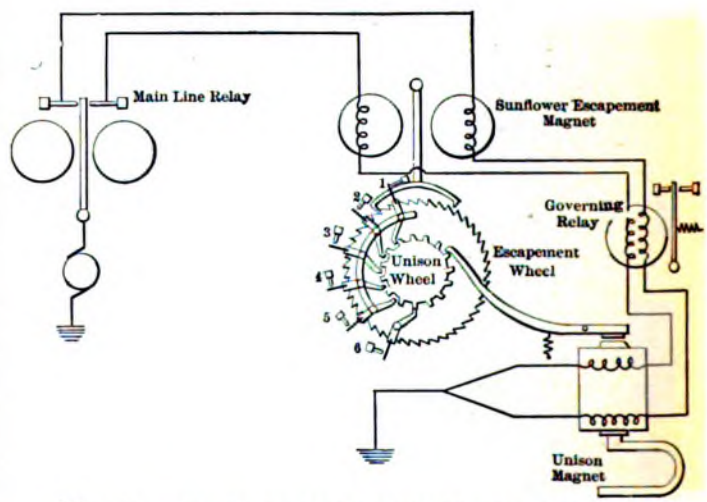


Fig. 10.—DIAGRAM OF RECEIVING APPARATUS.

path of the teeth, since each letter of the Buckingham alphabet is followed by a long negative pulse, and if at any time the apparatus should get out of unison, it is seen that in this way five short pulses will hold it at the unison or zero point, as previously stated.

The teeth of the unison wheel also perform an-

other important office. There are six circuit-closing levers pivoted as shown, of which five are

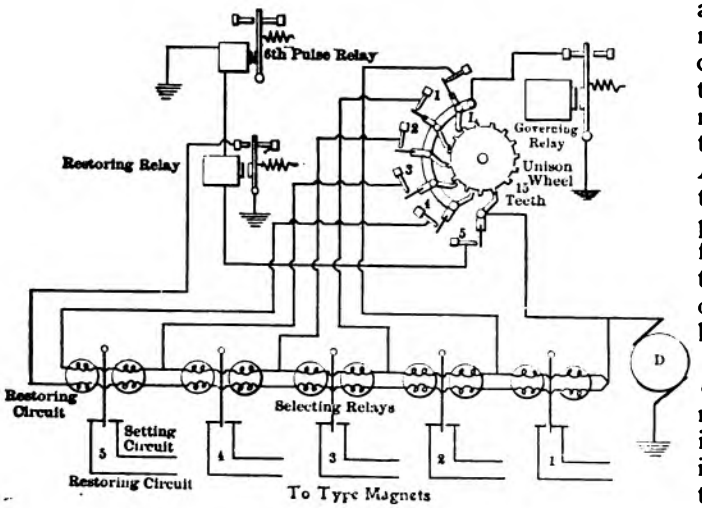


Fig. 11.—DIAGRAM OF UNISON AND SELECTING APPARATUS.

on one metal support; the sixth is insulated therefrom. The arrangement of these levers relative to the teeth is such that when the unison wheel moves a distance equal to the space between two of its teeth these levers close their respective circuits at 1, 2, 3, 4, 5, 6 in quick succession, beginning at 1. In other words, each cycle of six pulses, whether of long or short duration, will bring about a consecutive closing of the circuits controlled by these levers for a purpose presently to be mentioned. Of course, a long pulse will cause a circuit closer to dwell longer on its contact than a short pulse.

The retractile spring of the governing relay is so adjusted that its armature will not respond to short pulses of current, but will respond to prolonged pulses of either polarity. This feature is utilized in connection with the circuit closers of the distributor, or sunflower; and certain relays, termed selecting relays, of which there are five, shown in Fig. 11. These relays, known as Nos. 1, 2, 3, 4, 5, also have two coils, reversely wound. The circuit from one of the coils of each relay is connected to the correspondingly numbered contact post of the sunflower, but this circuit, it may be seen, can only be fully completed when the armature of the governing relay is attracted. Each of the selecting relays, by its armature, controls an electromagnet, which latter, by its armature, mechanically moves a lever that is connected with the type-wheel moving devices. These are termed the type-wheel magnets.

Whenever, in the course of the incoming six pulses that represent and print a character, one or more of the pulses are prolonged, there will, of course, also be a prolonged pulse or pulses in the local circuit of the governing relay, which will attract its armature, as in Fig. 11. Assume, for example, it is the first pulse. At this moment circuit-closing lever 1 is on a tooth of the unison wheel, and its circuit is closed at the contact post 1. Hence, at this instant (the governing relay also being closed) the circuit of No. 1 selecting relay is completed, and being thereby actuated by current from dynamo D, throws its armature to the right, operating a type-magnet No. 1. This magnet, by its armature levers, will move the type-wheel into a position for printing the letter A, and if there be no other prolonged pulses in the cycle up to the sixth pulse that letter will be printed by the sixth pulse. Had the third and fifth pulse of the cycle also been prolonged, the third and fifth selecting relays would have been operated, with the result that the letter K would have been printed.

The sixth circuit-closing lever is the last to act (it may be said to be the first and last, for it rests normally against its contact point, but it leaves it at practically the instant that No. 1 makes its contact). This lever, when closed, energizes two relays, one of which, the sixth pulse relay,

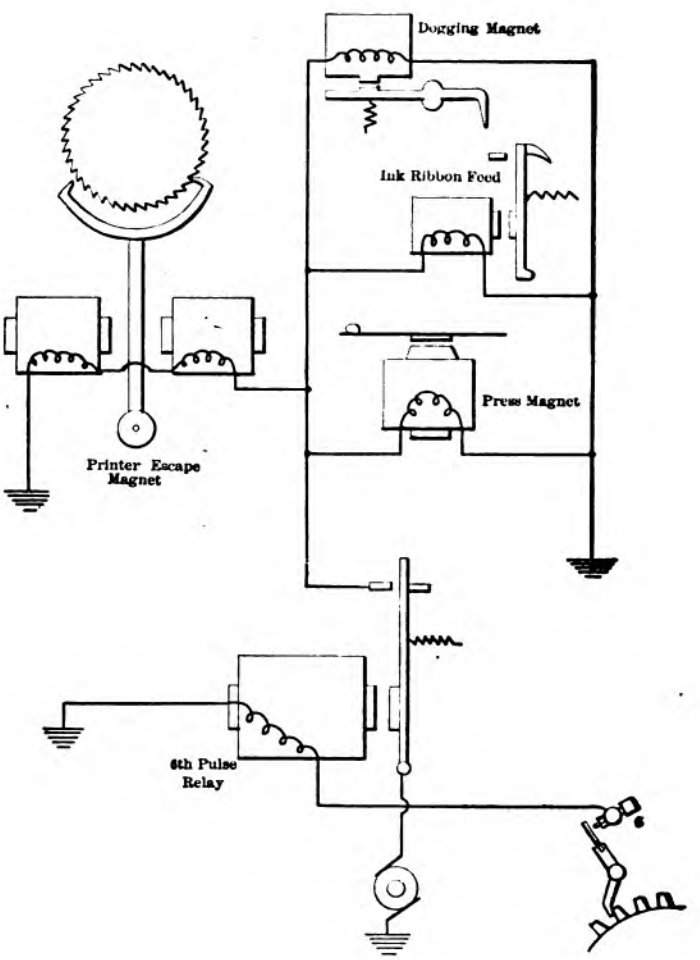


Fig. 12.—DIAGRAM OF PRINTING CIRCUITS.

operates the press-magnet, the feed-magnet, an ink-ribbon magnet and a dogging magnet; the

other is the restoring or resetting relay, which closes the restoring circuit through the selecting relays and type-wheel magnets, and thus resets those instruments to normal position after the selection and printing of a letter. It need not be said that these operations follow each other very quickly. It is obvious that the apparatus operated by the sixth pulse relay must operate before the restoring apparatus performs its part. This is ensured by giving the armature lever of the restoring relay a longer distance to travel before it makes its contact, and also by suitable adjustment of the retractile springs of the armatures.

The circuit connections of the instruments operated by and in connection with the sixth pulse relay are outlined in Fig 12.

The ink-ribbon feed magnet actuates a step-by-step ratchet and pawl device which moves the inking ribbon under the type-wheel. The dogging magnet plays an important part in steadying the type-wheel during the process of printing. This it does by means of a small cylinder on the same shaft as the type-wheel, on the surface of which cylinders thirty-two small holes are arranged to correspond with the characters on the type-wheel. When the dogging magnet is operated, which will be after a desired letter is approximately in the printing position, its armature drives a dog or pin into one of these holes, thereby adjusting and locking the type-wheel in a given position until the printing is effected, whereupon it is released. The printer escapement magnet operates or controls the train of gearing, which results in feeding the paper around and along its support, as already explained.

The manner in which the type-wheel is brought into any one of the thirty-two possible positions, considered aside from the alphabet, is perhaps the most unique of the numerous novel features of the Buckingham printer.

The electromechanism for this purpose is schematically outlined in Fig. 13. It is also visible in the accompanying photograph. The type-wheel is securely mounted with the dogging cylinder on a horizontal shaft. This shaft receives an endwise motion from the horizontal levers on the left, and a rotary motion from those on the right. In shop phrase, these horizontal levers are termed whiffletrees. The vertical arms 4, 5, connected with type-lever magnets 4, 5, move the horizontal levers which give the endwise motion to the type-wheel. The arms 1, 2, 3 move the right-hand levers which impart by suitable intervening mechanism the rotary motion to the type-wheel. The whiffletrees are connected by suitable links and pins to their respective arms, and are so pivoted and interlinked that a movement of arm 5, for example, to the right will move the type-wheel (whose shaft is attached by a swivel connection to the left-hand levers) a distance equal to the width of one of the type-wheel rings to the left. When arm 4 only is moved, it shoves the type-wheel shaft lengthwise a distance of two rings of the type-wheel to the right. When both arms are moved, the type-wheel is moved a distance equal to one ring to the right. As in the normal position of the type-wheel the second ring from the right is in the printing position, it is clear either of the other three rings may be brought into a printing position by the single and combined effects of two endwise adjusting arms.

The lengthwise or reciprocal movements of the right-hand levers impart a rotary motion to the type-wheel shaft by the intermediary of a spiral slot in a sleeve through which a pin attached to a

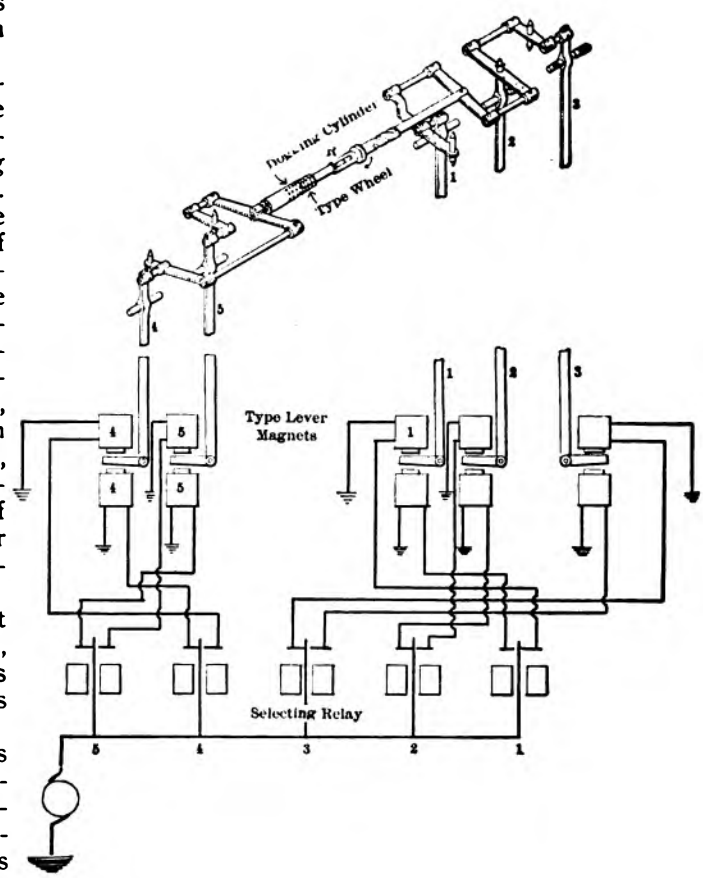


FIG. 13.—TYPE-WHEEL MOVING MECHANISM.

rod *R* projects. This rod is connected by a link to the right-hand whiffletrees. The type-wheel shaft enters the left end of the same sleeve, in which it moves freely lengthwise. A pin on this shaft projects through a straight slot in such manner that when the sleeve rotates in either direction the pin compels the type-wheel shaft to turn with it. The rotating levers are so adjusted that arm 1, when moved alone to the left by its magnet, will turn the type-wheel as a whole one-half of a revolution in the direction of the arrow shown at the shaft. Arm 2, when moved alone to the right, turns the type-wheel two-eighths of a revolution in an opposite direc-

tion. Arm 3, moved alone to the right, turns the type-wheel one-eighth of a revolution in the same direction as arm 2. Arms 2 and 3, acting together, jointly turn the type-wheel three-eighths of a revolution in a direction opposite to the arrow, while arms 1 and 2, acting together, but oppositely, will turn the type-wheel two-eighths of a revolution in the direction of the arrow; and by these means any one of the characters on the type-wheel may be placed in the position for printing with a maximum of five prolonged pulses apart from the final prolonged negative pulse for printing and restoring the apparatus to normal after printing.

The press-magnet is seen at the rear end of the tubular support. Its armature lever is connected with the printing platen by means of a rod attached to a crank lever, the platen being arranged within the tube and driving the paper against the type-wheel through an opening in the tube.

As already noted, the method of transmitting messages by the Buckingham system is identical with that of the Wheatstone automatic telegraph system.

The speed of the operators in preparing messages by the Buckingham keyboard perforating machine for transmission by the Buckingham system has increased with the increased skill of the operators, and is now not less than eighty words per minute. This rate of speed, it may be said, is greater than that at which the most expert operator of a typewriter could transcribe the same messages on ordinary page copy by the Remington or other typewriter. This is due to the fact that the operator of the Buckingham keyboard perforator has practically no sheets to change, the paper strip coming in rolls sufficient for 100 messages. Furthermore, the extent of depression of the key levers of this machine is less in point of distance traveled than the levers of the ordinary typewriter, and it is easier to operate, since it has practically no friction to overcome, and no work to do other than to close the circuits of the punching and feed magnets. All the business transmitted by the Buckingham system is prepared by this key-board perforator, and it may be added that two-thirds of all the business transmitted over the regular Wheatstone automatic circuits from the New York office is also prepared by this keyboard perforator, it being understood that it is only a question of arranging the proper combination of stirrups under the key levers to adapt this keyboard perforator to any dot and dash alphabet; the piano wires, feed and punch magnets remaining unchanged.

In the operation of receiving messages by this system an attendant places the telegraph blank in its tubular form over its support, until it meshes with the star-wheel, as stated, to facilitate which a slot at right angles to the circumferential grooves is provided (u^1, Fig 9).

The reception of message then proceeds. At the end of the first line, which contains the number, originating station and date of message, also at the end of the address and at the end of the message, a blank space is provided in the perforated strip at the transmitting end. At these intervals the attendant operate a manual device and advances the paper one line. At all other times the line space movement is automatic. When the message is completed the attendant opens up the paper tube by running a knife point through the row of perforations on the margin, when the message is practically ready for delivery.

An expert attendant quickly detects any imperfect signals, such as might be caused by wire trouble of any kind, by a break in the rhythm of the working of the receiving apparatus, and in the event of any appearance of error he signals to the transmitting operator accordingly. In this way incipient errors due to line and instrument troubles are detected with practically the same facility as on the regular Morse circuits.

The rate at which messages are regularly transmitted between New York and Chicago by the Buckingham printing-telegraph on a duplex circuit is about 100 average messages in each direction, or 200 messages per hour on one wire. The length of this circuit is 974 miles, but the ordinary Wheatstone repeaters are inserted at Buffalo, which is 444 miles from New York and 532 miles from Chicago. The wires used are the ordinary overhead copper wires of the company, measuring from 3 to 5.5 ohms per mile, and the system is, of course, operated under all prevailing conditions of capacity, self-induction and inductance effects from other lines to which the contiguous circuits may be subjected.

On several occasions the system has been worked at full capacity, to test its accuracy of transmission and reception. The matter transmitted on these occasions consisted of ordinary newspaper press reports, and was received on sheets of foolscap. On one occasion, from Chicago to New York, 2,429 words were transmitted in 23 minutes 54 seconds. On another 6,073 words were sent and received in 60 minutes and 13 seconds. On still another occasion 9,126 words were sent in 91 minutes and 18 seconds, all without an error in the printed copy. This is at an average rate of 100 words per minute. These figures include the time lost in changing the sheets, which, at the date of the tests, required six seconds for each change. By an improvement in the apparatus this time has been reduced to one second. It is estimated that over 1,500,000 messages have been transmitted by this system since its introduction upon the lines in question.

In conclusion the writer begs to acknowledge his many obligations to Mr. Buckingham for facilities afforded him in gathering data concerning this interesting system for publication in detail in the author's work, American Telegraphy, considerable of which data, it may be said, has been drawn upon in the preparation of this article, which is the first consecutive description of the Buckingham printer that has thus far been given to the public.

Retirement of Mr. Merrihew.

Mr. James Merrihew, general superintendent of the Southern division of the Western Union Telegraph Company, New York, has resigned, to take effect on September 1.

Mr. Merrihew, who was born at Wilmington, Del., November 18, 1837, began his telegraphic career as a messenger boy in 1849 in his native city. He has never been out of the telegraph

JAMES MERRIHEW, OF NEW YORK.
Retiring General Superintendent of the Southern Division of the Western Union Telegraph Company.

business and through years of continuous service in the Magnetic, Washington and New Orleans and Western Union Telegraph companies as messenger, operator, manager, district superintendent, assistant general superintendent up to the position of general superintendent his advancement has been constant, and the reward of true merit. Always an efficient, painstaking courteous official, he has made a fine record, and now as he nears his sixty-fifth year and retires from the service to which he has devoted his life, he carries with him into retirement and a well-earned period of rest, the cordial good will and respect of all associates and hosts of friends.

Resignations and Appointments.

Mr. S. R. Crowder, of Richmond, Va., has been appointed electrician of the Southern division of the Western Union Telegraph Company.

Mr. M. W. Rayens, superintendent of the American District Telegraph Company, New York, has resigned his position to enter other business.

Mr. J. D. Flynn, for the past nine years superintendent of the Western Union Telegraph Company, Pittsburg, Pa., has resigned.

Mr. J. W. Walsh, of Providence, R. I., has been appointed to a position in the New York bureau of The Associated Press, vice E. A. Goshert, resigned.

Mr. A. C. Johnson, chief operator of the Postal Telegraph-Cable Company, Memphis, Tenn., has resigned to accept a position with the same company in the Chicago office.

Mr. W. A. Harris, manager of the Western Union Telegraph Company, New Haven, Conn., has resigned. Mr. T. E. Russell, of Meriden, Conn., has been appointed acting manager in his stead.

Mr. R. C. Bliss, formerly manager at Springfield, Ohio, has been appointed manager of the Western Union Telegraph Company at Cincinnati, Ohio, vice C. E. Page, promoted to the superintendency at Boston, Mass.

Mr. H. E. Roberts, superintendent of the Western Union Telegraph Company's real-estate in New York City, has been appointed superintendent of the American District Telegraph Company, New York, vice M. W. Rayens.

Mr. E. B. Saylor, for the past twenty years chief operator of the Western Union Telegraph Company, Philadelphia, Pa., has been appointed superintendent of the same interests, with headquarters at Pittsburg, Pa., vice J. D. Flynn.

The Southern division of the Western Union Telegraph Company has been merged into the Eastern division, and Mr. Belvidere Brooks, general superintendent of the latter, has now supervision over the two combined divisions. His headquarters will remain at New York as at present.

The electrician's office of the Western Union Telegraph Company, Boston, Mass., has been abolished and Mr. J. W. Larish, who has occupied the position of electrician of the company for the New England States, has resigned to enter other business. Mr. Larish was offered a position in the electrical engineer's office in New York, but he preferred to remain in Boston.

T. H. Reynolds, aged forty-two years, manager of the Western Union Telegraph Company, San Francisco, Cal., committed suicide on September 27. He had held the office of manager since January 1, 1901, and his record was a good one.

Directory of Telegraph Organizations.

International Association of Municipal Electricians. Next meeting, Richmond, Va., Oct. 7, 8 and 9.

Old Time Telegraphers and Historical and United States Military Telegraph Corps Association. Next meeting, Salt Lake City, Utah, September 10, 11 and 12.

The Telegraph Age.

Entered as second-class matter at the New York, N. Y., Post Office.

Published on the 1st and 16th of every month.

TERMS OF SUBSCRIPTION:

One Copy, One Year, - - -	$1.50
One Copy, Six Months, - - - -	.75
Foreign Countries, - - - -	2.00

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253 BROADWAY, NEW YORK.

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NEW YORK, September 1, 1902.

NOTE.—We desire to state that back numbers of this paper, those issued more than six months prior to any current date, will be charged for at the rate of twenty-five cents apiece when they can be furnished. This price is fixed because of the necessarily limited stock we carry, and of the difficulty we commonly have in filling an order. Oftentimes the request is for papers of a more or less remote date, with the expectancy of being supplied at but ten cents a copy, whereas in order to obtain the desired issue we are ourselves frequently obliged to pay the larger sum, or even more. The growing value of complete files of TELEGRAPH AGE should cause our readers to carefully preserve their issues.

Once again there are rumors of a merger between the Western Union and Postal Telegraph-Cable companies, together with that of telephone interests.

The Folly of Indifferentism.

We have frequently indulged in what has been intended, on our part, as a "heart to heart" talk with operators, counseling them to a more thorough and practical study of the telegraph in its every aspect, the business in which the most of them have permantly embarked, as a necessary and fundamental preparation for their life work. Many have appreciated our disinterested remarks, have acted on the suggestions made, and as a consequence, so far as we know, nine out of ten have found reward in advancement with accompanying increase of pay.

Yet, on the other hand, as much as we regret to say it, comparatively little interest appears to be taken by the majority of telegraph operators in their calling. As a potent illustration of how indifferent they are to study the interests of the telegraph service, it is stated, strange as it may seem, that there is scarcely an American operator who has ever attempted to master the operation of the siphon recorder, the instrument that is used on all Atlantic cables. In almost every cable office in New York these instruments are found, but they are operated almost exclusively by foreign telegraphers. While American operators are employed to some extent by the cable companies, but few of them have seen fit to study the operation of the recorder.

This instance is one of many that comes to us in which operators fail to measure up to necescary service requirements. Why is it so? When it is remembered that the cable service pays better wages than the land lines, it will readily be seen that operators are carelessly indifferent apparently to their own good.

President Roosevelt in conceding terms to the Pacific Commercial Cable Company, as published in a previous issue, stipulates that the cable company shall employ none but American operators. The question arises: How can the company procure American operators to work their cable when such operators are not to be found?

Another instance of failure, common in almost every office in this country, to record against the operator is his neglect to acquire a practical knowledge of the switchboard. Good wire chiefs are in constant demand, yet there are few men competent to fill these important positions. It is not an idle question to ask why such is the case, for operators frequently bewail the narrow limits of their environment and the opportunities of promotion. It cannot be denied that operators, as well as those in other walks of life, will secure promotion exactly in proportion as they may be deserving of it. An equivalent, of course, must be rendered; this is a fundamental law; but capability will surely receive recognition.

It may be remarked in this connection that if the telegraph companies fail to recognize and reward ability found in the ranks that outside interests will do so. It is but a short and natural step from the telegraph to other fields of electrical endeavor, whose constantly expanding operations offer no mean opportunities to the intelligent man. Corporations have no time to educate the individual; each man must stand or fall, according to his own fitness.

The Cable.

"The Submarine and Land Telegraphs of the World" is the title of a monograph prepared by the Treasury Bureau of Statistics. It presents some information regarding the submarine telegraphs of the world which is especially interesting at this time. It shows that the submarine telegraphs of the world number 1,750. Their aggregate length is nearly 200,000 miles; their total cost is estimated at $275,000,000, and the number of messages annually transmitted over them is more than 6,000,000.

Death of Superintendent Donner.

Mr. J. B. Donner, superintendent of telegraph of the Southern Pacific Railway, San Francisco, Cal., died of consumption at San Antonio, Tex., on August 14. Mr. Donner had been a sufferer of

J. B. DONNER.
Late Superintendent of Telegraph of the Southern Pacific Railway.

this dread disease for a long time. The interment took place at Algiers, La., his old home. Mr. Donner had a national reputation as an efficient railway telegraph superintendent because of the improvement in the telegraph service he had brought about on the vast railway system of his company.

Obituary Notes.

Charles H. Sawyer, a telegraph operator of Boston, Mass., died on August 9.

Lee Morgan, aged 32 years, an operator at Blackstone, Va., died on August 21.

George W. Printz, who was chief telegraph operator at the headquarters of Gen. Robert E. Lee during the civil war, died at Beverly, W. Va., August 16, aged sixty-two years. Col. W. H. Taylor, now president of a bank at Norfolk, Va., who was a member of General Lee's staff, says that he knew Mr. Printz well, that "Mr. Printz was an operator at army head-quarters while we were around Petersburg in 1864 and 1865. General Lee and staff, toward the close of the war occupied Mr. Turnbulls' house a short distance from Petersburg and had his instrument up stairs. I was busy with him sending orders over the wire on April 2, 1865, in anticipation of the evacuation of our lines when a shell or shot crashed through the house. Printz told me he could operate the instrument no more, and, indeed, it would have been unwise to have remained longer, so I directed him to detach the instrument and we left the house together. I had my horse awaiting me and one for him. I told him to mount and make his way to Petersburg. I rode off to join General Lee and as I glanced at Printz, a shell or shot cut the legs off his horse and he fell with his instruments. Picking himself up he started to walk to the city. I never had the pleasure of meeting him after that, although I have often wished to do so and learn what became of him. The house was burned soon after we left it."

Personal Mention.

Col. A. B. Chandler, chairman of the Board of Directors of the Postal Telegraph-Cable Company, was again at his office in New York for a few days last week, coming from his country home at Randolph, Vermont.

Col. R. C. Clowry, president; Mr. B. Brooks, general superintendent and Mr. J. C. Barclay, electrical engineer of the Western Union Telegraph Company, New York, recently visited the Baltimore and Washington offices of that company.

Mr. Frank C. Mason, the well known superintendent of telegraph for the Borough of Brooklyn of the New York Police Department, in anticipation of his retirement in 1894, after years of active service, has purchased a farm of eighty acres near Utica, N. Y., which he is preparing for a Summer home for himself and family, when greater leisure will enable him to enjoy its attractions. To show how thorough are his preparations he has a force of men now at work making the improvements he deems necessary, one of which will be an electric light and power station for lighting the house, stables and grounds and to provide power sufficient for pumping, cutting feed for stock, etc. In the meantime he has disposed advantageously of several of his inventions in police signal telegraph apparatus to a New York company in which he has become a stockholder. It will thus be seen that Mr. Mason proposes to take life quietly in the near future.

Telegraph in Alaska.

Gen. A. W. Greely, chief signal officer of the army, who has just returned from Alaska, reports that before the end of the year Alaska will be connected with the United States by wire. In two weeks, he says, many hundred miles of telegraphic communication will have been established in that territory between the coast towns and those remote in the interior. Gen. Greely has been inspecting the operations in regard to telegraph lines.

"This," he said, "will for the first time make it possible for intercommunication to be had at a small expense between those portions of the territory where previously correspondence could be had only by mail, and where letters and answers could not be exchanged more than twice or thrice during the year."

The Pension Fund Proposition.

THE NEXT MEETING WILL BE HELD AT THE PRESS CLUB, NEW YORK, NOV. 18.

The following letter to the Editor, dated August 19, and signed by Francis W. Jones, Chairman of the Pension Committee, explains itself:

"The Pension Committee appointed by the Chairman of the New York Telegraphers on March 21st last to prepare a prospectus for a pension system for the care of telegraphers advanced in years for whom no systematic and suitable provision has been made, has pursued the subject as far as it has been possible to do up to the present time, and has adopted a report of progress with recommendations, which report it desires to place before the telegraphers by whom the Committee was appointed and either to be discharged or instructed further in the premises.

"It is the view of the Pension Committee that it would be wise to secure the publication of this report through TELEGRAPH AGE if possible in advance of the meeting that may be called to consider it, so that not only the telegraphers in New York but those interested in other cities may have an opportunity to study the present situation as outlined in the report, and be prepared at a meeting to be held in New York on November 18th next, the day before the annual meeting of the Telegraphers' Mutual Benefit Association, to intelligently act upon the subject."

New York, August 18th, 1902.

To Members of Pension Committee,

Gentlemen: On my appointment by you as a sub-committee of one to interview the presidents of the Western Union Telegraph Company, The Postal Telegraph-Cable Company, Commercial Cable Company, Texas Postal Telegraph and Cable Company and the Canadian companies, I wrote each of such companies a letter dated May 9th, 1902, as per attached copy, which has already been made known to you. Replies have been received from all the parties addressed and are hereto attached. There seems to be a friendly disposition evinced in the replies received, but no definite offer of active co-operation with your committee has been made by any of the companies for the purpose of devising a feasible pension plan for the care of incapacitated and aged worthy telegraphers in the United States and Canada, such plan to contain the features which the telegraph fraternity has been assured would insure Mr. Andrew Carnegie giving "a considerable sum" as per his letter dated Feb. 13th, 1901 to Mr. W. C. Connolly, Jr., of Pittsburgh, Pa.

It was thought by some that the pension committee of which you are members should confine its attention simply to a plan for the care of present incapacitated and aged telegraphers, but the New York telegraphers at their meeting in the Press Club, at the time they arranged for this committee, gave instructions that the committee was to take up the subject where the Old Timers had dropped it in Montreal, and see if there could be devised, for the general benefit of the fraternity, any pension or relief plan similar to those in operation among the employes of the Pennsylvania, the Baltimore & Ohio and other large railroad systems.

There seem to be some good reasons for the withholding up to the present time of active assistance by the principal telegraph companies. Col. A. B. Chandler has been unable to give the subject attention in behalf of the Postal Telegraph-Cable Company on account of absence from his office through physical indisposition almost continually since receiving my letter, but he personally called on me about the first instant and desired to be advised at any time if he could be of any assistance. Mr. George G. Ward, vice-president and general manager of the Commercial Cable Company, has been absent in Europe on important business ever since the receipt of my letter. Col. Robert C. Clowry had been but recently appointed president and general manager of the Western Union Telegraph Company at the time he was handed my letter above referred to and it is but reasonable to infer that the subject of a pension system for telegraphers would await its turn among matters that seemed to him more pressing.

Owing to the difficulty of securing an attendance of all the members of our committee at its several meetings by reason of the pressure of other duties and of what has seemed to me to be the hopelessness of the development by them of any practicable plan on account of their pre-occupation and the very extensive and complicated nature of the pension subject submitted to them, I took the liberty of asking the assistance of the Hon. Carroll D. Wright, Commissioner of Labor, as per copy of my letter attached, dated July 30th, last, and I beg to also attach his very courteous reply of August 14th, inst.

My duties to my company have prevented me from making more than a superficial study of the application of a pension system to telegraphers, and such study has impressed me with the idea that the formulation of a plan that will be alike acceptable to commercial telegraphers, to Mr. Carnegie and the telegraph managers, will require profound study and considerable labor of some one competent to deal with it in all its phases.

The railroad employees have been grouped into eighteen general classes by the Inter-State Commerce Commission for statistical purposes, viz:

General officers, other officers, general office clerks, station agents, other station men, enginemen, firemen, conductors, other trainmen, machinists, carpenters, other shopmen, section foremen other trackmen, switchmen, flagmen and watchmen, telegraph operators and dispatchers, employees, account floating equipment and all other employees.

No classification of telegraph employees has ever been made for regulating their participation in any mutual relief or beneficial system. It seems to me that in the main the nature of their employment is widely different from that of railroad employees. In the early days of the telegraph there

were as many managers as operators; chief operators were unknown, but as wires and business increased the necessity for operators to exclusively send and receive telegrams, has grown to such proportions that in the large commercial centres hundreds are now employed under one manager assisted by a small number of chief operators for testing wires and for supervisory purposes, so that a rough classification may be made thus:

General officers, electricians, general superintendents, district superintendents, supply superintendents, managers, cashiers, chief and supervisory operators, book-keepers, clerks of departments and officers, operators, assorting and distributing clerks, superintendents of construction, foremen of repairs and repair patrolmen, dynamo attendants, managers of messengers and messengers.

Very succinct though comprehensive articles upon the plan and operation of the principal railway relief and pension system in this country have been written by Prof. Emory R. Johnson, Ph. D., and printed in No. 8 Bulletin of the Department of Labor, January, 1897, and in No. 17 Bulletin of July, 1898; also a valuable article by Samuel M. Lindsay, Ph. D., in the Labor Bulletin No. 37, 1901, upon railroad employes in the United States, giving their classifications; facts as to qualification; wages and hours of work; permanency of occupation; discipline and relations of employer and employe.

Prof. Johnson explains that "a railway relief association is a special part of the railway service established by the railway corporation for the purpose of enabling its employees to contribute definitely fixed sums from their monthly wages toward a fund administered by the department for the benefit of its members. The organization is managed conjointly by the corporation and the employees. Membership is sometimes voluntary and sometimes compulsory. The members receive aid in case of sickness or accident, and at their death their families or other beneficiaries are paid definite amounts, the benefits derived from membership being proportioned to payments.

"Railway relief departments are to be distinguished from the other and less comprehensive arrangements by means of which several railway companies unite with their employees in furnishing temporary relief. Hospitals are frequently maintained by the companies for their employees, the companies in some instances paying all the hospital expenses, and in other cases requiring the men employed to contribute a part of the cost of maintenance. Many railway companies provide their force with free surgical attendance outside of hospitals, and others contribute something to associations formed by the employees to provide themselves with relief. It is customary for railway managers, when possible, to provide partially disabled men, or those grown old in the service, with the kind of labor they are capable of performing. The railway companies having relief departments provide more systematic and comprehensive relief, covering sickness, accident, old age and death.

"Relief departments are one of the three agencies by means of which railway employees can secure relief and insurance. The other agencies are (1) the accident and life insurance companies, and (2) the associations or brotherhoods, of which there are several of national scope, each open to a particular class of railroad workmen. Some railway companies recommend their employees to insure in an accident or life insurance company with which a special arrangement has been made. At present, however, relief and insurance is most frequently obtained through membership in an employees' association or order.

"These orders are of two kinds, the less important class consisting of the employees of single railroads. More frequently the associations are of the type of the International Brotherhood of Locomotive Engineers, or the Order of Railway Conductors of America, eligibility to membership in which depends upon the class of work done and not upon connection with the service of a particular railroad company.

"These large and influential orders maintain relief features, in which all eligible members are required to participate. In 1895 the Grand International Brotherhood of Locomotive Engineers had 536 divisions, with a total membership of 32,000; the Order of Railway Conductors of America had 370 divisions, with a total membership of 19,827. In the same year the Brotherhood of Railroad Trainmen comprised 556 divisions, and had 24,000 members. The Brotherhood of Locomotive Firemen now includes 519 lodges, and 22,978 members.

"The kind of insurance and relief afforded by the orders of railway employees is much the same as other labor organizations and secret societies provide their members. The railway relief departments under discussion in this paper are organized upon a different plan, and provide the members not only with payments on account of death, but also with assistance of definite amounts in case of sickness or accident. The present paper must confine itself to the history of railway relief departments, their plan of organization and results accomplished. A complete presentation of the subject of railway employees' relief and insurance is not attempted; that would necessitate a study of the plans for relief and insurance that have been adopted by the employees' orders, the scope of their work, the results they have accomplished, and finally a comparison of the orders and the railway departments as relief agencies.

"Thus far relief departments have been established in connection with six large railway systems, namely, Baltimore and Ohio, Pennsylvania Railroad, Pennsylvania Company (lines west of Pittsburg and Erie), Chicago, Burlington and Quincy, Philadelphia and Reading, and the Plant System.

'Each of the six relief departments is administered conjointly by the companies composing the railway system to which the department belongs. All the companies of the Baltimore & Ohio are associated in the relief organization of that system. The Pennsylvania Railroad's department comprises the Pennsylvania Railroad (lines east of Pittsburg and Erie), Northern Central, Philadelphia, Wilmington and Baltimore, and the West Jersey and Seashore.

"The motive that impelled the employees' to unite with the railway companies in the establishment of relief departments was the desire to secure aid in case of sickness or accident, and to obtain a life insurance that would insure their dependents against want. Railway employees are a comparatively well-paid class of laborers, but both their itenerant life and the intermittent character which the alternating periods of activity and inactivity in business give to much of their work militate against economical living and habits of saving. The employees have adequate reasons for favoring systematic relief and insurance agencies.

"The railway companies were moved partly by philanthropic and partly by financial motives. In the establishment of relief departments, as in the case of many other measures taken by corporations, philanthrophy and economy go hand in hand. The desire on the part of the managers and directors of many of the large railway systems to promote the material and ethical well-being of their employees, is attested not only by the existence of relief departments, but also by the railroad Young Men's Christian Associations, reading rooms, libraries, and other well-known institutions supported in large part by the employing corporations. Without doubt, however, the conviction that money expended in helping maintain relief departments for the promotion of the material welfare of the operatives would prove a good financial investment was the most potent of the forces that influenced the action of the railway companies. The directors of some railways, at least, became convinced that the best interests of the roads, even when these interests were viewed strictly from a business standpoint, required that the employed should be connected with the companies they serve by some other bond than that created by the payment of current wages, and the companies thus realized that their greater good required them to identify as fully as possible their own and their employees' interests. Indeed, in this way only is it

possible to create such an esprit du corps as makes strikes impossible, and prompt men to give their employers the highest possible grade of service. In 1889, Mr. E. P. Ripley, when general manager of the Chicago, Burlington and Quincy Railroad, stated that the object of the company in establishing a relief department was to enable its employees to make provision for themselves and families at the least possible cost to them in the event of sickness, accident, or death. The company has established this department not only because it has the interests of its employees at heart, but because it believes that the department will serve to retain and attract a good class of employees, lessen the amount of discontent caused by improvidence, diminish the amount of litigation in cases of accident, and increase the good will of the employees toward the company, and their confidence in the good will of the company toward them."

Prof. Johnson also says some of the railroads adopting relief systems in conjunction with their employees, have also established in connection therewith a pension feature for the purpose of creating a fund to be used in providing for superannuated employees or those permanently disabled. It is thought by some that the Baltimore & Ohio Railroad has adopted the most satisfactory system. It gives superannuation annuities to retiring employees who have reached the age of 65 years, have served the company ten consecutive years and have been members of the relief department for four years. This pension is one-half the allowance granted to sick members. The members in the relief department are divided into five classes based on their wages. If the pensioner has been a member fifteen years he gets an additional five per cent., and ten per cent. when twenty years a member.

It is claimed that the relief department benefits not only the employees, but also the railroad company and the public, as the disposition on the part of the companies to promote such vital interests of their helpless employes, tends to a harmonious promotion of the mutual interests of labor, capital and society.

These relief departments are additional to and in competition with the large relief and insurance associations independently conducted by the various orders of railway employees. Railway employees also support one or two small homes for aged and disabled employees.

It is obvious that persons in the most numerous class of railroad employees, viz: those engaged in and around locomotives and running trains, are open to accidental injuries which no foresight of the companies can obviate. No similar dangers beset telegraphers, so that beside following the wise and enlightened policy of securing the advantages of a longer and more loyal service of their faithful and experienced employees, the railroad managers at the same time assist in providing prompt pecuniary aid in a systematic way to the unfortunate who are so frequently injured in the performance of their duty.

A few commercial telegraphers at present are supporting the Telegraphers' Mutual Benefit Association which provides the payment of $1,000.00 or $500.00 upon the death of a member. They also have in New York City and in a few other large telegraph centres, aid societies for the payment of weekly benefits to sick members. The Commercial Cable Company supports a system by which the lives of its employees are kept insured at the company's expense in one of the large life insurance companies.

It seems to me that any system of pensions for persons employed by telegraph companies must particularly apply to those who are constantly employed at the key, as they greatly outnumber all other classes of employees and will continue to increase in a greater ratio.

Those at the key in some respects are subjected to the most trying conditions of service which is quite different from almost all other branches of industrial occupations; yet a pension system, if adopted, should be elastic enough to provide equitably for all classes of commercial telegraph employees.

In the Pennsylvania Railroad Company's plan of pensions all officers and employees who give entire time to the company and who attain the age of 70 years, or who being between the ages of 65 and 69 years inclusive, and having been employed 30 or more years in the service of the railroad company, and shall then be physically disqualified, shall be relieved and placed on the pension roll. No accident nor sick benefits shall be paid thereafter. No person over 35 years of age shall be given employment by the railroad company unless with the approval of the Board of Directors.

The Illinois Central Railroad supports a pension system which provides for all officers and employees 70 years of age, and who have been ten years in the service, except locomotive engineers and firemen, conductors, flagmen, brakemen, train baggagemen, yard masters, switchmen, bridge foremen, section foremen and supervisors. These may be retired at 65 years of age and pensioned if ten years in the service.

It is manifestly absurd to think of a pension system that is only applicable to active telegraphers when they arrive at the age of 65 or 70 years. The large proportion of actual active operators to those holding advanced desirable positions which afford better wages in large telegraph centres, confine the chances of promotion and betterment of condition in the service, to a very inconsiderable number, particularly as the extension of the service in the face of telephone competition and fast mail service, must be slow and the promotion of operators to positions of less physical strain and greater emolument must necessarily be infrequent.

It is my opinion that no pension system such as advised in Mr. Carnegie's letter, can be inaugurated unless by and with the leading and active co-operation and participation of the telegraph companies. The question must be understood aright before anything satisfactory can be accomplished. If the telegraphers choose to organize and voluntarily provide pensions for themselves that is one thing, if they prefer to join with their employers in a relief system, that is another thing, the latter to my mind is the only feasible plan.

Persons engaging with a telegraph company

to work wires are supposed to know in advance that the first few years of their service are the most profitable to the company, and that as time goes on they become less and less able to transmit or receive telegrams rapidly. The age at which operators become incapacitated, of course, depends upon their physical constitution and the kind of wires they are required to work.

Quite a large proportion of operators are ladies and it will not be denied (other things being equal) that they are not physically adapted to endure the strain of working busy wires for as many years as male operators are able to do. It is fair to presume that if the foregoing statements accord with the facts that they are well known to all who have entered the telegraph service and that they knew what to expect when the time arrived that they became worn out with toil.

The great cost of telegraph wires to cover so many thousands of miles, and the enormous cost of their equipment and maintenance, together with the great wear and tear of the system, renders it a stern necessity, under present conditions, that the telegraph companies should secure the greatest possible transmission of traffic over each and every circuit during the busy hours of the day, in order that enough revenue may be earned not only to pay high wages to the employees, but also to keep the system in the very best working condition, meet all depreciation and return a fair dividend to those whose capital brought the telegraph system into existence and set and kept it in operation.

If it is true that young persons who have entered the telegraph service as operators, become incapacitated on an average in a comparatively few years and need replacing by young blood, for the good of the service, then indeed the labor question assumes not only for them, but for the companies as well, an extremely serious importance.

As a rule operators have not the time nor opportunity to acquire a more lucrative profession or trade nor to make profitable investments with what they may have been able to save, and the serious problem confronts them as to their future source of income to provide for their comfort should they pass the average age limit and become incapacitated.

The manner in which this will affect the companies will be in the higher rate of wages demanded in the telegraph service than in other industrial pursuits in which the conditions of labor are more favorable and afford a better prospect for providing something for the comfort of the employees in the inevitable and proverbial "rainy day."

There are at present employed in the telegraph service several persons who are fit subjects of sympathy and assistance. They have drifted along through the years, many of them being favored by the companies and kept at work on circuits which could have been made to yield more revenue in other ways, and the time has arrived when such operators, incapacitated from age or otherwise, must step aside for others more active. It was probably such operators that the Old Timers had in mind when efforts were made to establish a home, but if any plan could be arranged by which the limited number of existing incapacitated telegraphers can be given permanent pecuniary relief, the plan would be greatly contracted below the one I believe this committee was appointed to consider and the one advised by Mr. Carnegie.

Under all the circumstances, in view of the character of the whole subject, I suggest that this committee report back to the telegraphers by whom it was appointed with the recommendation that if they believe that there is a prospect of the telegraph and cable companies giving any assistance in the formulation and establishment of a satisfactory pension or other relief system in connection with their employees, that a competent expert such as Prof. Emory R. Johnson, Ph. D., of the University of Pennsylvania, be employed to devise a practicable system that will meet the approval of the telegraph companies, Mr. Carnegie and the telegraphers.

Very respectfully,
(Signed) Francis W. Jones,
Chairman.

At a regular meeting of the Pension Committee on August 18th, 1902, in the office of Mr. E. F. Howell, 195 Broadway, New York, the above report was accepted and adopted as the Committee's report to be printed and presented at a meeting of telegraphers to be held at the Press Club in New York, on the evening of November 18th next.

The pension committee consists of Francis W. Jones, John Brant, E. F. Howell, W. C. Burton, P. J. Tierney, and W. A. Van Orden.

The letters previously referred to are as follows:

Hon. Carroll D. Wright,
Commissioner of Labor,
Washington, D. C.

Dear Sir:—

"I take the liberty of enclosing a copy of a letter which has been addressed to the executive officers of the Western Union Telegraph Company, Postal Telegraph-Cable Company, Canadian Pacific Telegraph Company, the Great Northwestern Telegraph Company of Canada, and the Postal Telegraph Company of Texas.

"I think the letter will briefly explain generally an object which the telegraph fraternity is desirous of securing if possible. The subject, however, is quite complicated, and far-reaching as to details and effects.

"I am the present chairman of the committee alluded to in the first paragraph, and have received very friendly expressions from the chief officers of the Postal-Telegraph-Cable Company, and also the Commercial Cable Company, but the formulation of some feasible plan seems to me to require an expert in this line who has had considerable experience with similar systems for other large corporations, and who could give it special attention, which it is quite impossible for the telegraphers' committee to do, and which I fear could not well be undertaken by the telegraph companies themselves, but if there could be devised some system which contained the elements of practicability and mutuality, I do not doubt but it could be successfully launched.

"Would you be so extremely kind as to give me the benefit of your views upon the subject, and if you coincide with my views as to the necessity for an expert, to suggest the name of one whom you think would be competent.

"I notice that in your report, No. 8, of January, 1897, on page 42, that great credit has been given to Dr. W. T.

Barnard in respect to the Baltimore and Ohio system, and Mr. J. A. Anderson, of Trenton, N. J., as the author of the Pennsylvania Railroad Company's system.

"The telegraphers at present have no national brotherhood embodying a relief, pension or insurance system, excepting the Telegraphers' Mutual Benefit Association, which is to a small extent encouraged by both of the great prevailing telegraph companies. There is, however, in New York a relief and aid association, and possibly there may be similar ones in Chicago and elsewhere.

"Any service you can consistently render to the telegraphers in this direction, I am sure will be heartily appreciated. Very respectfully yours,

"FRANCIS W. JONES, Chairman."

New York, July 30, 1902.

"In answer to your very interesting communication of July 30th, I have to say that after carefully examining the project as stated by the committee in its communication of May 9th, to which you refer, I heartily approve the suggestion made. I am in accord with the recommendations of Mr. Carnegie. The home is not what we want, it seems to me, but a joint fund for the benefit of telegraph operators. Some scheme introducing the best features in the Pennsylvania Railroad and Baltimore and Ohio Railroad plans would accomplish the purpose. Prof. Emory R. Johnson, University of Pennsylvania, Philadelphia, is the best informed man in the country, so far as I know, on these subjects, and I would cordially recommend to you that he be not only consulted, but employed as an expert in shaping the plans for your association. Homes do not meet the needs of the men. I think this has been proved by such establishments as the Drexel Home in Colorado for printers, although that has met with perhaps reasonable success. Mr. Carnegie's position is so strong that it ought to be considered, and I am very glad to see that in the vote of your committee it was decided not to consider the establishment of a home.

"I send you a few bulletins in which you will find articles and reports, some of them from Prof. Johnson, on relief associations.

"If I can be of any further service to you I trust you will feel at liberty to command me."

The letter addressed by Mr. Jones to the telegraph companies was as follows:

Dear Sir:

A committee representing a large number of telegraphers has requested me to solicit your advice and co-operation in formulating and carrying into effect a plan for the care of incapacitated and aged worthy telegraphers in the United States and Canada.

This subject has been for some time under the consideration of the telegraph fraternity in the United States, and I thought it would be agreeable to you and conform to your convenience if I were, as succinctly as possible to give a resume of the situation as it presents itself to the committee aforesaid.

The necessity for the care of incapacitated telegraphers has long been felt, and various unsuccessful efforts have been made to devise some permanent plan for their relief.

The first serious move in the matter was made in Chicago a few years ago by the Old Time Associated Press Operators presided over by Mr. Addison C. Thomas of The Associated Press, but no definite step was taken.

The question came up at the Old Time Telegraphers' meeting held in St. Paul in September, 1900; Mr. Thomas formally turning the matter over to the Old Timers' Association which referred it to its executive committee for action.

The prevailing sentiment at that time seemed to be in favor of a Home, and some generous offers from Colorado were made to give land and money for the purpose. Shortly after the St. Paul meeting Mr. W. C. Connolly, Jr., of Pittsburg, in behalf of the telegraphers wrote to his friend, Mr. Andrew Carnegie, asking his assistance in the establishment of a home for telegraphers, to which letter Mr. Carnegie made the following reply—

5 West 51st street,
New York, Feb. 13th, 1901.

Mr. W. C. Connolly, Jr., Pittsburg, Pa.

Dear Mr. Connolly:—

Yours of January 14th is before me this morning. I have known several "Homes for the Aged" of specified classes that amounted to little or nothing, from Bulwer's "Home for Decayed Authors," down. Old men will not leave home and its associations to live in a distant place. Would it not be better to have a pension fund for telegraphers who are aged and invalid? I do not see why the Pennsylvania Railroad system should not be introduced; the railroad pays half and the employees about half, and this takes away from it the element of charity. Men enjoying the pensions are really using what they themselves have contributed. If the Old Time Telegraphers' Association would get up a scheme like that, I should be glad to give a sum as a nucleus.

"I feel very warmly toward my old associates, and should be glad to give a considerable sum, provided the pension scheme could be made available. My opinion is that this would do far more good than your proposed home away out in Arkansas. Very truly yours,

ANDREW CARNEGIE.

P. S.—The telegraph companies would also contribute, I think, as the Baltimore and Ohio and Pennsylvania Railroads do. Please let me know how the idea strikes you.

Mr. Carnegie's reply, as I am informed, was forwarded to Mr. A. C. Thomas, who with Mr. S. A. Duncan, Col. W. B. Wilson, Mr. Frank Richardson and Mr. Walter C. Burton, had been appointed a sub-committee of the executive committee of the Old Timers' Association upon the telegraphers' home subject.

At the Montreal meeting of the Old Timers in 1901 upon the report of the executive committee the subject was discussed and the following resolution was adopted unanimously:

"Moved that this association, thoroughly believing in the care of incapacitated telegraphers, does not believe a national or international home is practicable." It was generally understood that as an association is was out of its sphere to attempt to represent the telegraph craft at large in the matter, as the Old Timers were organized purely for social purposes.

After the above meeting the Editor of TELEGRAPH AGE was immediately besieged from all parts of the country by correspondents urging that the subject be not allowed to drop, but that some steps be taken by the telegraphers themselves to inaugurate a relief system for incapacitated telegraphers, as it was conceded by the Old Timers and all others who had given the subject consideration, that such a system was very greatly needed, but as to just what direction this relief system should take, whether for a home or for pensions or for some other method, there was a diversity of opinion.

The Editor of TELEGRAPH AGE submitted the matter by letter to Mr. Carnegie for his judgment as to the most feasible plan, and in reply Mr. Carnegie emphatically declared himself against the home idea, and in favor of some system based upon the pension or superannuation scheme, and he has declared that if a feasible scheme can be

gotten up that he should be glad to give a considerable sum towards it.

Further details, with which it does not seem wise to burden this letter, will be found in the printed reports of the Old Timers' Association for 1900 and 1901, New York Sun, December 5th, 1901, New York World, January 15th, 1902 and Telegraph Age January 16th, 1902.

A few representative telegraphers of New York issued a limited invitation for a meeting at the New York Press Club on March 20th last to take up the subject where the Old Time Telegraphers had dropped it, and to see if a practicable plan could be devised.

The meeting, of course, was merely a nucleus of what promises to have national scope, as it intends to place itself in communication with telegraphers in all the chief centres of telegrah industry in the United States and Canada, and if possible, secure harmonious action.

At this meeting the chairman was directed to appoint a committee of five prominent telegraphers with power to add desirable persons to the number of its members, who were to thoroughly consider the subject of pensions or other methods of relief, and if possible, formulate a plan which, after consideration and adoption at a subsequent meeting of telegraphers, should be submitted for approval and co-operation to all the important telegraph centres of the country.

Tentatively this committee has decided that its labor should be governed and given direction by the following considerations:

That no plan should be considered that would interfere with the work being carried on by the Telegraphers' Mutual Benefit Association or the various insurance and aid societies.

That only a plan of relief for incapacitated and aged telegraphers referred to in the discussions of the Chicago Press Telegraphers, and the Old Time Telegraphers and in Mr. Andrew Carnegie's communication should be considered.

That such plan should merit the approval and support of telegraph employers, and that the scheme should embrace all persons employed in commercial telegraphy, including the press in the United States and Canada.

That the plan should not be characterized by any humiliating color of charity, and that it be supported by the contributions of all telegraphers who wish to participate in its benefits.

There is no disposition on the part of the committee to ask the proprietors of the commercial systems to render any assistance that will not be deemed by them to be mutually advantageous.

It has also been suggested tentatively, that there could be two funds established, one in the nature of a gratuity and another in the nature of an annuity. The former to be built up from such contributions as may be received through the generosity of Mr. Carnegie and others, or from proceeds of entertainments, etc., and only the interest thereof used in an equitable manner for the benefit of those eligible for assistance.

The latter to comprise the amounts paid in by members and telegraph companies for the benefit of the annuitants or pensioners under proper rules to be established, and that whatever amount is contributed to such fund by any company shall only be for the benefit of its own employees and not for those of any other company.

I am sure that the more thoughtful telegraphers realize that in many cases the Western Union and Postal Telegraph companies have been conspicuously generous towards old employees who have become pretty well worn out in their service; but it is thought by many that by a proper system of relief or pensions that the telegraph employers could, by contributing to such a system, not only relieve themselves of these sporadic cases which have taxed their magnanimity in the past and will probably continue to do so for some time to come, but would be enabled to rearrange their employment of labor upon a more systematic basis, insuring to themselves the advantages of the experienced service of their employees for a greater length of time and under more favorable conditions; the laborers becoming less restless and worried about their futures and making less effort to seek other fields of industry for the purpose of protecting themselves and their families against the ravages of time which their small salaries are not adequate to meet.

There can be no doubt but that aside from the ultimate purpose of providing pensions or other practical assistance to an unfortunate but inevitable class of employees, that the considerate cooperation of employers in caring in a business manner for the physical interests of their employees would create an influence whose importance in relation to capital and labor is becoming more widely appreciated by wise men every year. It is an influence that tends towards co-operation and must surely promote between the two effectively, though silently, that harmony which is the basis of their common prosperity.

The committee is very desirous of securing your advice and assistance in behalf of the telegraphers whom it represents, and would feel very grateful if you will either act yourself or designate some one in your company to act with the committee to enable it to dispose of the subject committed to it to the best advantage of all concerned.

It is thought by the committee that your position in a company that has attained large proportions and employs a large number of telegraphers, should entitle it to be represented by you in a matter of such importance to the telegraph employees, and the committee is confident of your good offices in furthering telegraphers' interests in any consistent and reasonable manner, and will be glad to hear from you at your earliest convenience and to receive any suggestions from you, or to answer any questions which you may desire to make.

Col. A. B. Chandler writes under date of May 1: "Your excellent letter of 28th ult., received and appre-

ciated. I need only say now that I am in full sympathy with the purpose expressed, that of devising and putting into effect a plan for the relief of aged, disabled, or partly disabled telegaphers. I do not feel sure that I shall be able to render such aid in the matter as seems to be expected of me, but, on my return to New York, about the middle of May, I hope to confer with you, and perhaps others, concerning it, and if I can help so worthy a cause, even in small measure, I shall be very glad to do so."

Mr. George G. Ward, had this to say on May 8.

"I have received your note relative to the pension scheme of the telegraphers of America. I am very sorry I have not the time to go into this question with you as I am sailing to-morrow for Europe. You will remember, however, that I gave you my views on this subject some time ago. I trust your committee will be able to devise some plan by which Mr. Carnegie's offer can be accepted and the fraternity taken care of in their old age."

Montreal, Canada, May 13th, 1902.

Mr. C. R. Hosmer, writing from Montreal on May 13, said:

"I beg to acknowledge receipt of yours of the 9th, with reference to carrying into effect some plan for the care of incapacitated and aged worthy telegraphers in the United States and Canada. I might say that the Canadian Pacific Railway at its last annual meeting obtained authority from its shareholders to establish a pension fund, and the officers of the company are now endeavoring to work out some plan to accomplish this end. I think therefore you would have to leave the Canadian Pacific employees out of your proposed scheme. Personally, I would very much like to know that some provision had been made for the incapacitated and aged members of our profession, but I must confess that I do not see just how is could be worked out excepting through a pension fund, which would have to be adopted by each company, who would provide for its own employees. With kind regards, and hope you may be able to evolve some successful method of dealing with this worthy object."

Mr. H. P. Dwight, president and general manager of the Great Northwestern Telegraph Company of Canada writes from Toronto, under date of June 11:

"Yours of May 9th came duly to hand. The question referred to is evidently a complicated one, and I do not at present feel qualified to offer any advice or suggestions in the case. The necessity for some action in the matter, I presume, is more evident with your people than it is with us on this side of the border, although I would not like to say that there is no need for such a scheme with us. All I can say meantime, is, that if any plan can be reached in the interest of all concerned, we shall be very glad to take our part in the matter."

Col. R. C. Clowry, president and general manager of the Western Union Telegraph Company, writes on August 25th, 1902:

"My time has been so taken up with matters pressing for immediate attention that I have been able to give only superficial consideration to the letter from the Pension Committee of the New York telegraphers which I received under date of May 9th.

"I understand that some reply from me is needed to round out the correspondence on the subject which is shortly to be published, and I therefore write briefly to say that while I am personally in sympathy with any well-considered scheme for the betterment of the condition of telegraphers as a class, I see many practical difficulties in the way of carrying out any comprehensive pension plan.

"Before the committee gets very far into the subject it will, I fancy, reach the conclusion that no pension system can be successful which is not established and managed in conjunction with the telegraph companies; and the subject is a very large one for the companies to consider. While pension systems varying somewhat in detail but having a common basis of equal contributions from employer and employees have for years been in apparently successful operation on several large railroads, the conditions of service in the telegraph field are not the same as in railroad work, and the considerations which probably governed the railroad companies in inaugurating and pushing the pension scheme would not be equally potent with the proprietors of the telegraph properties. This is the first time, too, that it has been proposed to unite in such a scheme the employees of more than one company.

"I have no statistics on the subject, but I am under the impression that the number of telegraph operators who are engaged in the service at the age of 65 and 70 years (the age when most pension systems are operative), and who at the age are incapacitated for work and in need of financial assistance, cannot be very great, and it has been the policy of, I think, all the companies to take care of such employees in one way or another.

'I do not know to how great an extent this agitation of the subject may be based on a desire to profit from Mr. Carnegie's kind offer to make a contribution which would form a nucleus for a pension fund, but I am afraid that any plan of assessment based on an adequate contribution from the employe to the large sum which it would annually be necessary to raise to afford the relief contemplated, would be bitterly opposed by many of the employees on whom it would be compulsory."

Write your name in kindness, love and mercy on the hearts of those you come in contact with day by day, and you will never be forgotten.—Chalmers.

Trust no future howe'er pleasant,
Let the dead past bury its dead,
Act, act in the living present,
Heart within and God o'erhead.
—Longfellow.

General Mention.

Mr. E. O. Shock, of the Postal Telegraph-Cable Company, Baltimore, Md., is absent on an extended vacation for the benefit of his health.

Charles Malone, M. D., for many years an operator for the Western Union in their Boston main office, has resigned to follow his profession in that city.

Mr. F. C. Hackett, chief operator of the Western Union Telegraph Company, Cleveland, O., in renewing his subscription, writes: "I can't get along without it."

The Buffalo Electrical Aid Association, John G. McNerny, president, and George W. McCoppen, secretary, has just issued its semi-annual circular, which shows that its condition financially is strong.

Mr. J. F. Malone, who represented The United Press at New Haven, Conn., up to the time that concern ceased to do business, is still a resident of the Elm City, where he is prospering in commercial pursuits.

The young King of Spain is reported to have satirically remarked the other day that, while a hundred years ago it took a day to carry news from one given point in Spain to another, now with the telegraph, it took but two days.

Mr. J. A. Cahoe, of the Postal Telegraph-Cable Company, Louisville, Ky., has resigned to accept a position with the Western Union Telegraph Company at the same point. Mr. Cahoe is the Louisville representative of TELEGRAPH AGE.

Mr. Thomas A. Edison recently wrote: "I believe that within thirty years nearly all railways will discard steam locomotives and adopt electric motors, and that the electric automobile will displace the horse almost entirely. In the present state of science, there are no known facts by which one could predict any commercial future for aerial navigation."

The Railroads.

Mr. W. A. Freese has been appointed superintendent of telegraph for the Chicago & Alton railroad lines, with headquarters in Bloomington, Ill.

The Southern Railway Company, the system embracing a majority of the railroad lines south of the Potomac and Ohio rivers, has renewed its leases with the Western Union Telegraph Company.

Ralph Peters, general superintendent of the Southern system, Pennsylvania lines, has been made chairman of a committee appointed by the American Railway Association to outline a new form of telegraphic code to be used on all the railroads of the association. The committee was appointed at a recent meeting of the association, and instructed to prepare a code that will be suitable for general adoption. It is the intention of the association to adopt, if possible, a cipher code for all lines through the country, and in this way not only simplify the work of the telegraphic departments on different lines, but net a material saving in the matter of telegraphic expenses.

The Erie Railroad has recently completed the installation of a storage battery plant at its station at Huntington, Ind. The plant consists of 240 cells 6 A-H Willard battery on the mains, giving both polarities at 120 volts, and eleven cells of the same capacity working eleven locals. The eleven local cells are not duplicated in the plant but are kept on the sounders constantly, taking their charge along with the mains during the eight-hour charging period. The mains are charged in banks of thirty cells against a pressure varying from ninety-eight to one hundred and ten volts from the exciter of the Ft. Wayne and Southwestern Traction Company's power plant near the station. Eight wires are batteried, four from each polarity, and a marked improvement is found in their working as compared with the gravity.

What the Leading Electrical Paper Has to Say About Pocket Diagrams.

The new volume, "Pocket Edition of Diagrams and Complete Information for Telegraph Engineers and Students," by Willis H. Jones, and published by TELEGRAPH AGE, which is having such an enormous sale, is thus referred to by the Electrical World and Engineer, the leading electrical journal of the world:

"Telegraphers are severely practical men and not theorists, and Mr. Jones, a practical telegrapher himself, has, in this book, undertaken to lay before his fellow-workers all that is modern in telegraphic apparatus and practice. He, moreover, uses the simplest English in his descriptive matter, which no one can very well fail to comprehend. Theory has been studiously avoided, except to a very limited extent, where it was found necessary as an aid to a better understanding of the principles involved in the construction and operation of the apparatus described.

"The 260 pages of subject-matter are well printed, and the 126 specially-drawn illustrations are very clear in treatment. The illustrations consist of diagrams showing the wire connections between the various instruments constituting a set; between apparatus and instruments, etc., and form a very important feature of the book. The work possesses an originality that cannot fail to be interesting to all telegraphers and telegraph engineers. It is divided into 41 chapters, and as these cover such a wide range of subjects their headings are given herewith:

* * * * *

"It is evident from the above list of contents that the work is thoroughly modern, and since it bears the stamp of authority (Mr. Jones being associated with the engineering staff of his company) it will probably become one of the standard works on practical American telegraphy. It is written primarily for operators for the purpose of instructing them about the apparatus with which they have to deal, and this educational feature cannot fail to redound to the benefit of the telegraph service, if the ambitious and energetic operator will recognize in it an opportunity to better his condition. The work is 'pocket size (4½ inches wide by 7 inches high), and bound in stout flexible leather."

The Old Timers' Reunion at Salt Lake City.

The twenty-second annual reunion of the Old Time Telegraphers' and Historical Association and of the Society of the United States Military Telegraph Corps, will be held this year at Salt Lake City, Utah, the date being set for Wednesday, Thursday and Friday, September 10, 11 and 12. The headquarters of the visiting telegraphers in that city will be at the Kenyon Hotel, an excellent hostelry, conducted on the American plan, charges being at the rate of $2.50 per day and upwards. Members who expect to attend the reunion and who desire to secure hotel accommodations in advance, are requested to promptly notify Mr. George C. Fenton, of Salt Lake City, chairman of the hotel committee, who will gladly undertake to arrange for rooms as may be required. As will be observed from the following programme, a pleasant round of entertainment, covering the three days of assemblage, has been arranged for the enjoyment of all who attend.

GEORGE H. CORSE, OF OGDEN, UTAH.

President of the Old Time Telegraphers' and Historical Association.

On the first day, Wednesday, September 10, at ten o'clock in the morning, the joint meeting of the Old Time Telegraphers' and Historical Association and of the United States Military Telegraph Corps will occur at the Kenyon Hotel. This will give the members an opportunity for a fraternal meeting, to exchange greetings, and to renew the friendships formed in years past at similar gatherings. It may be assumed that the half-hour assigned for this purpose will be a thoroughly enjoyable one.

The business meeting of the Old Time Telegraphers' and Historical Association will follow at half-past ten, held in the same place, succeeded at half-past eleven by a similar meeting of the United States Military Telegraph Corps. These brief, formal function completed, the rest of the entire stay will be given over to the pleasures of the reunion. In the afternoon of the same day, at half-past two o'clock, a drive about the city will be taken. This will include a visit to Fort Douglass, to Salt Palace, and to the grave of Brigham Young. For the remainder of the day, according

BELVIDERE BROOKS, OF NEW YORK.

Vice-president of the Old Time Telegraphers' and Historical Association.

JOHN BRANT, OF NEW YORK.

Sec'y-Treas. of the Old Time Telegraphers' and Historical Association.

to the programme, the time will be given over to a "go-as-you-please," and the many attractions of the city of Salt Lake, which for so many years has been the Mecca of all good Mormons, will doubtless come in for pleasant inspection.

CHARLES B. HORTON, OF DENVER, COL.
Chairman of the Reception Committee.

Salt Lake City is now a large and bustling town, and will no doubt agreeably surprise many, especially those from the distant East, not only in its extent, but in the amount of business done there,

J. B. TWIFORD, OF SALT LAKE CITY.
Member of the Executive and Reception Committee.

the beauty of its streets and of much of its architecture. Several views of Salt Lake buildings are shown herewith, including the tabernacle; the temple, with the tabernacle in the background; the interior of the tabernacle and the large organ; a view on the main street, and the Pavilion and beach at Saltair, on the Great Salt Lake.

On Thursday, September 11, at ten o'clock, a trip is projected to Saltair, distant some twelve or

fourteen miles directly west from the city. This place is the Coney Island of Salt Lake, and here a day's outing will be had, the excursionists returning to the city at half-past six in the afternoon. In the evening a banquet will be given at the Kenyon Hotel. This will be a subscription affair, tickets for which have been placed at $2.50 apiece. It is proposed to make this a most delightful social event.

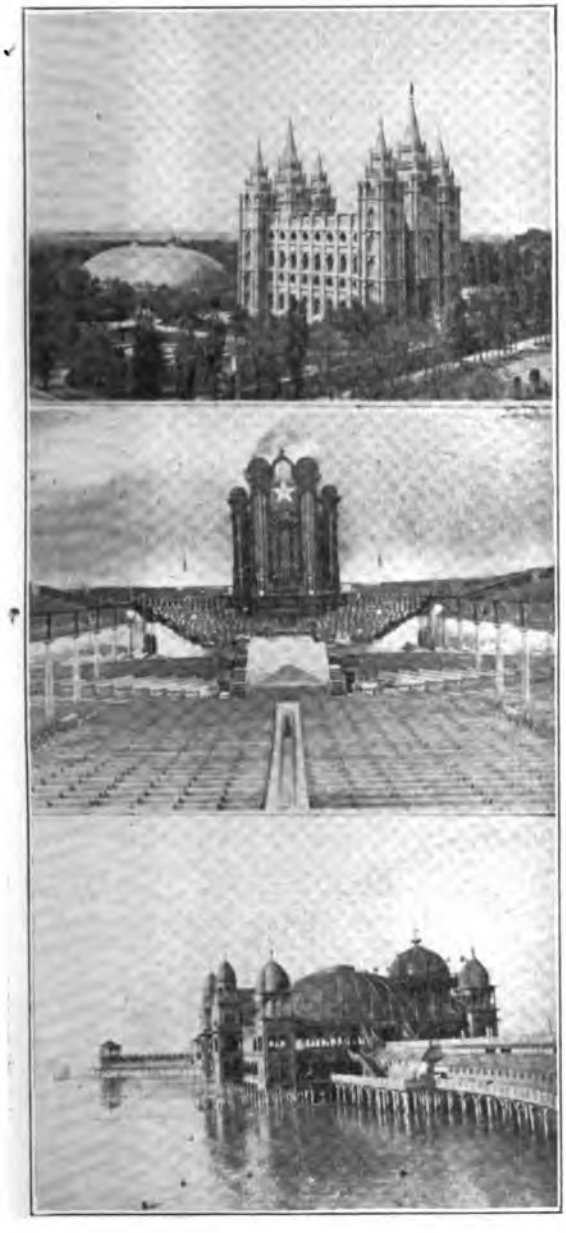
On Friday, September 12, the last day of the reunion, an organ recital on the famous instrument at the great Mormon Tabernacle is announced for half-past ten o'clock in the morning.

At the same time an excellent opportunity will be afforded for an inspection of the temple grounds, which are extensive and beautiful. At a quarter of one a trip to Ogden, situated between thirty and forty miles to the north, has been planned, the trip being made over the Oregon Short Line. A drive through the interesting Ogden Canyon will immediately follow, returning in

season to catch the train due at Salt Lake City at a quarter to six.

The several committees of the reunion are composed of the following named gentlemen:

Transportation Committee.—T. M. Schumacher, chairman, traffic manager Oregon Short Line; C. A. Tripp, commercial agent Missouri Pacific Railroad; C. A. Walker, general agent Chicago and Northwestern Railroad; L. L. Downing, commercial agent Chicago, Milwaukee and St. Paul Railroad, and Donald Rose, commercial agent Illinois Central Railroad, all of Salt Lake City.



Hotel Committee.—George C. Fenton, chairman; C. F. Warner, general agent Atchison, Topeka and Santa Fé Railroad; R. S. Campbell, manager Utah Light and Power Co., and I. H. Lewis, paymaster Rio Grande Western Railroad, all of Salt Lake City.

Reception Committee.—C. B. Horton, chairman, assistant superintendent Western Union Telegraph Company, Denver, Col.; Arthur W. Copp, The Associated Press; J. B. Twiford, manager Western Union Telegraph Company, and Samuel F. Fenton, all of Salt Lake City.,

The officers of the Old Time Telegraphers' and Historical Association are as follows: George H. Corse, president, Ogden, Utah; Belvidere Brooks, vice-president, New York; John Brant, secretary-treasurer, New York. Executive Committee: L. B. McFarlane, Montreal, Can.; H. C. Hope, St. Paul, Minn.; H. J. Pettengill, Boston, Mass.; J. J. Dickey, Omaha, Neb.; E. T. Hulaniski, J. B. Twiford, W. J. Shealy and G. W. Jones, Ogden, Utah, and L. L. Downing, Salt Lake City, Utah.

The officers of the United States Military Telegraph Corps are given below: Col. Wm. B. Wilson, president, Holmesburg, Philadelphia, Pa.; Wm. L. Ives, vice-president, New York, and J. E. Pettit, secretary and treasurer, Chicago, Ill. Executive Committee: E. Rosewater, chairman, Omaha, Neb.; A. H. Bliss, Chicago, Ill.; Col. A. B. Chandler, New York, N. Y.; W. R. Plum, Chicago, Ill.; George C. Maynard, Washington, D. C.; D. Wilmot Smith, Breckenridge, Minn.; R. B. Hoover, New York, N. Y.; L. A. Somers, Cleveland, Ohio, and J. D. Cruise, Kansas City, Mo.

The question of raising the age limit having been suggested in connection with membership in the Old Time Telegraphers' Association, the matter has become the subject of considerable agitation, and it appears that there has been an unusual amount of feeling aroused favoring a change. At the present time a person who has been in the telegraph service twenty years is eligible to membership. This makes it possible for a telegrapher entering the service as a messenger boy at ten years of age, to be eligible to membership in the association when he has attained his thirtieth year. The result is that the organization is rapidly becoming a "Young Time Telegraphers' Association." The question of raising the age limit to twenty-five or thirty years instead of twenty years, as at present, has been brought up at previous reunions. It may be well for the members to be prepared to take some action on the subject at this meeting. The officers of the association have expressed an opinion that the age limit ought to be raised, and the secretary, Mr. John Brant, in his report submitted at the Montreal Convention last year, used this language: "In scanning the applications for membership during the year past, your secretary has been impressed with the youthfulness of many of the applicants, and, after mature consideration, has reached the conclusion that if this organization is to be known as 'The Old Time Telegraphers' Association' it will be necessary to make the eligibility limit twenty-five or thirty years' service, instead of twenty, as at the present time."

Since the last meeting of the Old Time Telegraphers' and Historical Association and of the United States Military Telegraph Corps, held at Montreal, a year ago, the following deaths among the forty-niners who are members have occurred: Ira R. Amsden, of Buffalo, N. Y., December 11, 1901; David McCargo, of Pittsburg, Pa., January 25, 1902; James L. Mingle, of New York, January 26, 1902, and Charles F. Wood, of Boston, June 14, 1902. The members of the United States Military Telegraph Corps, who have died during the same period, are: D. E. Martyn, September 20, 1901; W. H. Eckman, October 6, 1901; W. J. Bodell, October 7, 1901; R. S. Gough, December 18, 1901; J. H. Emerick, May 11, 1902.

Business Notices.

The Hammond typewriter has long held a high place in the typewriting world. The ease and speed with which the machine is worked, the beauty of its type, and the fact that the written page is always in sight, are excellencies that have combined to make this a well-liked instrument among telegraph operators and the public generally. Never before in the history of the company have its sales been so large as at the present time, its export trade increasing alike with its domestic output.

The name of D. A. Mahoney, of the operating department of the Western Union Telegraph Company, Philadelphia, Pa., has become familiar to our readers by reason of his persistent advertising in these columns. He is the special representative of the Philadelphia Typewriter Exchange, which does a large typewriter renting and selling business, as so many have occasion to know; and who also has met with marked success in the special handling of the Fay-Sholes typewriter. Correspondence is invited by Mr. Mahoney.

If you are planning a trip to the mountains this summer, be sure to send for "Mountain and Lake Resorts," a little book just issued by the passenger department of the Lackawanna Railroad. It will tell you about some of the most delightful places in the East. The book is handsomely illustrated, and contains a series of amusing sketches, entitled "The Experiences of Pa." It will be sent on request, accompanied by five cents in postage stamps to T. W. Lee, General Passenger Agent, New York City.

Messrs. Foote, Pierson & Co., of 82-84 Fulton street, New York, the well-known manufacturers of telegraph and other electrical apparatus, advertise a few of their popular telegraph specialties on another page. These, as well as others not mentioned, all have an accepted place, and because of their superiority, both in design and construction, are highly popular among users. The Argus lightning arrestor, their main-line telegraph combination instruments, wireless telegraph coils, and the portable testing set known as the Delta, only need this reference to recall their high-grade excellence.

The Twentieth Century Telegraph Key is abundently attesting its usefulness. It has proved to be one of the best devices to overcome "lost grip" over offered to the operator. Mr. E. S. Russell, of the operating department of the Postal Telegraph-Cable Company, 253 Broadway, New York, agent for the sale of these keys, says that he has sold over 200 of them to operators in all parts of the United States, in every instance to those who were suffering from cases of lost grip. Without exception the report in each case has been that the sufferer has experience substantial relief by their use. No testimony of the utility of the key for the purposes designed could be stronger. Mr. Russell will be pleased to hear from his fellow operators who may be troubled with lost grip, and reference is made to his advertising announcement in this issue.

Rencent Telegraph Patents.

A patent, No. 706384, for a fire alarm telegraph thermostat system, has been awarded to R. G. Callum, Washington, D. C.

Patents Nos. 707007 and 707008, have been granted to Prof. M. I. Pupin, of Yonkers, for a system multiple telegraphy.

A patent No. 706251, has been granted to J. W. McDonald, of Larimore, N. D., for a mechanical telegraph transmitter. Morse characters are indicated on the rims of wheels, any one of which can be rotated to send its character to line by depressing a key which mechanically connects the disk with a rotating shaft.

Organization.

A local of the International Union of Commercial Telegraphers has been organized at Birmingham, Ala.

Four Western Union operators were recently dismissed at Buffalo, N. Y., for, it is said, alleged connection with the telegrapher's union; and two Western Union men at San Francisco for the same reason, were dropped from the pay-roll, making six in all at that point.

A call for a convention of commercial telegraphers, to be held in Chicago on September 20 has been sent out. The object is the forming of an international organization. The call was sent to forty-three cities throughout the United States and Canada where, it is said, local unions have been formed.

Late New York Visitors.

Mr. J. E. Peacock, manager Western Union Telegraph Company, Jacksonville, Fla.

Mr. Charles A. Dalton, superintendent of telegraph of the Southern Railway, Washington, D. C.

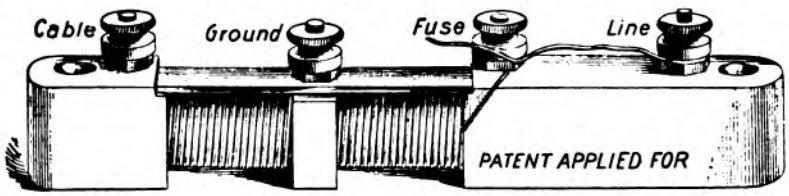
Mr. Clinton P. Russell, late general manager of the Postal Telegraph-Cable Company, of Dallas, Texas.

Foote, Pierson & Co.

A FEW OF OUR POPULAR TELEGRAPH SPECIALTIES

The Argus Lightning Arrester

The most reliable and efficient protection to instruments and cables against lighting ever known.



It interrupts lightning of any degree without grounding or disabling the line. It is always ready.

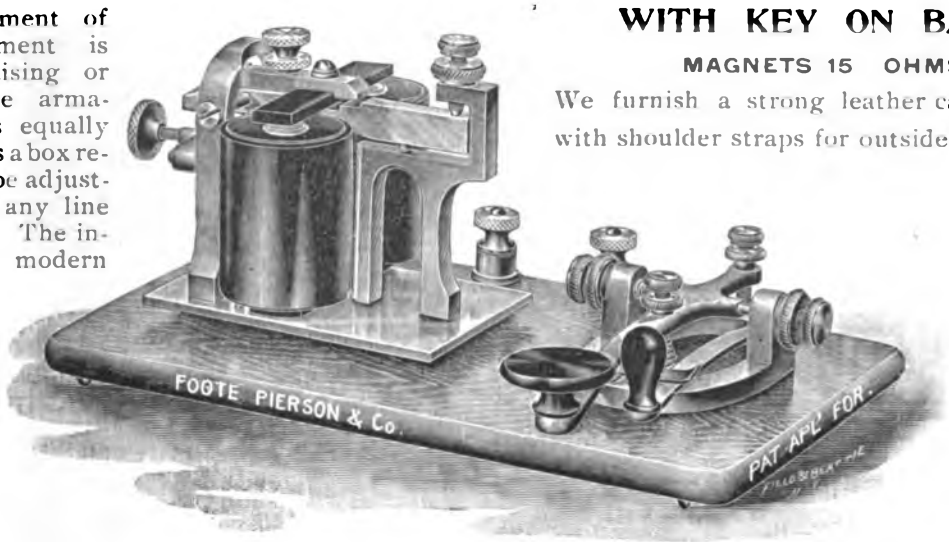
Our Main Line Telegraph Combination Instrument

WITH KEY ON BASE.

MAGNETS 15 OHMS.

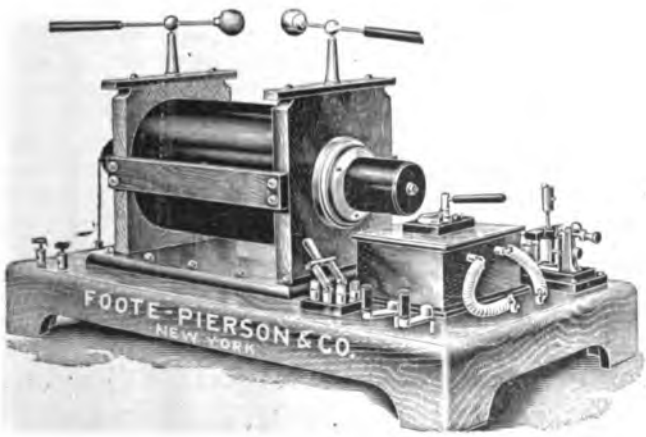
We furnish a strong leather carrying case with shoulder straps for outside line testing.

The adjustment of this instrument is done by raising or lowering the armature. It is equally as delicate as a box relay and can be adjusted to meet any line conditions. The instrument is modern in design and its use has made the box relay and pocket relay almost obsolete as it is cheaper and far better.



It makes the most convenient and efficient instrument for this purpose known.

Coils for Wireless Telegraphy



A Full Line of Measuring and Testing Instruments In Stock

THE DELTA Portable Testing Sets

For all around work. Universally used by Railway Telegraph and Telegraph Engineers.

WRITE FOR OUR NEW CATALOGUE.

FOOTE, PIERSON & CO., 82-84 FULTON STREET, NEW YORK CITY, U. S. A.

The Western Union Time Service.

Standard Time in these days of standard requirements is becoming not only an important, but an absolutely necessary factor in the conduct of general business. This fact is more and more apparent as commercial exactions grow more insistent. The method of determining, and the system of furnishing to all who require it, time

CHARLES H. MURPHY, OF NEW YORK.

Manager Western Union Time Service, Eastern and Southern Divisions.

that shall be correct and reliable under all circumstances, has developed into a business of very large proportions, with wide ramifications of service extending over the entire country. In one form or another correct time is publicly indicated in most of the large cities of the United States.

The idea of dispensing correct, or standard time, originated with the late James Hamblet, who established the time system for the Western Union Telegraph Company. He became the manager of the new bureau thus created, and continued as such until his death; which occurred in the Borough of Brooklyn, New York, in January, 1900. Mr. Hamblet was a man of keen perceptions, a genius in many ways, and attained a high reputation as an horologist. He was born in Boston, Mass., in June, 1824, and early in life became one of the most accomplished mechanicians of his day. For years as the trusted employee of William Bond and Son, he was engaged in the Eastern metropolis in the construction of marine chronometers, regulators for noting siderial time, and many other instrumental accessories of the observatory, requiring in their manufacture the highest skill of the trained craftsman. His name is found upon the observatory apparatus at Harvard and Columbia Universities, and at many points elsewhere, where the great telescopes of the fifty years past have been placed. Subsequently Mr. Hamblet gave his attention for a number of years to the manufacture of electrical apparatus, and later, from 1870 to 1876, just prior to his connection with the Western Union Telegraph Company, he had charge of E. Howard and Company's extensive clock works at Boston, where his skill was successfully applied to the building of astronomical regulators. This long preliminary work eminently fitted him for the future development of the time service to which he was now committed, and whose commercial control was logically undertaken by the telegraph company.

The usefulness of the time service was a practical proposition, and from the first grew in public favor, and when its author relinquished his work in New York at the close of a long and active life, it had expanded into an important department of the Western Union Telegraph Company, extending to all large and many smaller cities. At the outset Mr. Hamblet constructed and placed a clock of his own design for standard time purposes in the Western Union Building, New York. This was in use until 1885, when the company made an arrangement with the Self-Winding Clock Company of New York, and commenced putting their clocks into service. These clocks, which are now so familiar everywhere, are wound every hour by a small electrical motor attached to the clock movement, the electric current for driving the same being obtained from two small cells of battery placed in the clock case, the hands of the clock being connected by the time signals. By reason of their regular, uniform winding, they are the most accurate of time-keepers, and by the system which hourly corrects them, and which,

F. W. BRAINERD, OF CHICAGO.

Manager Western Union Time Service, Western Division.

each day, at noon, corrects the master clocks, as well, which controls them, an absolutely uniform time service has been provided.

The time service is controlled from the Naval Observatory at Washington by the electrical transmission of time beats. Five minutes before

twelve o'clock, Eastern time, each day, there is an almost absolute cessation of business on the wires, and an almost unbroken chain of circuits for time service is made up from Washington, reaching to the uttermost boundaries of the United States. The signals pass directly into the clocks, with which the wires are connected, and so give the time to all subscribers, whoever they may be, bankers, brokers, jewelers, public buildings, newspaper offices, and also to innumerable business houses and private residences throughout the country.

At the same moment the time balls, so familiar an object not only in New York, but in the majority of the larger cities, also indicate the time by their fall at noon. The original purpose of the ball at New York, the one first established, and which is placed on the roof of the Western Union Building, was to provide mariners with a ready means of accurately regulating their chronometers. Balls were afterwards erected at other seaports for similar purposes. The convenience of these time balls to the public is so generally recognized and depended upon that they have come to be regarded almost as a necessity, and their removal for any cause would doubtless be resented by the people almost as much as the withdrawal of any other great public utility, yet they are furnished free of all charge.

The death of Mr. Hamblet, and the growing importance of the time-service department to the Western Union Telegraph Company, determined that company to make some radical changes in its management in order to enable it to more fully cover the great field, and the enormous possibilities of usefulness confronting it. To this end, Mr. Charles H. Murphy, formerly clock inspector of the company at Denver Col., and afterwards district manager at Omaha, Neb., where he accomplished most excellent results, and who is regarded as perhaps the best equipped person in the service for the place, was called lately to New York and placed in charge of the time bureau. Already, in obedience to his general instructions, he is practically creating a new department, and has thoroughly reorganized his staff. The entire working and office equipment is being concentrated and placed in larger quarters on the street floor on the Dey street side of the building. Here will be located the recording master clock, and the seconds beat time transmitter through which the time signals are conveyed.

When all contemplated changes are completed, the important time service, not alone in New York, which is the chief office and directing head, but elsewhere throughout the country, will, it is expected, be guided by a more perfect harmony of purpose, and consequently of even higher efficiency then heretofore. Such intelligent efforts as are now being made to furnish standard time to the country at large in a more ample and comprehensive way than ever before attempted, will no doubt meet with the hearty appreciation and financial support it deserves.

As it is impossible to reach every part of the country from one central point, the time service for convenience is divided into divisions, of which there are four, corresponding to those of the Western Union Telegraph Company. These in turn are subdivided into districts, over each of which there is an inspector, who is stationed at the headquarters of the district superintendent of telegraph. The business of the inspector is to carefully maintain the service in his district and see that it is kept in proper condition. Each district is furnished with a sub-master clock, each being fitted with a device for closing the circuit in order to synchronize all other clocks in the district each hour, except at twelve o'clock, at which time it omits sending its own signals, and with all the subordinate clocks in line, is itself synchronized. Reports are made by the inspector to the local telegraph superintendent, who in turn reports to the division superintendent, final transmissions of the same being made to New York.

Chicago ranks next to New York as being the most important station in the country. The local manager at that place is Mr. F. W. Brainerd, who has been in charge since the time service was originated. Mr. Brainerd has been instrumental in creating the time service in the Western Division, and to him all credit is due in bringing it up to its present high state of effectiveness. His position in the Western Division is closely analogous to that held by Mr. Murphy in the Eastern and Southern divisions.

TELEGRAPH AGE will furnish operators with just the kind of practical information they need.

LETTERS FROM OUR AGENTS.

[Advertising will be accepted to appear in this department at the rate of five cents a word, announcements to be enclosed with a border and printed under the name of the place of the advertiser. The special local value attached to advertising of this character will be apparent. Our agents are authorized to solicit advertisements for these columns, and further information on this subject may be obtained on application.]

PHILADELPHIA, PA.

My Motto—Honorable Dealing. D. A. Mahoney, Special Representative Philadelphia Typewriter Exchange, main office Western Union Telegraph Company, Philadelphia, Pa. **DON'T** think of applying at this office for a position unless you can use the "Mill," and **DON'T** think of arranging to buy or rent a new or remodeled typewriter until you have consulted me. All makes rented $3 per month. Write or telegraph for inviting terms.

WESTERN UNION.

Mr. W. Morrison, of this office, is spending a vacation of two weeks at his home in Delaware.

W. F. Sherer was suddenly summoned to Wash-

ington, D. C., owing to the serious illness of his wife.

Recent arrivals are: J. Anderson, Memphis, Tenn.; W. C. Wrenn and J. J. Beasley.

J. C. W. Tawes, of Crisfield, Md., is a visitor here.

Up to the present writing nothing has been heard of Western Union Manager Hagenbuch, of Allentown, Pa., and H. M. Shultz, an operator in this office, both men having disappeared several weeks ago, baffling all efforts to locate them.

CHICAGO, ILL., POSTAL.

Edward Zimmerman, our west board wire chief, has resigned to accept a position as secretary of a gold mining company.

A. E. Wilder, our New York division chief, is spending a well-earned vacation. Assistant Chief Bohrer is filling his place.

S. D. Barger is assistant night chief of city lines division, vice Edward Stanton, who has returned to a wire.

Several of the regular men were placed on the extra list on account of failure to report on the day after pay-day.

A. T. Hickey and F. H. Williams are subbing at a broker office.

O. T. Anderson has resigned to accept a position with a brokerage firm at an increase in salary.

Chicago Division, No. 104, meets every first and third Saturday at 8 P. M. at Garfield Hall, 55th street and Wentworth avenue. The next meeting will be held Saturday, September 6. All O. R. T. men are invited to attend. O. T. Anderson, secretary and treasurer.

A Prominent Chicago Telegrapher.

Dr. John C. Kinney, a prominent figure in this office, was born at Rock Island, Ill., April 28, 1866. He entered the telegraph service at Leavenworth, Kan., in 1885, to receive afternoon report. After a year's service at that point he returned to Rock Island to accept a position, taking report for the Western Union. Resigning after a short service he became assistant wire chief at the Rock Island Arsenal, Ill., a position he held for nearly five years. Desiring to again enter the telegraph field, he obtained the managership of the Postal Telegraph-Cable company's office at Rock Island, from which he was soon transferred to a similar position at Davenport, Ia. Resigning soon after, he went to the main office at Chicago, accepting a position as operator. Promotion rapidly followed, and he soon became assistant chief of the Metropolitan division, from which he was transferred to be assistant chief of the Western division, later becoming loop chief. After this he was made chief of the Western division, and a year and a half ago became chief of the Eastern division.

Dr. John C. Kinney.

Of the Postal Telegraph-Cable Company, Chicago.

In the meantime Mr. Kinney studied dentistry, and graduated from the Northwestern University in the dental class of 1899. He now has an office in the Masonic Temple, Chicago, where he is building up an excellent practice, largely, as it may be imagined, from among the telegraph fraternity.

BALTIMORE, MD., WESTERN UNION.

This office was honored recently by a visit from the following officials: President Clowry, Electrical Engineer Barclay, General Superintendent Brooks, and Superintendent Altberger.

On August 16 Wire Chief Louis D. Wilbourn was appointed chief operator of this company in Baltimore. Mr. Wilbourn entered the service of the Western Union as a messenger boy in 1870. Two years later he was an operator. In 1873 he entered the service of the Philadelphia, Wilmington and Baltimore Railroad Company, remaining with that company until 1879, when he reentered the service of the Western Union, and has been in this office working hard ever since. Most of the time from 1879 to 1885 he was assigned to the New York quadruplex. In 1885 he was appointed traffic chief, and in 1888 wire chief, which position he has held continuously until his recent advancement. Mr. Wilbourn is a hard student, and one who has kept abreast of the times in all things electrical. He is very popular with the employees.

Mr. Daniel Lester has resigned to go with a telephone company, and Mr. Reuben Burman has resigned to enter other business.

Mr. W. V. Ardisson has returned to duty after several months' illness.

Recent visitors: Mr. L. C. Hall, chief operator at Norfolk, Va.; Mr. E. A. Maaske, all-night chief, Jacksonville, Fla., and Mr. A. Bowersock, Jr., manager of the Postal, Newport News, Va. Messrs. Bowersock and Maaske are "Baltimore boys."

NEW YORK CITY.

WESTERN UNION—

New oak desks have been placed around the side of the walls where space could be found to accommodate additional wires. These desks are arranged to hold typewriters, the machines being stored underneath the tables.

Mr. A. E. Sink, manager of the operating department, is absent enjoying his annual vacation.

Mr. W. L. Apgar, has been promoted to the loop switch, vice R. Ferguson promoted to be an assistant traffic chief.

Mr. H. W. Sauer, one of the well known operators of this office, who has been absent some months past on account of poor health, visited friends here a few days ago, and his appearance indicated that he is on the mend.

Mr. F. J. Sheridan has been appointed in charge of the number sheets and records in the Eastern division. Mr. Sheridan, besides being a first class operator, is also an excellent wheatstone man and tape puncher.

Mr. E. C. Cockey, superintendent of supplies of this company has at last been provided with a private office. This has been partitioned off from the large apartment on the fourth floor over which he has so long and faithfully presided. He has now one of the cheeriest of private rooms in the big building. There never was a doubt of the need of such a room, and its final acquirement will add greatly to the more convenient dispatch of business as well as to the personal gratification of the superintendent. The fresh tint of the walls which are adorned with many quaint, timely and pungent business mottoes, together with a fine and handsomely framed picture of Prof. Morse; the newly carpeted floor and other accessories of a well appointed business office, all bespeak a degree of comfort and refinement altogether to the taste of the occupant. It was not strange then, when all was finished and pronounced correct, that Mr. Cockey should have had his "opening day;" and it is pleasant to reflect on the number who called to pay their respects on that occasion and who received as a souvenir of their visit a fragrant Havana cigar and a small bottle of red ink. But better still was the genial welcome that awaited all.

Mr. H. D. Rogers, the old timer, now a well-known manufacturer of manifold paper, has attained his sixty-eighth year, and he attributes his long life to having had hay fever for forty years.

R. L. Atkinson has been put in charge of the Jigger Switch, having as assistants C. W. Hanson, "Ham" Fitchett and L. E. C. Moore. Mr. Atkinson is the inventer of the "Atkinson Repeater."

Charles S. Pike is at Seagirt N. J., reporting the New Jersey troops sharpshooting contest.

George W. Patterson has resigned on account of poor health and will go to Salt Lake City, Utah, with his family where he will endeavor to recuperate.

Mr. Charles Edgar Rafford, secretary to Superintendent W. J. Dealy, of the commercial news department, will be married on September 1 to Miss Mabel Forson Irving, daughter of Mr. Gardner Irving, manager of the commercial news department, at his home at Garrison-on-Hudson.

Fred Catlin has returned to the office as an operator, but it is believed his superior talents will soon make him a mark for something better.

Anthony Young, for many years a member of the operating force in this office, and for some time past connected with a downtown broker, died on August 19, aged 43 years.

Mr. Gerrit Smith, of the electrical engineer's office, has returned from a vacation.

The districts presided over by Mr. E. M. Mulford, our superintendent, are being constantly enlarged by the addition of new offices in Pennsylvania, New Jersey and in some of the New England States.

POSTAL.

Manager C. Shirley and family have returned from a two weeks' vacation spent at Lake George, N. Y.

Assistant Manager F. F. Norton and family are spending a vacation in Massachusetts.

Chief W. E. Todd has returned from a two weeks' trip to the West and South.

E. A. Coney, night chief West and South, and Fred. Zeiss, Eastern night chief, as well as Chief J. J. Fredericks, Assistant Chief John Mearns and E. J. Liston, are also back from vacation outings.

R. A. McKune and John G. Pierce of the Philadelphia wires are also absent on vacation.

Mr. John Doren, superintendent of the department of complaints and claims, has returned from a well-earned vacation. Mr. M. J. Doren, of the same department, has also returned to his office after a vacation.

CHICAGO, ILL., WESTERN UNION.

Mr. Edward Cranley, assistant on loops, and Miss Nellie Holland, of the Michigan division, were married on July 21.

Miss Maude Swartout, late of Maumee, Ohio, is now enrolled here.

A. B. Cowan, night assistant chief operator, has been away on a vacation. His place was filled during his absence by Henry Price.

Joseph Cummins and Charles White are now off on their vacations.

A. E. Bates has the sympathy of all in the death of his mother.

Fred. Latourneau is the happy father of a son.

H. H. Arthur, formerly of Chicago, has returned from Pittsburg to accept the position as chief of telegraph of the Santa Fé Road, whose offices are in the Great Northern Building.

E. J. Dolen has just returned after a short sojourn as manager of the Postal Telegraph-Cable Co. at Tiffin, Ohio.

R. W. Chapman, formerly chief bookkeeper, and now filling a similar position in New York, was recently married to Miss Emma Keppe, of Chicago.

Mr. and Mrs. Joseph Stickle are traveling in England for a few weeks.

We are happy to learn of the improvement in the condition of Miss Ida Palmer, and hope to see her with us soon again.

Arthur Galey is quite sick with typhoid fever.

W. H. Dolbear, manager at Des Moines, Iowa, and Charles W. Thayer, of Washington, D. C., an employee in Chicago in the seventies, who is on his way to California, were recent visitors.

CLEVELAND, O., WESTERN UNION.

C. W. Douglass, chief clerk in the superintendent's office, is enjoying a two-months' vacation in Europe. Mr. Douglass is one of the old-time telegraph men, having been employed in this vicinity for the past forty years.

We regret to learn of the resignation of J. H. Bleasdell, chief of the transfer department in this district. Mr. Bleasdell has accepted a more lucrative position outside of the telegraph business. He has been thirty-two years in the service, and has had charge of the money order business for the past twelve years.

Chief Operator Hackett, accompanied by Messrs. Schauf and Dagen, are at Cedar Point, assisting at handling the business of the Legislative Committee.

Traffic Chief E. C. Stockwell has the best wishes of the fraternity for a pleasant time during his two-weeks' vacation at Detroit and Buffalo.

MONTREAL, QUE., GT. NO. WESTERN.

The recent yacht races made things very brisk here, several operators going to Dorval and Nuns-Point, made us short-handed. Frank Cochrane was in charge at Dorval, and Messrs. Dungan and Baker at Nuns-Point.

Miss Clara Wheeler is substituting for Miss Beck during her vacation.

Manager W. B. Powell made a visit to his summer cottage at Old Orchard Beach, Maine.

Hugh H. Lyle has returned to work here again, after being stationed at North Bay, Ont.

Mrs. Louise Morrisey, a former telegrapher here, now a resident of St. Paul, Minn., accompanied by her sister, Miss Holt, paid a short visit to our office.

Miss Gertrude Egli, of this office, replaced Miss Camp at the cordage branch during the vacation of the latter.

Miss Beaudoin, of this office, is recuperating at L'epiphanie.

Superintendent E. Pope, of Quebec; Superintendent W. J. Camp, of the Canadian Pacific Railroad, Montreal, and Thomas Dewit were recent visitors.

Mr. A. E. Sink, manager of the operating department, Western Union, New York; Mr. Poustie, late superintendent of construction for the Montreal Telephone Company, and G. D. Perry, secretary and auditor of this company, were recent visitors to our office.

CINCINNATI, O., POSTAL.

Mr. Fenton T. Bott, assistant to Manager C. E. Sawtelle, has been appointed acting manager at Dayton, O., temporarily relieving Mr. W. C. Weinman, who will return about September 1st. Mr. Frank W. Sprong is filling Mr. Bott's place. Mr. L. N. Burnstein, a branch manager, and wife have returned from a vacation of a month.

Mr. Frank P. Duckett, manager of a branch office, has resigned to enter other business. Mr. H. W. Howe has been appointed to succeed Mr. Duckett.

Night Chief Samuel Sprong is taking a much needed rest and will be absent several weeks, his place being filled by James E. Nevill, who at one time was the permanent occupant of the position, and who resigned some time ago to go with a brokerage firm.

Edward F. Hasson, who has returned from a three-weeks' vacation visiting his parents at Townville, Pa., has been appointed a branch manager, vice Harry Beckmeyer, who has gone with the Western Union here.

Superintendent E. W. Collins and Miss Maud Duckett, of Cleveland, and F. W. Carrol, electrical engineer of Chicago, were recent visitors.

On vacations: Miss Neiderhauser, who has gone to the Lakes; Miss Hannah Rosenblum, to Louisville, and Delivery Chief W. W. Rowland, to Little Miami fishing grounds.

Miss May Brady is handling the Typo Convention at the Burnett House in Miss Rosenblum's absence.

Mr. C. L. Bennett and assistants, of Chicago, are installing a new terminal room and rewiring the board.

Edward Wilkenson, branch relief, has accepted a position with the Western Union in this city.

Low Resistance Relays.

EDITOR TELEGRAPH AGE:

From time to time so many inquiries have been made about the proper resistance of relays for Morse wires, that perhaps the following information may be useful:

The Postal Telegraph-Cable Company, for its Morse wires, has relays of 150 ohms and 75 ohms, and the use of the latter relays in wires worked by a large number of offices is considered very desirable. The adoption of the standard relays of the two resistances above named has nothing to do with their being the best adapted to develop the greatest magnetic pull from a given amount of current.

It is well known that the resistance of a properly constructed electro magnet should be about equal to the resistance of the rest of the circuit to secure a maximum magnetic effect from a given current, but in our telegraph service such a relay is not necessary nor practicable.

It would cause a great deal of confusion to attempt to regulate the resistance of relays to all the various circuits in which they are worked for securing the best results in each case, consequently relays with the uniform resistance of 150 ohms each have been adopted for the entire system, and the currents for the operation of the circuits have to be regulated to properly operate such relays.

It is found, however, on circuits having a great many relays, such as is generally the case upon railroad wires, that the introduction of many electro magnets of 150 ohms resistance each so increases the time constant of the whole circuit as to render its operation sluggish, due to the inductance of the electro magnets as you no doubt have frequently observed.

To overcome this, it has been the practice of certain railroad electricians to place the coils of the relay in multiple, thus reducing the resistance in each relay from 150 ohms to 37 1-2 ohms, and, consequently, if the battery has been retained the same size, the strength of the current will be increased according to the total reduction of resistance of the circuit corresponding with the reduction of resistance in the relays.

At the time this was done, however, the ampere turns, or magnetizing effect of an equal current, was decreased to one-half in each relay, so that notwithstanding the strength of the current had been increased upon the wire, the reduction of ampere turns upon each relay did not permit of an increased magnetic effect, but on the contrary, in most cases, resulted in a large decrease.

The great benefit that was gained, however, and which was appreciated by the telegraph men, was the fact that they could work the relays much faster than previously; in other words, that their sluggish action had largely disappeared, and if the battery had been increased sufficiently to have restored the magnetic effect of the relays to what it was originally, before they were placed in multiple, it would be found that the signals would travel over the circuit much more rapidly than before.

It has been my opinion that it is going to extremes to cut the resistance of the relay from 150 ohms down to 37 1-2 ohms by the multiple process; that it is too great a sacrifice of the effective working value of the relay, and that much better results can be obtained by reducing the relay only to 75 ohms, but at the same time to so reconstruct the relays with the very purest soft iron slotted cores, and giving them the very best proportions as to size and inertia of armature, tongue, etc., with fine clock-bearing shafts, that such relays at 75 ohms have really a much lower time constant than the large number of old-fashioned, poorly made, and badly designed multiple connected relays, which are in use upon many railroad circuits in this country.

With relays of high resistance, the result is that when a key is opened and closed at one end of the wire, it is quite an appreciable time before the relays have become fully demagnetized and magnetized, respectively.

It should be understood that the reduction of resistance in a relay from 150 ohms to 75 ohms, does not contemplate merely unwinding that much wire from a 150-ohm relay, but that the bobbins must be filled as full as possible with a wire of larger gauge than that used upon the 150-ohm relay, to measure 75 ohms from binding post to binding post. The best silk-covered, pure copper magnet wire, of course, being understood.

I think that the line leakage only affects the problem to the extent that leakage may reduce the electro-static capacity of the line wire, and also to cause a decrease in the strength of the signaling current, which decrease of current is going to more greatly interfere with the signals upon the circuit in which the current falls below the strength necessary to properly operate the relays. The line leakage undoubtedly will cripple first the relays having the fewest ampere turns of wire, but the circuit having low resistance relays should contain more current in proportion than the one with 150-ohm relays. Yours very truly,

FRANCIS W. JONES.

New York, August 22.

T. M. B. ASSOCIATION.—Assessments Nos. 397 and 398 have been levied by the Telegraphers' Mutual Benefit Association, to meet the claims arising from the deaths of Edgar C. Stowe, Benton Harbor, Mich.; S. B. Taylor, Springfield, Ill.; Jas. St. J. Greenough, Sterling, Ill.; E. F. Walker, Somerville, Tenn.; Thomas Graney, New Haven, Conn.; Walter J. Wallace, Williamston, S. C.; Charles W. Woodbridge, Santa Barbara, Cal.; James Dunnigan, Brooklyn, N. Y.; Henry Dow, North East, Pa., and Walter Miller, Valatie, N. Y.

Shower of Rock.

Colonel T. P. Cook, general superintendent of the Western Union Telegraph Company, Chicago, Ill., and Colonel J. J. Dickey, superintendent of the same interests at Omaha, Neb., who are touring Colorado in the interest of their company, met with an experience near the summit of Pike's Peak lately that has no doubt given a few shades whiter tint to those gentlemen's locks.

Thirty years ago the Government established a signal office on the crest of the noted peak, and for several years kept a corps of observers stationed in the stone house that is held in place by large iron bolts firmly secured to the huge granite blocks composing the top of the peak. This house has withstood the wintry winds that frequently reach a velocity of one hundred miles, but the Government was not so fortunate with the telegraph line to the summit. Each spring a new line would have to be constructed, the material being transported up the lofty peak on burros. This proved too expensive for Uncle Sam, and ten years ago Pike's Peak station was abandoned, and nothing more was done towards bringing Pike's Peak into communication with the outside world until the cog road was built a few years later, then it was found quite necessary to have telegraphic communication with the summit in order to move trains safely.

A deal was made with the Western Union to construct and maintain the same, which was accomplished by using iron brackets instead of pine poles. These brackets were securely fastened into the granite walls, and for a time seemed to be the right thing in the right place, but they, too, began to go down and out after severe storms.

Hearing that the two well-known telegraphers were in the state, Major Clinton W. Sells, general manager of the Cog road, invited the gentlemen to ascend the peak with him and see if they could devise some means to combat with the elements. The party went to the summit on the afternoon train, then walked back a mile or two to watch what effect an electric storm, then in progress, had upon the wires. Colonel Dickey's keen eyes quickly detected the trouble, which was caused chiefly by the strong electric current that impregnated the air to such an extent that it melted both the lines and iron brackets. It was then decided a cable must be laid the last 3,000 feet, and held down to the ground by granite blocks, in order to insure no further trouble.

The distinguished party were congratulating themselves upon having solved the knotty problem, and were preparing to return to the summit to take their special car, when boulders from the size of a man's hand to those weighing hundreds of pounds began to roll down the precipice in such close proximity to them that their lives depended upon dodging them. Colonel Cook and Major Sells, being small of stature, managed to escape the fusilade by laying low and exposing but little of their anatomies, but with Colonel Dickey, he being a six-footer and well developed, all depended upon his quick eye and ability to dodge. This the colonel acquired when a young man playing football. After the shower of rock, dirt and moss ceased, and the party could straighten up and look around, they beheld half a dozen beautiful specimens of the wild Rocky mountain sheep, who in their mad flight to escape the gaze of man were tearing loose the boulders above them, and all felt greatly relieved when they realized that it was not a repetition of the battle of Santiago, and will return home thinking there are lots worse places than Colorado, even if not so wild.—Old Farmer Lawton, in the Rocky Mountain News.

Old Menlo Park.

The New York Times has the following about the decay of Menlo Park, New Jersey, where Edison did so much of his famous early work: "Edison made Menlo Park famous all over the world, and in the old days there were many visitors to the little place. Even to-day many persons suppose the main laboratory of Edison is still at Menlo Park, and scarcely a day passes that the postmaster does not receive some letter addressed to Edison. Those were boom days for Menlo Park. Besides the Edison plant two other factories were built, and it looked as if the place had a bright future. Then Edison removed his plant, and the prosperity of the village came to a sudden stop. Little by little Menlo Park sank back to the condition of a country village. The railroad steadily decreased the number of trains stopping there. To-day an air of almost melancholy quiet broods over the place. Although the plant has fallen into decay Edison still owns it. His family have large interests in Menlo Park. A short distance east of the former laboratory stands the old Edison homestead, which is the property of Mr. Edison's daughter. In its time it was an imposing structure. Tenants were hard to find, the buildings fell into decay, and finally an Italian family were allowed to live in it rent free."

New Postal Office at Memphis.

The Postal Telegraph-Cable Company at Memphis, Tenn., has removed to its new offices on Madison street, that city, opposite the old quarters which had been occupied for several years. W. H. Locke is the manager. The new home of the Postal is a model one, and presents a very attractive appearance. The receiving department, offices, delivery department and operating section are on the street floor. In the basement are the storage rooms, etc. The front portion of the street floor is reserved for a lobby, and is separated from the office by a handsome natural oak counter. Back of this is the bookkeeping department and Manager Locke's office. The operating tables are arranged in regular order behind these desks. They will accommodate more than 100 operators at a single time. The dynamos, twelve in number, are arranged along the side of the operating section

The Mackay Will.

Mrs. John W. Mackay and her son, Clarence H. Mackay, recently filed the will of John W. Mackay at Virginia City, Nev. The will bears date of July 14, 1898, and was made in New York. Declaration is made in the first paragraph of the will that all the estates of the testator are the common property of his wife and himself. The will bequeathes all of his estates subject at the time of his death to Mr. Mackay's testamentary disposition to his son, Clarence Hungerford Mackay. The wife and son are named as executors without bond, and are given power to sell or dispose of the estate in any way they see fit. The value of the estate is estimated at between $50,000,000 and $75,000,000. The witnesses to the will are Messrs. A. B. Chandler, E. C. Bradley and W. H. Baker.

The Tennessee District Telegraph Company has been organized at Memphis, with a capital of $100,000. The incorporators are E. Howard, J. Compton, W. T. Gentry, James Merrihew and George H. Fearons.

The Postal Telegraph-Cable Company will, on September 1, institute its own messenger service in Brooklyn, N. Y. Thomas F. Rochford, the Postal's manager, in a letter to the American District Telegraph Company, notified that company that the Postal company would deliver its telegrams by its own messengers after the above date.

[Advertising will be accepted to appear in this column at the rate of three cents a word.]

Time and labor saved by using Reservoir Pens—non-blotting, latest patent. You can write 500 words with one dip in ink well. 25 cents a dozen. Write to-day, Russel Pen Co., 6608 Ellis Ave., Chicago, Ill.

Gold and Stock Life Insurance Association.

At the special meeting of the Gold and Stock Life Insurance Association, New York, June 23rd, adjourned to July 21st, the amendments to the by-laws, including graded rates, as follows, for new members,

Between 18 and 30, 50 cents per month,
Between 30 and 35, 60 cents per month,
Between 35 and 40, 75 cents per month,
Between 40 and 45, $1 per month,

and as recommended at the last annual meeting, were adopted to take effect January 1st, 1903.

TELEGRAPH AGE.

A SEMI-MONTHLY JOURNAL DEVOTED TO TELEGRAPHY.

Single Copies, 10 cts. ESTABLISHED 1883. $1.50 per year.

Vol. XIX.—No. 18. NEW YORK, SEPTEMBER 16, 1902. Whole No. 464.

International Association of Municipal Electricians

Seventh Annual Convention

Richmond, Virginia

October 7, 8, 9, 1902

Electricians and Operators are requested to call the attention of the Superintendents of Telegraph of the Fire and Police Departments to this notice.

THE TELEGRAPH AGE

No. 18. NEW YORK, SEPTEMBER 16, 1902. Vol. XIX.

CONTENTS.

SOME POINTS ON ELECTRICITY.

A Few Hints Regarding the Adjustment of Telegraph Apparatus.

BY WILLIS H. JONES.

If operators in general could be made to realize how much more comfort they might take in their daily work did they but acquire even a slight knowledge of the knack of adjusting their instruments properly, they would certainly make a move in that direction, for their own interest if not for that of the company employing them.

There is positively no excuse for the indistinct manner in which signals are so frequently recorded on the really first class instruments employed by telegraph companies to-day. When the signals do not arrive in proper shape there is some good reason for it, but the theory of the fault given by the average operator is usually wide of the mark, and as he "adjusts" in accordance with his ideas of the trouble, he generally makes matters worse by such efforts.

For the purpose of demonstration let us see what may be learned in the way of adjustment and care of an ordinary single line relay and sounder. Now, we will assume that the wire, battery, and instrument coils, are in first class order and then introduce a few conditions for the purpose of noting the different effects produced on the apparatus.

WET WEATHER EFFECTS.

In wet weather the quantity of current which traverses the coils of a relay is greatly increased at or near the battery station over and above that which normally flows in clear weather, while distant station instruments receive less than the usual amount. This condition is caused by the numerous "escapes" or side paths down the poles along the route which draw additional current from the dynamo, all of which must necessarily pass through the relays inserted between them and the battery. Distant relays receive less than they are entitled to because much of the current on the wire "escapes" down the wet poles before reaching them. Now, a strong current in the coils means a strong magnetic pull on the relay armature, while a weak current, of course, causes a correspondingly weak attraction.

It follows from this that the wet weather method of adjusting a distant relay is directly opposite to that followed for the home relay at the battery end of the circuit. The operators at distant points must get the magnets closer and closer to the armature as the downfall of rain increases, while the home operator is compelled to draw his relay coils away from it. This seems like a very simple operation to perform, but the manner in which most operators go about it explains why they fail to secure the best results.

Now, the first principle of adjustment lies in maintaining at all times, whether the current is weak or strong, a practically constant, or normal tension of the retractile spring attached to the relay armature. The explanation is that a relay spring responds best to the magnetic attraction of the armature when the tension is such that the "curling" is not stretched to any great extent out of its original close fitting construction when new.

The adjustment should invariably be done by moving the magnet backward or forward by means of the thumb-screw. The tension of the retractile spring need not be altered perceptibly except to give the operation a finishing touch. The habit of stretching the relay spring to meet a strong magnetic pull not only causes the former to work less efficiently at the time, but soon injures it permanently by destroying its sensitiveness.

FEELING FOR A DISTANT STATION.

It frequently happens in very wet weather that a distant office cannot break the operator at or near the battery station on account of the diffi-

culty the latter has in getting a fine adjustment. When informed via some other circuit that such is the case the best method to pursue is as follows: Make a few dots to attract his attention (he will hear you; the distant office has the advantage in this respect) and then tell him to "dot." Now pull the magnets back from the relay armature until the circuit stands apparently just open. Next, turn down the retractile spring very slowly until you hear the signals. If you miss them you may sometimes catch them by placing your finger on the lever of the relay and giving it a gentle pressure back and forth. If the operator is dotting you will feel the impulses and thus be able to readjust the instrument.

The latter method is an excellent one to pursue on a way wire when in doubt as to whether any one is using the circuit, for, by this precaution one operator need never break in while another is sending. However, as it is only in very wet weather that an operator is bothered to any great extent by the relay, the real source of daily discomfiture usually lies in an improper adjustment of the sounder.

ADJUSTMENT OF SOUNDERS.

When a sounder does not give out loud enough a tone to suit an operator, he almost invariably proceeds to give the lever a wider play, as if that was the only remedy. As a matter of fact that process in itself seldom brings about the desired results unless the lever at the time happens to be screwed down abnormally close. The important thing to know is that if you give the lever a play which will permit the armature to move away from the magnet cores beyond a normal distance, the magnet has a hard time getting control of it again. The explanation is that a magnet loses its power to attract the armature in a degree directly proportional to the square of the distance separating them; or, in other words, to the square of the air-gap. For example: If two magnets similarly constructed in all respects be fed by an equal strength of current, and the air-gap between the cores and the armature of one made the thickness of a card board, while two cards could occupy the gap in the second magnet, the former would be practically four times as strong as the latter. It is plain, therefore, that to give the sounder lever too great a play will so weaken the pull on the armature when in its "open" position that when the local circuit is again closed the lever moves so slowly at first that it hardly has time to cross over the space before the current is again broken. The result is that a signal is partially broken up before completion.

The lesson to be learned from this is that the play given to an armature lever must never be so great that the magnet cannot bring it back promptly within the time alloted to complete a signal. This, in turn, suggests that the amount of play given should be decreased in proportion to the speed with which the signals are increased. The proper method to increase the volume of sound is as follows:

ADJUSTING FOR MAXIMUM STRENGTH.

Place a sheet of paper between the armature and the poles of the sounder magnet and then lower the former till there is just space enough to move the paper back and forth without catching. This permits the magnet to exert its maximum strength on the lever and the position should seldom be altered. Whatever changes that are necessary during the process of adjusting should be effected by means of the spring, the upper thumbscrew, and those which regulate the trunion. The adjustment of the trunion screws is a matter too generally overlooked. It is there that the pitch, or quality of the sound is regulated. The pivot must not bind too tightly nor yet be too loose.

(To be continued.)

Recent Telegraph Patents.

Charles M. Davis, of Chicago, has been granted a patent, No. 707,557, for a telegraphic apparatus.

J. E. Fomson, Mitchell, Ill., has been granted a patent No. 707,312, for an automatic telegraph key closer.

Albert C. Crehore, Tarrytown, N. Y., has been granted patents Nos. 707,829, 707,830, 707,959, for systems of telegraphy.

A patent, No. 707,612, has been taken out in this country for a page-printing telegraph, by Gieuseppe Musso S. Angelo, Lombardy, Italy.

Resignations and Appointments.

Mr. J. V. O'Brien, an old employe, who has been assistant manager of the Western Union telegraph office at San Francisco, has been appointed manager of that office, vice T. W. Reynolds, deceased.

Mr. Jesse Hargrave, chief operator of the Postal Telegraph-Cable Company, New Orleans, La., has been promoted to the position of electrical engineer of the southern division, with headquarters at Atlanta, Ga.

Mr. Wm. Finn, of the electrical engineer's office of the Western Union Telegraph Company, has been appointed chief operator of the Central cable office at 46 Broad street, New York, vice D. Lynch, resigned.

Mr. Charles W. Schofield, manager of the Western Union Telegraph Company, Paterson, N. J., has resigned, and Mr. Archibald C. N. Thompson, of Middletown, N. Y., has been appointed to the vacancy thus created.

Mr. Curtis A. Comstock, for the past ten years connected with the Postal Telegraph-Cable Company at Milwaukee, Wis., where for six years he was chief operator, has been appointed manager of that company's office at El Paso, Tex.

Mr. H. B. Cerveny, manager of the Western Union telegraph office at the stock yards, Kansas City, Mo., took charge September 1 of the city offices of the same company at Beaumont, Tex.

Mr. Cerveny has been at the stock yards office for the last three years, and his transfer is a promotion.

Mr. G. R. Benjamen, chief operator in the Buckingham department, Western Union Telegraph Company, New York, has been transferred to the electrical engineer's office, to fill the place of Mr. Wm. Finn, who has gone to the cable service.

Mr. David Lynch, chief operator of the Atlantic cables of the Western Union Telegraph Company, in the Central cable office, New York, resigned September 1 to enter the Government telegraph service, with headquarters at Manila, Philippine Islands. Mr. Lynch will have entire charge of the telegraph service in our Eastern possessions. He is one of the ablest cable experts in the United States, a very competent official, and his New York friends extend hearty congratulations.

Death of Edward Payson Whitford.

Edward Payson Whitford, aged 57 years, one of the best known telegraph operators in the United States, died of heart disease at Chicago, Ill., on August 26. Mr. Whitford was a member of the United States Military Telegraph Corps during the Civil War, and was on General Sher-

THE LATE EDWARD PAYSON WHITFORD.

man's telegraph staff during his famous march through Georgia. In 1870 Mr. Whitford went to Chicago for the Western Union Telegraph Company, in which city he continued to reside up to the time of his death. Since 1891 he had been identified with the Postal Telegraph-Cable Company. Mr. Whitford was a first-class telegraph man, and during his long residence in Chicago he occupied many important positions, both for the Western Union and Postal Telegraph-Cable companies. At the time of his death Mr. Whitford was night chief operator of the Chicago American office. He had recently been assigned to extra duty reporting the Western Women's golf championship tournament at Lake Forest, Ill., and it was while performing this service that he succumbed to the fatal disease.

Obituary Notes.

T. O. Cord, aged 64 years, died at Memphis, Tenn., August 24, of paralysis.

O. H. McGarvin, a Western Union operator at Los Angeles, Cal., died in that city August 27, aged 37 years.

Don C. Martin, aged 32 years, a well-known Boston operator, and for several years past employed on the telegraph staff of the "Herald," of that city, died of consumption on August 30.

T. W. Reynolds, manager of the Western Union Telegraph Company, San Francisco, whose death was announced in the last issue, had been an employe of the company at that point for the past twenty-seven years. He shot himself while on duty in the office; his accounts were in spendid shape. He was a sufferer from nervous affections. Mr. Reynolds had worried a great deal of late regarding his mental condition and was fearful that he would become insane, his mother and sister having died from insanity.

General Mention.

The Western Union Telegraph Company will renovate its office at Portland, Me.

Mr. William H. French, a well-known newspaper man, of New Haven, has been appointed night editor of the Boston office of The Associated Press.

Telegraph operators in large numbers from Australia and New Zealand are going to South Africa to enter the telegraph service there, attracted by what is said to be the high rate of pay.

Telegraph Engineer Feyerabend, of Germany, accompanying Herr Siegfried Wernecke, an Imperial Post Councillor, is in this country in official capacity to inspect the American telegraph systems.

Mr. L. S. Wild, Western Union manager at Butte, Mont., says: "I recognize TELEGRAPH AGE as the embodiment of something interesting and edifying to all telegraphers, and the masses of the profession should subscribe for the paper."

Mr. J. B. Reeves, writing from the Western Union Telegraph office, of which he is manager, at Griffin, Ga., respecting "Pocket Edition of Diagrams," etc., states: "I am highly pleased with it

and for an experiment have already made a set of repeaters from some ideas I found in the book."

Mr. Henry L. Shippy, treasurer of John H. Roebling's Sons Company, New York, is sending out an exceedingly neat pocket key chainlette bearing a tag inscribed with his company's compliments. The chain being flexible, attached keys are bound to lie flat in the pocket and not bunch. The little gift is sent with an expression of cordial greeting on the part of the genial treasurer, coupled with wishes for the safety of everything the recipient keeps under lock and key.

Mr. Thomas F. Rochford, manager of the Postal Telegraph-Cable Company in the Borough of Brooklyn, city of New York, enjoys the distinction of being not only an efficient manager, but a man of ample fortune and an all-around good fellow. He is an extensive holder of real estate in Brooklyn, owning the bulding on Fulton street into which the office of his company has lately removed. Formerly he was the head usher of the old Brooklyn Theatre, and later occupied the same important post at the theatre conducted by the late Col. Sinn, positions that gained for him an extended acquaintance. His interest in the theatre has never abated, and his latest proposition is to erect a fine playhouse in the City of Churches that shall surpass anything in that borough, and where the old-time social prestige of the ushers shall be restored.

Personal Mention.

Mr. Melville E. Stone, general manager of The Associated Press, returned recently from a two months' trip to Europe.

Mr. Clarence H. Mackay, vice-president of the Commercial Cable Company, New York, has returned from England, whither he was recently called owing to the death of his father.

Mr. A. R. Brewer, secretary of the Western Union Telegraph Company, New York, and mayor of the beautiful suburb of Glen Ridge, N. J., has been elected a director in the Bloomfield, (N. J.) Trust Company.

Mr. E. C. Bradley, the vice-president of the Postal Telegraph-Cable Company, New York, who assisted in negotiating the deal which secured for his company the Pennsylvania Railroad telegraph lines, was at one time a superintendent of telegraph on that railroad.

Messrs. B. Brooks, general superintendent; C. H. Bristol, general superintendent of construction; J. C. Barclay, electrical engineer of New York, and S. R. Crowder, electrician of Richmond, Va., are making a tour of inspection in the Southern districts of the company.

Wireless Telegraphy.

The Italian government is considering the establishment of a wireless system for the transmission of telegraph messages across that country in place of the existing wire system.

Communication between Washington and Annapolis has been established by wireless telegraphy under the auspices of the Navy Department. The distance covered is about 35 miles.

The vessels of the Cunard, American, Atlantic Transport and North German Lloyd lines have been equipped with the Marconi apparatus, and there is an expert telegrapher on each steamer belonging to these lines.

The Marconi Wireless Telegraph Company intends to establish a floating wireless telegraph station one hundred miles from land in the Atlantic ocean off the English coast, to facilitate the reception of news from vessels approaching the shore.

M. Rochefort, inventor of one of the systems of wireless telegraphy now being tested by the United States Navy Department, recently arrived at Washington from France, bringing some additional apparatus which is to be submitted for testing purposes.

Signor Marconi, from aboard the Italian cruiser Carlo Alberto, at Ferrol, Spain, which has been placed at his disposal for experimental purposes, says he was in constant communication with Berlin, as well as with British war ships, from that station and from Cornwall. He declares that he has solved the problem of maintaining the integrity of individual simultaneous messages.

It is said that the Italian Minister of Posts and Telegraphs, Signor Galimberti, is negotiating for the use of wireless telegraphy, when this system becomes practicable, between Italy and England. The new station established by William Marconi on Mount Gargano is to be used in the proposed service. Mount Gargano is about six thousand feet high and is situated on the eastern side of Italy.

Rear-Admiral Higginson, commander of the defending squadron in the recent naval maneuvers, in his report to the Navy Department, had this to say of wireless telegraphy: "I take this occasion, however, to urge upon the department the establishment upon all vessels of the navy a wireless-telegraph outfit. In my opinion, it is of incalculable value, and no expense should be spared to hasten its adoption."

The Postal Telegraph-Cable Company announces that it has made arrangements with the Marconi Wireless Telegraph Company whereby messages may be accepted for transmission and sent prepaid to incoming and outgoing vessels fitted with the Marconi system of wireless telegraphy, via Sagaponack, Long Island, at the rate of two dollars per message of ten words, address and signature not counted, and twelve cents for each word over ten, in addition to the regular commercial tolls to Sagaponack, L. I.

Hand vs. Machine Telegraphy.

BY PATRICK B. DELANY.

[Mr. Delany, in a recent letter to the Electrical World and Engineer, has the following to say, in closing the recent controversy on the question of automatic telegraphy, a subject originally brought about by Dr. Pupin's famous remark: "That a man who offers them (the Western Union Telegraph Company) an improvement is treated like a book agent."—Editor.]

"Permit me to make a few comments on the communication of Mr. F. W. Jones regarding the telegraph, printed in a recent issue of your publication:

"Mr. Jones starts out by stating that he has 'no client to defend,' meaning, of course, that the criticisms passed upon the Western Union by Prof. Pupin do not apply to his company. Concerning this view, readers of Prof. Pupin's statement may judge for themselves. Having decided this question to his own satisfaction, however, Mr. Jones puts himself in the position of prosecuting attorney against all methods outside of his company's patronage, and for proof that automatic telegraphy is not as good as the Morse, reference is directed, by chapter and verse, to a gospel paper read by him five years ago before the American Institute of Electrical Engineers. It is seldom in these days of progress that one can so complacently refer back five years to a final dictum which all further discussion must only illume as immutable.

"Somebody has said that 'men's judgments are a parcel of their fortunes'; hence, I presume, the importance attached to them by their possessors. It is well known to all telegraphers that the most important advances thus far made in automatic telegraphy have been brought about within the past five years.

"The sum of Mr. Jones' conclusions, concisely stated, may be said to be: That outside of the hours 10 to 3 the telegraph companies have an excess of facilities, and outside of 8 to 5 have wires 'to burn.'

"That the public have the privilege of half-rates, which they use only very sparingly, at which Mr. Jones does not wonder, owing to our excellent mail service.

"That 'no automatic system has been invented that obviates the expensive and slow preparation of telegrams by special codification and manual manipulation at the sending end, and the special translation and manual transcription at the receiving end,' and that not until somebody invents and the companies reject a system wherewith 'customers' messages could be thrown into a hopper in New York and come out of a machine in Chicago at the rate of 500 or 1,000 words a minute, correctly printed on blanks and ready for delivery,' can the companies be justly charged with old fogyism.

"That, indeed, the telegraph owners would be foolish not to adopt such a system, and the nearest approach to this ideal arrangement, in Mr. Jones' opinion, is the work performed over a quadruplex wire of his company, between New York and Boston, which for 21 days in April, nine hours working, showed a daily average of 41.26 messages per circuit per hour, or 80 words per minute all told.

"Taking these propositions in the order of their arrangement, we have first the admission that the telegraphs are primarily conducted for, and are almost wholly dependent upon the speculative market between the hours 10 and 3, the remaining hours, the four hours 8 to 10 and 3 to 5, evidently being occupied in clearing up the ordinary business of the day which is not of such great urgency, or which has been pushed aside for the broker business, and that the remaining 15 hours of the 24 are unprofitable, principally owing to the competition of the post office.

"It is well known, however, that in practice this schedule of operation is seldom realized. No company has more wires than they can fill between 10 and 3. Interruptions start the work of segregation of facilities about in this order: Stock and other exchange wires, leased wires, pool-room wires, cable service, newspaper specials, and, lastly, the business of the unpreferred general public. This latter traffic pushes the full-rate business into the half-rate hours, or into competition with the 'sufficient despatch' of the mails.

"I have always maintained that the Morse system was the best for exchange business, but the conduct of the telegraph shows that the companies have erred in going upon the principle that this was the only business worthy of quick service, for which is charged a heavy rate, and that all other business, although paying the same tolls, must give way and take its chances.

"Taking the two facts that when the wires are all in order they are filled between 10 and 3, and that it is seldom they are all in order, would it not be better to increase the carrying facilities of the remaining wires in proportion to the occurring interruptions, so that no serious congestion could ever exist, rather than place all reliance upon a system circumscribed and inelastic in capacity?

"Mr. Jones' remedy would be to construct lines that would never break down, using two and sometimes three poles where one now sustains the burden. That substantiality should be the first aim all must agree, for not even the 'hopper' system could be relied upon further than the stability of the lines; but I submit that the course of the telegraph management has been altogether wrong for the past thirty years, and Mr. Jones' advocacy of its continuance and extension at this time is a discouraging sign for the future.

"I think it but fair to assume that the policy of hand working and high rates was in a large measure forced upon the telegraph management by the construction of opposition lines, which the main organization felt compelled to buy up from time to time in order to continue a monop-

oly. In this way stock dividends were vehicled so that $1,000 of telegraph stock in 1858 represented $150,000 of stock and cash dividends in 1890. If the telegraph had been under Government control no such wild-cat construction would have taken place, but instead, substantial lines, operated to their highest capacity, and at low rates, would have developed a telegraph business covering all branches of commercial and social correspondence, and in volume probably twenty times greater than the present restricted traffic.

"Where, under present restrictive conditions, the half-rate in no case falls below 20 cents for 10 words, or about 50 per cent. more than what the full rate should be, is it surprising that the public finds small inducement for filing half-rate messages one day for delivery on the day following? People, doubtless, take Mr. Jones' view that the 'sufficient despatch and secrecy' of the mails at 2 cents is preferable.

"With an automatic system these messages could all be delivered on the same day, and as it costs no more to deliver on one day than another, the public would have the benefit. The present rule forbids the delivery of a half-rate message on the same day, so as to force full payment or submission to the 12 or 15 hours' unnecessary delay. So long as the companies impose this penalty they should at least refund half on all full-rate messages left undelivered until the following morning; for could the sender have foreseen that his telegram would not be delivered on the same day he would naturally have chosen the half-rate plan, or availed of the 'sufficient despatch and secrecy' of the post office.

"Coming now to the most serious part of Mr. Jones' argument against automatic telegraphy, 'slow preparation by special codification and manual manipulation at the sending end, and the special translation and manual transcription at the receiving end, with machinery more complicated than the Morse,' here is evidently a plaint over sad experience; but it is not right to hold true automatic telegraphy responsible for a 'hopper' disappointment. It is another case of basing a specious argument on spurious premises, to which I took exception in a previous letter.

"Briefly stated, automatic telegraphy of to-day is operated as follows: Messages are perforated in Morse code on a simple machine controlled by a Morse key and Morse operator, the work being precisely the same as sending a message over a wire by Morse, with the exception that being a purely local operation, it is never interrupted by 'breaking' or line trouble, therefore yielding a higher average speed.

"Message tapes are automatically reeled up as they come from the perforator, these reels are handed to the tender of the transmitting machine, where the tapes are run through at any rate desired up to the carrying capacity of the line, which between longest and shortest distances in this country would vary from 100 to 3,000 words per minute. At the receiving station the messages are recorded in plain Morse characters on a tape and automatically reeled up. This reel is handed to a typewritist for transcription, and is printed at an average speed of 20 to 25 words per minute.

"The work of perforating is exactly the same as now performed in sending by Morse, and the only difference at the receiving end is in transcription, which is done by sight instead of by sound. The only additional labor lies in the transmission and reception of the message, requiring a machine tender at each end of a line carrying at the lowest estimate, including starting and stopping, as many messages as ten quadruplexed wires, or 40 Morse circuits manned by 80 of the most expert sound reading operators. The cost of the automatic machine tenders would be much less than the expert adjusters required for ten quadruplex sets.

"Now, as to the additional delay ascribable to the automatic process, and assuming that in order to keep the wire speed up to the proper standard it would be necessary to handle messages in 'takes' of 5, or units of 150 words. Each unit could be easily perforated and placed on the wire in 7 minutes, and could be transcribed by typewriter in 7 minutes more, or say an average of 15 or 16 minutes from the receiving window to the delivery clerk. Owing to the great carrying capacity of the system this average time can be maintained under all conditions of weather. Does the present exclusive Morse methods of handling telegrams do as well? It is well known that the average time at present is over 30 minutes. Exchange business could, of course, be carried on by the Morse, and in time of interruption to lines be greatly expedited by the automatic.

"In proudly citing what he considers a great performance of the quadruplex, 20 words per minute for each circuit over the New York-Boston line, Mr. Jones omitted to mention that this quadruplex is worked on the 'piece' plan, which recognizes that 250 messages (14 words per minute) is a full days' work, all messages over that number being paid for at the rate of one cent each. In order to make time the sending operator is allowed to abbreviate or code his messages, the receiver being relied upon to construe the pidgin English correctly. This advance of six words per minute over the standard 14, using a copper wire 250 miles in length, or a total of 80 abbreviated words, marks a long hiatus to the 'hopper' system of 500 to 1,000 words a minute already printed, New York to Chicago, the refusal of which achievement would, in Mr. Jones' opinion, alone justify the charge of unprogressiveness against the telegraph companies.

"Eighty abbreviated words per minute, constantly increasing wires, with two or three poles for one, presents a rather gloomy forecast for the future of telegraphy from the viewpoint of the electrician of a great company.

"A more encouraging outlook is afforded in the contemplation of 30 perforating operators grouped around a single transmitter preparing

messages, and 30 transcribing operators grouped around a receiver, all kept busy by a single wire, each pair representing a phantom circuit superior to the average quadruplex circuit. The well known fact that a system capable of this performance has been in operation to the extent of traffic requirements not a hundred miles from New York for the past eight months, confronts the critics of automatic telegraphy with a condition, not a theory—a daily practically demonstration and one which during the sleet troubles last winter kept traffic clear over a wire subjected to interruptions of a frequency precluding the 'balancing' of a quad once throughout an entire day."

W. H. Preece on Wireless Telegraphy.

In Page's Magazine for August there appears an interesting signed article on "Wireless Telegraphy," by Sir W. H. Preece, K. C. B., F. R. S., who was until recently engineer-in-chief and electrician to the British Post Office. The writer says:

"In 1896 Mr. Marconi was introduced to me. He had applied Hertzian electric waves and Branly's coherer, with which Sir Oliver Lodge had made us so thoroughly acquainted, to the purpose of wireless telegraphy. The resources of the Post Office were placed at his disposal for experiment and trial.

"Unfortunately, Mr. Marconi was captured by a financial syndicate, and his relations with the Post Office were severed. Nearly six years have elapsed, and yet the system has not reached the practical stage. It is still experimental. Mr. Marconi's ambition is evidently to conquer great distances. From Europe to America and from America to South Africa, have attractions for him greater than a good, sound, practical system between Guernsey and Sark. It is not wanted across great oceans; it is wanted across narrow, rocky channels and between tideswept island homes. It is a remarkable thing to say that at the present there is not a single practical commercial circuit established on this system in the world! It was tried in Honolulu for commercial purposes, but was abandoned owing to its defects.

"Whatever wireless telegraphy may be in the future, it is not at present a practical, reliable and commercial system. The scientific facts of wireless telegraphy are quite triumphant, but up to the present its practical results are poor in the extreme. The sensational and really wonderful results across the Atlantic have had an absurd influence on cable stocks in the money market. Shareholders, especially of the feminine gender, have been panic stricken and have transferred their depressed property to wiser pockets. The value of the submarine cable system has not been shaken one iota. The Atlantic ocean is spanned by fourteen cables always available and rarely disturbed. Each works at a speed far exceeding anything obtainable on an etheric circuit. Fifteen ordinary words a minute is a high rate of working on such a circuit for short distances, say up to fifty miles; twelve words is about the rate in Germany, but I do not anticipate in practice a normal rate of more than ten words a minute.

"Cable messages average nine words each, of which three are service words and six are paid for. They are code words, which are very suitable for wireless telegraphy just now. With repetitions, corrections and fatigue, it is impossible to calculate upon getting more words through a cable than fifty per cent. of the maximum carrying capacity of that cable. What percentage will an etheric circuit carry?

"The speed of working is limited by the number of sparks that can be passed per second, and the greater the quantity of energy in the spark the fewer that can be passed in the same time. Moreover, sparks are very capricious things and require much humoring. The signals received by Mr. Marconi are not encouraging for accuracy."

Pupin Awarded Priority in Multiplex Telegraphy.

An interference case involving claims to priority of invention of an improved system of multiplex telegraphy has been finally decided in the Court of Appeals of the District of Columbia, says the Western Electrician. The invention lies in the arrangement of the receiving stations in the application of electrical resonance in the art of selective or multiplex signaling, and is embodied in the issue defined in two counts as follows:

1. The method of distributing the electrical energy of periodic currents, which consists in developing a number of effective currents of different frequencies, independently, upon a single line, and conveying the several energies of these currents, each selectively, to a separate electrical translating device.

2. A system of distribution of electrical energy comprising a main line, means for independently developing effective electromotive forces of different frequencies thereon, branch lines connected with the main line, each having its self-induction and capacity so related as to be permeable to alternating currents of a given frequency, and an electrical receiving device in each branch line.

There were three independent claimants in the case when the interference was declared—Pupin, Stone and Hutin & Leblanc. The order of their applications, as filed in the Patent Office, is the following: Pupin, February 23d; Stone, April 4, and Hutin & Leblanc, May 9, 1894.

Our Book Table.

"Instruction for Foremen and Division Linemen of the Western Union Telegraph Company," is the title of a 19-page pamphlet just issued by that company, and compiled by Mr. C. H. Bristol, the general superintendent of construction. It is intended for distribution among the linemen of the company, and in its comprehensive direction in reference to the construction, reconstruction and repair of lines, will be found a most useful handbook. It embodies also a number of illustrations well calculated to aid intelligent linemen in their work. Its publication is opportune, and as it will easily fit an inside coat pocket, its constant companionship is assured.

An example of beautiful bookmaking is that entitled "Love-Story Masterpieces," from the press of William S. Lord, Evanston, Ill. It embraces sketches taken from some of the choicest writings of George Meredith, Donald G. Mitchell, Robert Louis Stevenson and Oliver Wendell Holmes, the selection being made by Ralph A. Lyon, chief operator of The Associated Press, Baltimore, Md., a well-known contributor to "Current Literature," "Short Stories," and other periodicals. The volume, which contains 180 wide margined, uncut and rough-edged pages, shows superior press-work, the clear type, brown ink and superlative paper used, combining to produce an artistic whole which will commend it to every book lover and make it a welcome addition to every library table.

A new edition of "Sketches Old and New," by Walter P. Phillips, has been issued by J. H. Bunnell & Co., of New York. The volume has frequently been referred to in these columns, and several of its sketches republished therein. They relate to incidents of interest to telegraphers and are told with all the charm and frequent pathos of which the writer is so specially gifted. The author of these sketches, whose widely popular and standard work, Phillips' Code, has given him a national reputation, is himself an old telegrapher whose sympathies continually revert to the members of the profession, to the literature of which he has been a frequent and always welcome contributor. The book is bound in cloth, contains 200 pages and has numerous illustrations. It will be supplied on receipt of one dollar, postpage prepaid, by J. B. Taltavall, TELEGRAPH AGE, 253 Broadway.

SOME VALUABLE WORKS ON WIRELESS TELEGRAPHY.

"A History of Wireless Telegraphy," third edition, revised, by J. J. Fahie, the eminent English author, constitutes one of the most popular accounts yet published of the origin and progress of wireless telegraphy, showing fully what has been attempted and what accomplished in that fascinating field of operations and research up to the present time. All systems are reviewed, as well as many guesses considered. Marconi's method is treated with great thoroughness and this inventor's particular development of the science is brought down to the present time. For convenience of the general reader the contents of the volume are divided under three distinctive heads, or periods, so called, namely: First period—The Possible. Second period—The Practicable. Third period—The Practical. The revised work will prove a welcome addition to the literature of the matter discussed. Under the respective headings the classification observed will be of especial aid in tracing with logical sequence the development of wireless telegraphy. The price of the book is $2.50, express charges prepaid to any address in the world. Address J. B. Taltavall, TELEGRAPH AGE, 253 Broadway, New York.

"Wireless Telegraphy" is the title of a new and popular exposition on this interesting subject by G. W. Tunzelmann, B. Sc., the author of "Electricity in Modern Life." The volume has 104 pages, is fully illustrated, and includes chapters on ether and ether waves, the discovery and development of the coherer, the systems of Marconi, Popoff and others. It is a capital book, and affords just the line of information now in such demand regarding the topic treated. It will be sent on receipt of price, 75 cents, to any point in the United States or Canada, express charges prepaid. Address J. B. Taltavall, Telegraph Age, 253 Broadway, New York.

A Feat in Telegraphy.

A discussion took place recently among the telegraphers in the city of Sin, Sweat, and Sorrow—Rockhampton, Queensland—over the recent American tests in speed of manipulation. It was contended that there were not five men in Queensland who could send forty words a minute of five letters to the word. Indeed, one of the speakers asserted there was not one. A wager was staked, with the result that Mr. H. A. Oxenham, of the Rockhampton staff, easily succeeded in transmitting the required number. The time was two minutes, taken by Mr. D. Murphy, who states the signals were perfect. The following is the matter transmitted: "Several small deficiencies in the details of connections when delivery was taken of the dredges appear to have been the cause of repeated and vexatious delays, which are still continuing, amongst which may be mentioned bottom screwed pins of gimbal rings and stopper chains. In the case of the Samson, we noticed, on inspection, that the chains were badly adjusted for length, throwing the whole strain of deflection in cases on the gimbal ring before the chain came into play, and we recommend the . . . ."—From "The Transmitter," Brisbane, Queensland, June 17, 1902.

Mr. F. F. Basye, of Baltimore, Md., writes: "TELEGRAPH AGE in printing 'Some Points on Electricity' is conducting a correspondence school at a tuition of $1.50 per year."

The Telegraph Age.

Entered as second-class matter at the New York, N. Y., Post Office.

Published on the 1st and 16th of every month.

TERMS OF SUBSCRIPTION:

One Copy, One Year, - - - -	$1.50
One Copy, Six Months, - - - - -	.75
Foreign Countries, - - - - -	2.00

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253 BROADWAY, NEW YORK.
E. H. BOWEN, MANAGER ADVERTISING DEPARTMENT

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NEW YORK, September 16, 1902.

NOTE.—We desire to state that back numbers of this paper, those issued more than six months prior to any current date, will be charged for at the rate of twenty-five cents apiece when they can be furnished. This price is fixed because of the necessarily limited stock we carry, and of the difficulty we commonly have in filling an order. Oftentimes the request is for papers of a more or less remote date, with the expectancy of being supplied at but ten cents a copy, whereas in order to obtain the desired issue we are ourselves frequently obliged to pay the larger sum, or even more. The growing value of complete files of TELEGRAPH AGE should cause our readers to carefully preserve their issues.

The district messenger boy of Chicago is a decidedly uncertain quantity. His proclivity to seek what he asserts to be his "rights" by means of striking has become altogether so monotonous in its frequency, that the Illinois District Telegraph Company of the Windy City, is seeking an antidote for existing evils in the employment of girls as delivery agents. Exactly what success is attending this experiment is not stated, but the vicissitudes of the service may be inferred from the fact that in addition to the girls, grown men have been called in to assist, even officers of the company, so it is said, taking a hand in making the deliveries.

Telegraphic Consolidation Once More.

The oft-repeated story of a telegraphic and telephone merger is once again abroad in the land. The proposition is a big one and the figures are large, for the declaration involves a scheme of consolidation whereby the Western Union Telegraph Company, the Postal Telegraph-Cable Company and the American Bell Telephone Company shall become united in a single so-called trust to be capitalized at the vast sum of $500,000,000. The story has been persistently circulated, and the recent activity, and rise in Western Union stock is pointed out as evidence confirmatory of the truth of the statement. It is also said that the recent death of Mr. J. W. Mackay removes the chief obstacle in the way of this consummation, heretofore deemed insurmountable. While it may be true, possibly, that overtures have been made with such a project of combination in view, it is nevertheless a fact that the telegraph officials emphatically deny the truth of the sensational report. It is almost needless to remark that there is no occasion for any anxiety to be felt regarding the matter. Our telegraph friends should not take too much stock in idle rumors, especially to the detriment of their nerve force, for the earmarks of former canards are but too plainly visible in this instance.

The Importance of Clean Offices.

The personal welfare and healthful surroundings of operators in all telegraph offices ought to be the first consideration of those who are charged with authority. The higher officials are on record as being outspoken in their determination to provide proper working quarters for the men. This is right. Yet, notwithstanding this fact, it is sometimes the case that offices are permitted to lapse into discreditable sanitary conditions, occasionally approaching to actual filthiness. As such they become a reproach to the company whose property they are, emphatically a state that should not be tolerated by executive heads. This trouble, wherever existing, is due primarily to either the carelessness or the incompetency of local managers. It should not be forgotten that the efficiency of the service is best promoted by a ready, willing, healthy and satisfied force. The earning capacity of a telegraph or any other great corporation is largely measured by the condition, physical, mental and moral, of the men employed. Employes are entitled to surroundings that contribute to these attributes of character, to self-respecting manhood. Under adverse environments of the nature indicated, expected results can never be attained, even though the expensive method of employing traffic chiefs to force labor to its utmost capacity be applied.

New Edition of a Popular Book.

The phenomenal sale of "Pocket Edition of Diagrams and Complete Information for Telegraph Engineers and Students" has already made necessary the issuance of a second edition. This is now ready, and is a handsome volume of convenient reference size, embracing 260 pages and 126 splendid illustrations, many of the latter being of full page size. Never before has the subject of the telegraph in its every aspect been treated so thoroughly and interestingly as in this superior work by Willis H. Jones, a telegraph

engineer still in the active business of his profession. It is because it is so completely a guide to every telegrapher in every grade and position in the service that it has attained its sudden and wide popularity. Its genuine worth has been amply attested and endorsed by experts everywhere. Agents for TELEGRAPH AGE unite in saying that the book has been the best seller they have ever handled. It advertises itself, for buyers extol its merits to others. Thanks largely to our friends, it now looks as if every telegraph office in the land would soon have a full complement of this useful volume. As heretofore, all orders will be filled promptly on the day of receipt.

Advancement Gained Only by Hard Work.

Editor TELEGRAPH AGE:

I have read much about the alleged hard lot of operators and managers, individuals who, for one reason or the other, believe they are being overlooked and that the reward of promotion which they think to be their just due is not being meted out to them, or at least not fast enough. My experience is that promotions come slowly to most men and usually only after long years of hard service. Of course, there are exceptions, as there is in everything, but if these exceptional cases are looked into carefully you will find, as a rule, that men, even those who are placed in positions most favorable to attract attention, after all only gain advancement by hard work, no matter what the favoring circumstances may be.

I have in mind a telegraph superintendent who from outward appearances seemed to fairly slide along the track of prosperity and promotion, but I know from personal observation that he worked diligently early and late to build up and master all points of the business of which he was placed in charge, and I honestly believe he has earned all that has come to him. Yet even in his case I hear the inane cry raised of "favoritism."

I think a guiding rule for operators or managers should be to up to date, to work hard regardless of hours (this applies especially to managers), to do their level best, and promotion will be sure to come if they live long enough; and if not, there will be the satisfaction of knowing that their whole duty was performed at all times, something which of itself, to my mind, is worth a good deal. A MANAGER.

August 29.

[We print the above communication with a good deal of satisfaction. It reflects the opinion of a broad-gauged telegraph manager who has himself risen from the operating ranks, and whose several promotions have been fairly earned by personal endeavor. What he says is strictly true. There may be isolated cases of favoritism shown in the telegraph service, but such instances are rare, and the disposition to raise an issue on that score, as is sometimes the case, is downright folly, a sheer waste of time. Any telegrapher who shows intelligence, who applies himself faithfully and who has an endowment of level-headed common sense, one of the most important attributes to any man in the great battle of Life, will come out on top.—Editor.]

Annual Report of the British Telegraphs Shows an Enormous Deficit.

The forty-eighth annual report of the Postmaster General of England, Lord Londonderry, giving statistics up to March 31, and made public on August 15, is an interesting document. It shows that the number of inland telegrams transmitted during the fiscal year was 74,721,194, an increase of 1,536,330 in number. The total receipts for the year were $17,850,230, an increase of $553,465, and the total expenses for the same period were $21,109,260, an increase of $2,122,290. The net deficit was thus $3,259,030 or $1,570,825 more than the previous year. If allowance be made for interest on the capital, $54,338,220, created for the Government purchase of the telegraphs, the deficit for the year is raised to $4,753,330.

As an instance of the work thrown upon the department on special occasions, it is mentioned that the number of words transmitted from London on the evening of June 2, in connection with the announcement of the terms of peace, amounted to nearly 740,000. In the same connection it is recorded that on March 19 a business firm despatched a telegram to 7,720 different addresses. There has been a marked increase in the number of telegrams received and delivered by telephone at the Central Telegraph Office in London. During the past winter the telegraph wires suffered considerably from snowstorms. A particularly destructive storm occurred in December last, and the cost of making good the damage to the lines amounted to nearly $150,000. The effect of these interruptions has been to give greater prominence to the question of providing under-ground, lines. The line between London and Birmingham, 120 miles, proved of great value during the emergency; and the Postmaster General hopes that next year it may be possible to place at his disposal larger funds in order to accelerate the execution of a comprehensive scheme. The London and Birmingham line has already been extended to Stafford, and it will be carried on during the present year to Warrington, where it will join existing underground lines between Manchester, Liverpool, and Chester. The following large centres will then have underground communication with London: Birmingham, Dudley, Wolverhampton, Stafford, Warrington, Manchester, Liverpool, and Chester. Another exposed portion of the telegraph system which is to be protected by placing the wires underground is that between Preston and Penrith. About 34 miles of pipes have already been laid on this route. It is proposed to carry the underground line eventually as far as Lanark, whence branches will be laid to Glasgow and Edinburgh. The next extension will probably be from Manchester to

the principal Yorkshire towns through Bradford and Leeds, and thence to New-Castle-on-Tyne. Although the use of paper-insulated cable has considerably cheapened the cost of under-ground lines, they still involve a very heavy expenditure, and it will be necessary to proceed with caution. The London-Birmingham line cost $825,000, while the contemplated extension northwards will, it is estimated, involve a further expenditure of $3,500,000. In addition to these underground extensions, much is being done to give greater stability to the service by the erection of reserve wires, carried as far as possible by alternative routes. These wires also have proved very useful during the past year.

International Association of Municipal Electricians.

Preparatory to the coming convention, the seventh in the series, of the International Association of Municipal Electricians, which is to be held at Richmond, Va., on Tuesday, Wednesday and Thursday, Oct. 7, 8 and 9, Secretary Frank P. Foster, of Corning, N. Y., has issued a circular of invitation in which the programme of the affair is stated. The papers to be presented are as follows:

"Municipal Inspection and Control," by Walter M. Petty, superintendent of fire telegraph, Rutherford, N. J.; "Relation of Electrical Interests to other Branches of the Muncipality," by Capt. Wm. Brophy, of Boston, Mass.; "Classifying of Records of Electrical Departments and Standard Specifications for Supplies and Contracts," by Edward F. Schurig, city electrician, Omaha, Neb.; "Report of Committee on rules for Electrical Inspection and Control, Especially with Reference to the Occupancy of Streets," by Morris W. Mead, superintendent of the bureau of electricity, Pittsburg, Pa.; "The Telephone Service in Connection with Fire and Police Signal Systems," by Jeremiah Murphy, superintendent of Police Telegraph, Cleveland, O.; "Electrical Government," by A. S. Hatch, assistant superintendent public lighting commission, Detroit, Mich., and "Joint use of Conduits," by Charles F. Hopewell, city electrician, Cambridge, Mass. Mr. Hopewell will also give his admirable "Illustrated Lecture of Fire and Police Telegraph."

The headquarters of the association will be at Murphy's Hotel, Richmond, where officers and committee will be in attendance to look after the welfare of the members and guests.

T. M. B. Association Annual Meeting.

The annual meeting of the Telegraphers' Mutual Benefit Association will be held at 195 Broadway, New York, Western Union Building, on Wednesday, Nov. 19, at 4 P. M. Delegates from many sections of the United States will be present.

The First Atlantic Cable.

BY FRANCIS W. JONES.

August 5th, 1858, forty-four years ago, the first Atlantic cable was landed, connecting Ireland and Newfoundland. The Niagara and the Agamemnon, two steamships, containing sufficient cable to span the ocean between Valentia and Trinity Bay, met in midocean and, splicing the outside ends of their respective sections of cable, proceeded on their courses, the Agamemnon east, the Niagara west, both arriving at their destinations August 5th. A mistake was made in putting armor on the cable so that when making the splice it was discovered that the outer armor wires of each cable met in reverse direction, and a peculiar "ball splice was made and inclosed in a crescent-shaped wooden box about eight feet long, protected by iron boiler plates, and was so lowered into the ocean, 9,000 feet deep. This would make an interesting addition to the curiosities of a museum if some one interested enough to grapple with the subject should recover the unique cable splice. The distance in a direct line over the ocean between the two cable huts is 1,984 miles. The cable paid out by the two ships between the harbors of Valentia and Trinity Bay was 2,267 miles. The total distance covered by the ships was 1,960 miles and the length of cable submerged was 2,267 miles, an excess of 307 miles of cable, or about 16 per cent. of the whole length absorbed by the sinuosities of the bottom of the ocean, which was over 10,000 feet deep for more than two-thirds of the distance.

The core had seven strands of 22 copper, equal to 123 1-3 pounds per mile, insulated with three coatings of gutta-percha to three-eighths inch diameter, weighing 261 pounds per mile, and served with hemp saturated with a mixture of tar, pitch, linseed oil and wax, and then sheathed with eighteen strands each containing seven iron wires of 22 gauge, and the cable weighed, finished, a little over one ton per mile, and a breaking strain of three and a quarter tons. For ten miles from Valentia, and for fifteen miles from Trinity Bay, the shore ends had heavier insulation and armor. The 2,500 miles of cable ordered for this vast undertaking required 119½ tons of pure copper, made into 20,500 miles of wire; 300 tons gutta-percha, 1,687 tons iron, drawn into 367,500 miles of armor wire; 240 tons of tarred yarn, besides tar, etc., and cost nearly $500 per nautical mile at the factory in London.

The simultaneous news in Europe and America on August 5th, 1858, of the landing of the cable resulted in a universal jubilee and extraordinary manifestations of joy everywhere.

The electricians had to contend with hitherto unknown electro-static and other phenomena, and several anxious days were spent in trying to get readable signals through. The first message was hanging on the hook in Ireland. It was from the Queen of England to the President of the

United States. On August 16th part of this message was received in Newfoundland and forwarded by land wires to Washington. It was as follows: "The Queen desires to congratulate the President upon the successful completion of the great International work in which the Queen has taken the deepest interest." It was thought this was a complete message, the curtness of which led the President and others to regard it as a fake. On the following day the President received the delayed part of the message containing the fervent good wishes and courteous expressions of the Queen, and made a suitable reply of 136 words. The cable failed September 1st, after the transmission eastward of 2,885 words and westward of 1,474 words, and was permanently abandoned.

Line Construction.

The Western Union Telegraph Company has issued in pamphlet form certain rules and instructions designed for the government of its construction department. The subject-matter, while tersely expressed, as befitting such a publication, is nevertheless set forth so clearly, and embodies so much information of a character that will be of interest, that TELEGRAPH AGE gladly gives space for the benefit of its wide range of readers in this and succeeding issues, to the more important portions of the subject touched upon. This matter was compiled by C. H. Bristol, the general superintendent of construction of the company, and is the result of his life-long experience in telegraph construction work. It is as follows:

The minimum depth that poles should be set beneath the surface of the ground is as follows (except where rock is encountered at two and one-half feet or less, in which case it is only necessary to set 25-foot poles three and one-half feet, 30-foot poles four feet, and 35-foot poles four and one-half feet in depth):

25-foot poles, 4½ feet;	45-foot poles, 6 feet;
30-foot poles, 5 feet;	50-foot poles, 7 feet;
35-foot poles, 5½ feet;	55-foot poles, 7 feet;
40-foot poles, 6 feet;	60-foot poles, 8 feet.

In wet or marshy locations, or in locations where the ground is likely to be greatly softened by heavy rains, or where it is necessary to set poles on slopes, they should be set at a greater depth than above indicated, the object being to set the poles at such depth that there will be no possibility of their being blown over by any wind, or lifted by frost.

In building a line the tops of the poles should be made wedge shape, so that they will completely shed rain and snow. The bottom of the wedge should be four inches above the top of the upper gain. The direction of the wedge must be in a line parallel with the wires and at a right angle to the cross-arms.

The slant of poles on curves should be gradual, so that the strain on the poles will be evenly distributed. All sharp curves and angles should be well braced or anchored. Braces are preferable where there is room and suitable timber is available. Braces should be set a uniform distance from the butt of the pole, at least six feet when possible, and the top of the brace should be just below the bottom gain.

When necessary to anchor poles (instead of bracing) anchors should be so constructed that the top of the anchor will project a sufficient distance above the ground to admit of properly attaching the guy wire to it. Under no circumstances should the guy wire be fastened to the anchor beneath the surface of the ground.

Office poles should be guyed in such manner as to keep the strain of the wires off the office fixtures and front of building.

Lighting conductors of ordinary line wire will be placed on poles of new lines in course of construction, unless otherwise ordered, as follows:

Lines of one to twelve wires, thirty poles per mile, on every fifth pole, and on office poles; lines of one to twelve wires, thirty-five poles per mile, on every sixth pole, and on office poles; lines of twelve wires and upwards, thirty-five and forty poles per mile, on every tenth pole, and on office poles.

About ten feet of this wire should be formed into a flat coil and placed under butt of pole, the other end of wire to be stretched up the pole and fastened to the same by twelve or more wire staples, and extended seven inches above top of pole with end turned back and fastened to pole, making the projection above top of pole three inches long, and double.

On bracket lines the ground wire should be attached to the pole one-quarter of the way around from the bracket, so that if a second wire is put upon the opposite side, neither of the line wires can touch the ground wire if detached from the brackets. On cross-arm lines the ground wire should be attached to the pole on the side opposite the cross-arm.

In the construction or reconstruction of lines of considerable size avoid the use of high poles to carry the wires over bridges, building, etc., and wherever practicable use short poles and cable.

LOADING AND DISTRIBUTION OF POLES AND OTHER MATERIAL.

Flat cars should be equipped on each side with at least five good hardwood stakes, securely fitted into stake pockets. If gondola or coal cars are used, stakes can be set on inside of the frame or sides, and should be located in such manner that when a pole is rolled from its position to either side of the car it will be stopped by at least four stakes. This applies to poles of 25, 30 and 35-foot lengths loaded on one car. Poles of above lengths should be loaded (without lapping) with ends reasonably even and not extending beyond each other more than a foot at either end of load.

Poles of 40, 45 and 50-foot and longer lengths, which require two cars to carry them, should be so loaded that when a pole is rolled from its position to either side of the cars, it will be protected from falling by at least four stakes.

In all cases where long poles are loaded on two

cars, pieces of timber not less than ten inches in thickness should be placed across the decks of each car midway between the stakes which are to hold the poles on the car. In loading long poles on double cars which have been partly loaded with short poles, there must be a saddle or bolster of timber placed on top of the short poles and securely wired to the stakes, so that it cannot get loose before long poles are loaded. These bolsters must be so placed that the long poles will rest entirely upon them. This will enable double cars to curve without breaking stakes.

When a car is half loaded at least four stakes on each side of the car should be wired to stakes on the opposite side, with not less than four strands of 8-gauge wire. If the car is to go any distance, tie the stakes again when load is completed, with four strands of 8-gauge wire. Should you receive cars of poles for distribution not thus wired you will see that the front and second stakes are safely wired before beginning distribution. When ready to distribute poles, see that front stake extends fully two feet above top of load, and in no case should this stake be cut to the level of the load. The other stakes on car may be kept cut to the level of the load to enable you to roll the poles off.

All poles should be distributed by the use of rope on the front end of pole. This keeps the pole always under control, reduces the danger of accident, and avoids breakage. This rope should be ¾-inch in diameter, with one end fastened to the second stake from the front end of the car on the side opposite to that from which poles are being thrown. The other end should be passed under and over the pole about one-third the way back from the front end of pole, then around the stake and held by a man, while other men roll the pole off the car by the use of cant hooks or peaveys, the slack being let out as required by the man holding the rope. The front end of the pole should be placed at least four feet back or toward the opposite end of the car from which it is to be thrown, with the back end close to the side of car where it is to be unloaded. Then with rope on the pole there is no chance for it to get away and hurt any one as it is rolled off the car. Poles twenty-five to forty feet long can be handled safely in this manner. Longer poles should be handled with two ropes, and the train stopped until the back end of the pole rests on the ground. Three to four stakes should be used on the distributing side of the car, and in no case should the middle ones be removed, as that puts too much strain on front stakes and is dangerous.

Speed of train should not exceed six miles per hour when distributing poles. Where the giving and taking of slack of train is liable to throw men between cars, always cover the opening between cars with boards or arms, or fasten wire or rope across opening to prevent men from falling through to rail if thrown from any cause.

Linemen should not be permitted to distribute poles with less than two men to assist, and where so few men are employed, the car should be placed behind the caboose or be the last car of the train, and the safety stake should be left at least four feet above the level of the load.

In distributing poles, arms, wire or any other material from a moving train, keep a careful lookout ahead in order to avoid accidents to persons or stock, or injury to material or property. One man's entire time should be assigned to this duty.

(To be continued.)

The Use of Slang.

The ancient beacon of the Terrapin, the Baltimore Sun, flares up tremendously because Dr. Granville Stanley Hall, president of Clark University, has told some teachers in Chicago that "boys and girls need slang. It's good for them. Let them use it. It keeps them from becoming tongue-bound.

"If a youngster tells you of a 'hunch' or a 'straight tip' or a 'pipe,' don't correct him. He has found the right word." Whereat there is great flickering of the ancient one.

This is very bad advice. The English language is not so poor as the Clark University professor seems to think. It abounds in words of good origin which will express accurately, graphically and sensibly any idea which a man may desire to clothe in decent garb.

Dr. Hall is not speaking of the language of men, but of the language of girls and boys. Still, a pretty sort of English would be that of the dainty culler and sifter of words, the snob who wouldn't admit to his vocabulary any expression of whose origin and social standing he was doubtful. Words of sap and strength are not to be had by consulting the peerage of vocables. They spring from the soil and street.

It takes an artist to use slang effectively. It may be abused or misused as alliteration or profanity is. The slang of most folks has no edge to it and is wicked, worn and tiresome. There is a fine flash and color to good slang; and almost any slang may be justified as a saver of energy. Translate "hunch" or "straight tip" into the bookish tongue and how much you lose.

Good slang is the enemy of the Circumlocution Office of Speech. One sharp, short, brilliant phrase does duty for a whole squad of malingering and clumsy words. Slang is the pemmican of language.

In Dr. Hall's opinion it is another recommendation of slang that it "aids the young man or woman to acquire fluency." At any rate it enlarges and enriches the vocabulary. Most of us have the same poor little wretched stock of words, and use them over and over again until they are a weariness to our friends and ourselves.

Slang gives variety and adds a wild fresh flavor, supplies the acid and bite, puts bitters into the cocktail. And often it is so relieving.

Take the boys in the Ninth ward, now the capital of philology. Do they want to say that a person is "crazy?" Look at their wealth of

synonyms: "Batty," "bughouse," "daffy," "doty," "nutty." Some time some or all of these gypsies will be burghers with gold chains around their necks.

Children need no encouragement to use slang. They and foreigners learning English here pick up slang first and most easily. Nor will exhortation to avoid slang do any good. It is a part of the children's education. They will use it behind your back if you succeed in restraining them from it when they are before your face. It is irresistible and incorrigible.

We saw such a beautiful and good little boy last Sunday. He had flaxen curls, a shining morning face, a wide white collar such as Rollo, that companion of our youth, used to wear, clothes cleaner than clean.

He must have been going home from Sunday school. He looked as though he had rained down from Heaven. An angelic boy. And he was saying to some invisible, "rock" throwing boy behind the fence, "If I git hold o' you, I'll clump you in the snoot."—New York Sun.

New Western Union Superintendent at Pittsburg.

Mr. E. B. Saylor, who on September 1 assumed the duties of superintendent of the eighth district of the Western Union Telegraph Company, with headquarters at Pittsburg, where he succeeds Mr. J. D. Flynn, resigned, is a native of Canada, his birth occurring in that country in

E. B. Saylor,
New Western Union Superintendent at Pittsburg.

1859. His first appointment in the telegraph service was with the Dominion Telegraph Company as an operator at Jilsonburg, Ont., in 1874. The year following he accepted a position with the Montreal Telegraph Company at St. Clements, Ont., which he soon left to enter the employ of the Grand Trunk Railroad at Gorham, N. H., as an operator, going thence early in 1876, with the Atlantic and Pacific Telegraph Company at Portland, Me. When that company was absorbed by the Western Union Telegraph Company a year later, young Saylor found employment at the same point with the latter, with which thereafter he has since continuously remained. In 1881 he was transferred to the operating department of the Philadelphia, Pa., office, where, in 1884, he was promoted to be night chief, succeeding in 1887 to the position of chief operator. This place he continued to hold through a series of years, until last Spring when he was transferred to the office of the general superintendent in the main office at New York, from whence he has gone to Pittsburg, as before mentioned. Mr. Saylor, who is a zealous and painstaking officer, is conceded to be one of the finest operators in the United States. He is an accomplished electrician, always alert to the best interests of his company, and will no doubt make a favorable individual impression in his new sphere of action. The mantle of superintendent could not have fallen upon shoulders more worthy of the honor, and his hosts of friends in Philadelphia and elsewhere are warm in their congratulations of his preferment.

The Cable.

The Safety Insulated Wire & Cable Company, whose works are now at Perth Amboy, N. J., have just completed six hundred miles of submarine cable for the Mexican Government. The manufacturers have fitted up a cable steamer for the express purpose of laying the cable. This is by far the largest submarine cable ever made in the United States.

According to statistics just issued in Germany the cable system of that country consists of seventy-three lines connecting different parts of the home territory, six with the colonies, and nineteen with foreign countries, making a total of some 17,000 miles. One-third of all the German cables are State concerns, while the other two-thirds are in the hands of private companies.

The Railroad.

Mr. J. S. Evans, at one time superintendent of telegraph of the Nickel Plate, has been appointed trainmaster of the Denver & Rio Grande at Glenwood Springs, Colo.

The Seaboard Air Line telegraph operators in transmitting messages also always send the time the message handled was filed. This practice has been found to add greatly to the value of the telegraph service of this railroad.

New York Visitors.

Mr. H. D. Reynolds, superintendent Postal Telegraph-Cable Company, Buffalo, N. Y.

Mr. W. F. Williams, superintendent of telegraph of the Seaboard Air Line, Portsmouth, Va.

LETTERS FROM OUR AGENTS.

[Advertising will be accepted to appear in this department at the rate of five cents a word, announcements to be enclosed with a border and printed under the name of the place of the advertiser. The special local value attached to advertising of this character will be apparent. Our agents are authorized to solicit advertisements for these columns, and further information on this subject may be obtained on application.]

HOUSTON, TEX., WESTERN UNION.

This office has undergone a complete metamorphosis within the last few months, for Manager Frank Hughes, since his late instalment, has inaugurated many improvements.

Mr. Thomas Young was recently appointed chief operator, Joseph Johns night chief operator and Thomas Walker all night chief, while A. Brooks is the assistant day chief. Your correspondent remembers when only four wires ran into this office; now it can claim a hundred, with more being added constantly. We have the finest switchboard in the South, with a motor generator battery recently installed by Mr. J. C. Barclay, electrical engineer of the company.

Col. T. P. Cook, our general superintendent, paid us a visit sometime since and was shocked at the dingy appearance of the office. The general renovation which has followed his orders is much appreciated; makes us feel more like work. A clean bright office seems to impart energy to the toiling operator. With dingy surroundings he seems to partake of the consequent dullness and dingy atmosphere, and is not the energetic worker as when his environments are more cheerful.

Manager Hughes has used every effort to make the operators comfortable and they evidently value his interest in their behalf. With fans to keep us cool, our office would be fitted with the one thing lacking, and these, the manager declares, shall be in place by next summer.

The receipts of the Houston office have greatly increased; and were greater during a recent three days than in any similar period in its history, with the exception of a few days succeeding the great Galveston storm.

We have a force of thirty operators and Chief Young is casting about for an addition to this number as there are not enough for the work. The busy cotton season has only begun; what will it be when the full force of the crop begins to move?

It would be invidious to mention only a few of our boys, but suffice it to say no telegraph office has a more genial, hardworking, and competent force than Houston. It seems to be the concensus of opinion that Houston is to be the relaying office soon. If so it will naturally require a much larger force to move the business, and would doubtless make Houston the largest office south of St. Louis. So many railroads center in this city that many wires are required to satisfy their demands, and with a present population of nearly 70,000, and a growth faster than that of any city in the South, the business will necessarily increase immensely each year.

J. G. Frankel, our superintendent, is a Texan, and of course all the old Texas operators like him.

BOSTON, MASS.

WOODS HOLE, MASS., MARTHA'S VINEYARD TELEGRAPH COMPANY.

This office was brought into exceptional prominence during the recent mimic war manoeuvers. It was captured by the "enemy," but the docility of its staff secured for them highly magnanimous treatment. A large amount of press matter was dispatched from this office, on each of two consecutive nights, 10,000 words being sent, the quick handling of which elecited much praise from newspaper representatives, and thanks for personal courtesies extended by General Manager H. G. Haddon.

Regarding the general belief that the Western Union and Postal companies are two in name only, a funny incident occurred recently in this office. Blanks of both companies are placed upon the counter so that customers may use either line as they wish. Two New York gentlemen called and started to write messages when one of them interrupted the other drawing his attention to the fact that both company's blanks were here. Turning to the attendant he said: "Is it not unusual to have Postal and Western Union blanks together in one office?" The reply was that it was due to a mutual arrangement, that this was neither a Postal nor a Western Union office, but the office of the Martha's Vineyard Telegraph Company. This explanation did not seem to carry conviction, and on leaving the office the party was heard to say: "This bluff about the Postal and Western Union being separate concerns is all rot. Didn't I tell you the other day that I believed they were all one. Now I am darn sure of it."

The personnel of this office is as follows: Miss Edith E. Wright, manager; Miss Ethel A. Burgess, book-keeper. Summer operators: H. C. Fraser and Henry Behnken. E. Braggs is the messenger and Frank T. Peterson, lineman.

MONTREAL, QUE., GREAT NORTH WESTERN.

Leslie Hall has gone on a short vacation to Iroquois, Ont.

Chief operator Walter Graham is absent on his vacation of two weeks.

Miss Ida Phelan has resigned.

Miss Rose Beaudoin, who has been absent

some time on account of ill-health, has resumed her duties in this office.

A new wire extending from Montreal to Quebec, is nearing completion.

John O'Neill has resigned .

Mr. Mahon and Mr. Byrd are absent on vacation.

Michael O'Reilly, chief of traffic; Thomas Murphy, senior operator for a private firm; George Alexander, Michael Mac-Aneeney, Thomas Power, Great North Western Telegraph operators, and Frederick Lawrence, operator for a broker, all of Quebec, were visitors to this office Labor Day.

Miss Gertie Egli paid a short visit to relatives in Quebec.

QUEBEC, QUE., GREAT NORTH WESTERN.

George Alexander, Mr. McKay and several other operators recently left on a visit to Montreal.

CROWLEY, LA., POSTAL.

The fall season has opened up with a brisk business. We have two "pony" wires running into the office from two of the largest rice mills here and prospects of two more being cut in; this will increase our office force.

Mr. J. F. Bechtel, manager, has resigned to accept a position in the Houston office. Miss G. W. Olsen has been transferred from the Port Arthur office to the position of manager here, with H. B. Nelson, as operator. John Riley and David Wilder messengers, and Miss Effie Durr counter clerk and cashier.

SHREVEPORT, LA., WESTERN UNION.

This office is under the management of Mr. J. T. Patton, a position he has held for a number of years, and he is well and popularly known amongst the business people. The remaining personnel is as follows:

Mr. J. C. Berry, formerly manager at Monroe, this State, chief operator; Mr. Edward J. Norton, formerly of New Orleans, night manager; Edgar Theus, Howard Jackson and John J. Patton, day operators, and R. Scott and James McCoy, night operators; Miss Carrie B. Patton is the receiving clerk and Miss Hutchinson, delivery clerk. At the Phoenix Hotel, Miss Bessie Patton; Union Depot, Mr. Holmes. Hugo Asher is at a pool room, and Mr. W. L. McDonald, The Associated Press.

The cotton season is upon us and our wires are crowded to their utmost capacity, business heavier than in many years.

KANSAS CITY, MO., WESTERN UNION.

On August 27, Frank E. Redline, who for the past fifteen years has held the position of wire chief in this office, bade farewell to his many friends and started for Los Angeles, Cal., where he has accepted a position with the Santa Fé Railway. He was the recipient of several useful tokens as reminders of the esteem and well wishes of those whom he left behind. His oldest son, who preceded him some two years ago, is in quite poor health which influenced him in making the change.

Mr. E. L. Chester, who succeeds to the position of wire chief, has had long experience in the telegraphic profession. In 1879, he opened an office at 7 Merchants Row, Boston, Mass., for the American Rapid Telegraph Company, later being promoted to the position of manager of the Commercial Wharf office. He left there in 1883, going to New York, and two years later came west as far as Chicago. After a few month's employment with the Western Union at that place, he engaged in other business for five years, then came to Kansas City, and again engaged in telegraph work. Three years ago, he was appointed assistant wire chief, which has especially fitted him for the position which he now holds.

C. W. Alexander, night traffic chief, has been transferred to the day force, relieving way chief, C. R. Summers, who takes the position of second assistant wire chief. Both these gentlemen have held their respective positions for the past twelve years.

Mr. J. H. Vogan, takes the position of night traffic chief, being relieved on ways by Paul A. Juvet, newly appointed from the ranks at the key.

Charles E. Thomas, has been placed in charge of the telegraph department, at the Star, vice E. P. McWatty, resigned. Mr. McWatty will for the present make his home in or near Los Angeles, Cal., where his family had preceded him. Ross. G. Wheaton will work second trick under Mr. Thomas.

Among other departures, we note that of Mr. John J. Konter for Pomona, Cal.

Mr. H. B. Cerveny has been appointed manager for this company at Beaumont, Tex., for which place he left September 2, being relieved at the Kansas City stock yards office by Dr. O. R. Crooks. Mr. W. T. Brown relieves the latter as manager at the Mulberry street office, he in turn being superceded by James B. Brown as manager at the Twelfth street office.

Miss Nannie Clapper now waits upon the customers at the Coates Hotel, vice Miss Ora Norman, transferred to main office.

A. R. Young is back at work after a two months' trip to Scotland. He was within one hour's ride of London when news was received of the King's illness and the postponement of the coronation.

Mrs. May Richardson is again at her post of duty at the Coates Hotel, after three months' vacation, which she enjoyed in California.

Assistant Chief Operator, S. W. Atkinson, has returned from a recreative trip in Colorado.

Others returned from vacation are: Mrs. Potter, Mrs. Watson, Miss Effie Forbes, Miss Bessie Goedecke, and Messrs. W. M. Hannon, Wm. H. McKenney and Robt. E. Watson.

Messrs. Fred W. and G. L. McConaha have been called home to Chester, Ill., by the death of their father. Mrs. W. McLaughlin, a sister of the deceased, also accompanied them.

CHICAGO, ILL. WESTERN UNION.

Benjamin F. Powell, Newton Crittendon and Traffic Chief Frank Richardson attended the reunion of the Old Timers at Salt Lake City.

Will B. Paddock, formerly Sunday chief operator and wire chief, at this office, died September 4, after a lingering sickness. He was buried at Cazenovia, N. Y. He leaves a wife who is well known here. Mr Paddock was a faithful official in every capacity in which he served, affable in manner and was considered a man of ability.

Returned from vacations: Assistant division chief Charles White; wire chief Shulkins; chief B. F. McKee, from a brief run to Milwaukee; assistant chief operator C. H. Finley, from a trip up the lake; Annie Morrison, from a visit to her home in Fall River, Mass.; Mrs. Pierce, night time keeper, from a visit to her home in New York; Mrs. Rose and Miss May Gallagher.

The mother of Frank McNellis died September 3.

Mr. William Roach, of the Boston local, nights, has returned after a brief illness.

Former chief operator Webber of Springfield, Ill., has been stationed here in the capacity of wire chief at west board. Mr. Webber has always been a favorite with the Chicago chiefs, for while at Springfield, his efficient services and quick manipulation of circuits,during trying moments, were freely recognized.

W. H. Sievert, manager at Elgin, Ill., recently renewed his subscription for TELEGRAPH AGE, and purchased a copy of Phillips' Code. He says he wants to keep in touch with the "latest".

Harry Church, of Council Bluffs, Ia., was a recent visitor, and left an order for a copy of "Pocket Edition of Diagrams," etc.

CINCINNATI, O., WESTERN UNION.

The advancement of Manager C. E. Page of this office to the position of superintendent at Boston brings to us a manager in the person of Mr. R. C. Bliss, formerly manager at Springfield, O., and a genial, whole-souled gentleman. Both promotions were strictly a reward of merit. Mr. Page was presented on his retirement with a handsome loving cup, a token of esteem from his former employes and co-laborers. Superintendent Miller made the presentation speech in his usual happy manner. Mr. C. H. Woellner, for a number of years solicitor for the Western Union here, will accompany Mr. Page to Boston, where he will possibly occupy the same position.

Mr. F. D. Duckett goes to Cambridge, Mass., as manager, and his brother, Mr. H. L. Duckett, will accept a position as operator in the main office at Boston.

Mr. Wm. Barth, at present manager of the office at the Grand Central Depot here, goes to Fall River, Mass., as manager in the same interests. Other changes, it is believed, will follow.

Miss Rice, Miss Gallagher, Miss Geisenhofer, Miss Tozzer and Messrs. Connolly, Colligan, G. Derfus and J. Stangle have recently returned from their Summer's outing; in fact, nearly all the wanderers have returned.

Business is very heavy, and those on the waiting list are making full time and doing quite a good deal of "scooping."

PHILADELPHIA, PA.

POSTAL.

Vacations are on the ebb. Almost every one who intended going has already done so, and the few remaining have deferred their trips for the cooler months for various reasons. Cashier George G. Glenn philosophically asserts that he can perspire at home as well as at a Summer resort, and claims one can take recreation and rest in September or October as well as in July. Acting, doubtless, upon this suggestion, Chief Operator C. A. Stimpson selected September as his outing time, embracing the opportunity to take the trip to Salt Lake City with the Old Timers to attend their annual reunion held at that place. Mr. Stimpson is accompanied by his wife.

Manager Charles E. Stump, of the Fish District office, with Miles E. Dunn, wire chief at the main office, went to Maine.

Manager W. S. Sullivan essayed to reach Duluth via the lake route from Buffalo, but a distressing festering gathered in his ear and compelled him to place himself in the hands of specialists, who succeeded finally in relieving him of his trouble.

Traffic Chief Geo. W. Dunn has returned from a pleasant stay at Mt. Pocono, Pa.

Acting as substitute for the operator at Baldwin's Locomotive Works, Mrs. M. E. DeGinther, in charge nights at the Broad Street Station office, found a pleasant intermission from her trying duties. She was relieved at the station by Mr. C. C. Figgs.

Our sincere sympathy is extended to Mr. Frank L. Scott, of the North Front Street office, who has just buried his mother from her home in Delaware. Mr. M. A. Auerbach acted as Mr. Scott's relief during his absence.

Consequent to a severe spell of sickness, Mr. Geo. W. Layton, in charge at the Ledger office, has been ordered away for recuperation and rest. Pending his return Mr. Thomas Poppert assumes Mr. Layton's duties, assisted by N. F. Wright.

Mr. Earl W. Miller, assistant at the Board, nights, accompanied by Mr. Wm. Bowers, are still among the vacation absentees.

Our old friend Michael O'Donnell, now of the

New York Journal's staff of operators, paid us a visit recently.

Electrician J. F. Skirrow, of the New York main office, did not fail to drop in and excite the envy of the less fortunate who gazed upon his smiling and healthful countenance.

New arrivals have been numerous since our last letter, among them the Messrs. H. H. Matthews, W. Delaney, H. Goldberg, H. Koeberle, J. A. Peters, W. C. Ash, H. E. Owen, W. H. Duckett, J. F. Burke, J. A. Golden and L. S. Abram.

NEW YORK CITY.

WESTERN UNION.

The southern division has been abolished, or perhaps it would be better to say, it has been included in the eastern division. The districts eastern and southern have been renumbered. There are now eleven districts in the new eastern division, and Mr. B. Brooks is the general superintendent.

Mr. E. P. Griffith, inspector, was assigned to the President's party, which recently made the tour of New England.

N. B. Topping, Jr., the son of N. B. Topping, the well-known old-timer of this office, has been appointed to a position on the waiting list.

Thomas Nolan and J. J. Hornett have returned from the Long Branch, N. J., office, where they have been employed during the past season. Chief Operator Martin Durivan of that office will also return shortly and resume his old position in this department.

F. P. Kelly, G. B. Guthrie, C. W. Dean and J. F. Hopkins have resigned.

Mr. F. D. Stevenson, night city chief, has also resigned. He will go with a brokerage firm.

For the benefit of telegraphers who are members of the order, the Woodmen of the World, under the auspices of Seawanhaka Camp, No. 19, of Brooklyn, N. Y., largely made up of telegraphers, will unveil a monument in Cypress Hills Cemetery, Brooklyn, on Sunday, September 21st, at 2 P. M. (A monument is erected at the grave of every deceased Woodman.) Addresses will be made by Sovereign Commander J. C. Root, of Omaha; General State Deputy Barnes and Walter C. Burton, of 195 Broadway. There will be vocal music by the Arion Quartette, and the Letter Carriers' Band, of 42 pieces, will discourse the regulation instrumental music. The ritualistic work of the Woodmen in the unveiling ceremonies is unsurpassed, and will be rendered by a team from Bridgeport, Conn.

Mr. Russell D. Riley, wire chief on the southern switch, and one of the best known men in the service, has resigned to enter other business.

Mr. F. E. Coyle, for many years private secretary to General Superintendent Merrihew, who recently resigned, has been appointed assistant chief clerk in General Superintendent Brooks' office.

POSTAL.

Frank McKiernan is spending his vacation by attending the Old Timers' Convention at Salt Lake City, Utah.

The following named persons have returned from their vacations: J. G. Pierce, J. F. Stevens, R. F. McKune, N. E. Popp, E. J. Liston, J. G. Good and T. J. Flynn.

Resignations: J. J. Woodford, D. J. Nugent and M. J. Moran.

Miss Avis Gibney has resigned and accepted an engagement with a Boston theatrical company. She was formerly with the Western Union at San Francisco and the Postal at Chicago, but for the last two years has been in this office. Her friends wish her success in her new undertaking.

Samuel F. Campbell of this office, a resident of Elizabeth, N. J., was married to Miss Ethel West, of Long Branch, N. J.

The Postal main office baseball team defeated the semi-professional Niagara team in a recent match by a score of 8 to 7. Operators Roesner, Ferguson, McAteer and Sullivan deserve great credit for their all around good work.

AT SALT LAKE CITY.

The Old Time Telegraphers' and Historical Association and the United States Military Telegraph Corps.

When Salt Lake City was named last year, at Montreal, as the meeting place for 1902 of the associations above named, whose joint reunions, always a delightful feature in their history, are becoming venerable by reason of the number of years now placed to their credit, it was thought by some that the westward limit of locality had been overstepped. Omaha, St. Paul and Minneapolis had hitherto marked the line of demarkation in that direction, but when the Old Timers' consulted the map of the United States and observed that after all Omaha occupied but a centrally located position in this great country, it was deemed to be but simply a matter of patriotism, a debt due to Far Western members, to break away from the effete East and go a-journeying still further into the West, over the wide prairies, even out to where the wild Rockies rear their rugged and towering forms. Besides, was not George H. Corse, who had been elected to the presidency, a resident of that Far West! It was but an act of courtesy, therefore, to go out to the home of one who had consented to stand at the head of the organization. And so it was that Salt Lake City, the storied town of Mormonism, was named.

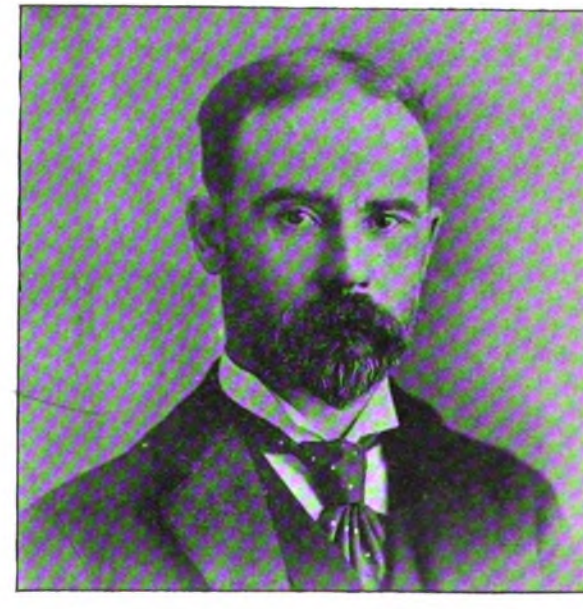
U. J. FRY, OF MILWAUKEE, WIS.,
President-elect The Old Time Telegraphers' and Historical Association.

So far as the Military Telegraphers' were concerned they would go wherever the Old Timers' might lead, for the question of a new president or of locality, outside of Philadelphia, of course, never enters as a determining factor into their councils, Col. Wilson holding his position in virtual perpetuity.

Salt Lake City burst like a beautiful vision upon the delighted senses of the journeying telegraphers when they reached that historic spot. The "unknown" of our childhood days, revealed, not a wilderness, but a highly cultivated country and an attractive city vested with all the conveniences of modern improvements. Nor was there a Bluebeard in the shape of Brigham Young to demand a toll of the new comers before entering his domain. Only a hospitable committee appeared to meet the strangers and bid them welcome. The peacefulness of the situation was an agreeable refreshment; the novelty of the surroundings and the relief felt at the ending of long railroad rides as the excursionists emerged from the cars, was generally remarked; and when the Kenyon Hotel was reached, the point where all were to meet in reunion as well as to find a sleeping place for the three or four nights to be spent in Salt Lake City, congratulations were exchanged and preparations for the brief sojourn perfected.

The New York party which left that city on the evening of Friday, September 5, was made up of a congenial company, and the nearly four days of transit gave ample leisure and opportunity to renew many old time acquaintances.

Delegations were present also from all parts of the country, and familiar faces from the Pacific Coast States, the New England States, the cities of New York and Chicago, and from other points, were everywhere noticeable. It was an eminently companionable crowd when all were assembled.



W. J. LLOYD, OF CHICAGO,
Vice-President-elect of The Old Time Telegraphers' and Historical Association.

On Wednesday morning, September 10, at ten o'clock, an informal meeting of the Old Time Telegraphers' and Historical Association and of the United States Military Telegraph Corps, was

held, thus giving all visitors an opportunity to meet each other socially. An enlivening half hour followed. This over, the business meeting of the Old Timers' was called to order at half past ten o'clock by President Corse. The minutes of the Montreal meeting having been previously distributed among the members their reading on this occasion was accordingly dispensed with. Mr. John Brant, of New York, the secretary-treasurer of the association, then read his report. It showed a cash balance on hand of $817.08, a substantial increase over the previous year.

The secretary in his report suggested that the by-laws of the association be changed making it necessary for an applicant to have been in the telegraph service for at least five years in order to make him eligible to membership.

Many letters extending courtesies to the visiting telegraphers were read and ordered printed, and the thanks of the combined associations were voted in reply.

A resolution of condolence was extended to Col. J. J. Dickey, superintendent of the Western Union Telegraph Company, at Omaha, Neb., on the death of his son, which occurred on September 6.

A resolution was passed thanking Col. R. C. Clowry, president of the Western Union Telegraph Company, for courtesies extended.

The delegates were cordially welcomed to Salt Lake City by the Rev. A. P. Simpkins in an exceedingly graceful speech, which was most fittingly responded to by Mayor Cochrane, of Montreal, a delegate from the Canadian city.

Walter C. Burton, of New York, presented the Morse badge to President Corse.

The election of officers for the ensuing year resulted in the selection of U. J. Fry, of Milwaukee, Wis., president; of William J. Lloyd, of Chicago, vice-president, and of John Brant, of New York, secretary-treasurer.

Mr. Fry is the superintendent of telegraph of the Chicago, Milwaukee and St. Paul Railway; Mr. Lloyd is the assistant superintendent of the Western Union Telegraph Company, and John Brant, who is returned to his old position in which he has served with such acceptance for a number of years, is a well known Western Union operator.

Milwaukee, Wis., was selected as the next place of meeting.

When the Old Timers had concluded their meeting, the United States Military Telegraphers assembled for their business conference. In the absence of President Wilson, Senator W. L. Ives of New York, the vice-president, presided, and John Wintrup of Philadelphia, acted as secretary. Col. Wilson's report which was read, is as follows:

"The last session of the society was held in the shadow of a great national calamity; the President of the United States had been stricken by the dastardly hand of an assassin, and was on his death bed. Your message of sympathy, sent from Montreal, did not reach his eyes, but after his death, Mrs. McKinley acknowledged it in words of appreciation.

"The doings of the society for the past year have been fair and unimportant. Upon the opening of the last session of Congress, I went to Washington, and after a careful review of the legislative field, became thoroughly convinced that any effort during the present Congress towards securing further legislation in recognition of our just and free claims would be futile, and I, therefore, did not call into active service the committee on Congressional action, which is composed of our ablest and most influential members.

"There is, as there has been for the past twenty years, an element in both Houses of Congress, which, while not openly opposing our claims, yet by some occult power has exercised an influence against them. Happily, this influence is becoming weaker and it is to be hoped will soon disappear. Without any person in either house to personally champion our cause, since the death of the lamented Senator Davis, and the great National and International questions, both political and economical, which, with irresistable force command the almost exclusive attention of this Congress, I would recommend that no further appeal to the National Legislature be made until the next Congress convenes in December, 1903.

"In the meantime it would be well for our members to keep in touch with the congressmen to be elected this year and get them personally interested in our cause. It. also. seems to me to be advisable that some one member of our society should be appointed to lay our case before President Roosevelt and endeavor to get him interested. I know of no one so able and competent to act as such an envoy as Major Rosewater of Omaha, and I would be pleased, if you would confirm my judgment, by his selection for that commission.

"Our numbers are steadily decreasing. To the long list engraven on our memorial column must be added the names of John H. Emerick, W. J. Bodell, R. S. Gough, A. C. Knapp and the ever genial E. P. Whitford, who died during the past year. Brave boys, all, who served their country well, and after long and useful lives, went down to their graves without receiving from that country, their well-merited rewards. Peace be with them."

Following President Wilson's report came the election of officers, which resulted in returning the former incumbents: Col. William B. Wilson, of Philadelphia, president; W. L. Ives, of New York, vice-president, and J. E. Pettit, of Chicago, secretary and treasurer.

The Ladies' Reception Committee were assiduous in their attentions to the ladies of the party, and in numberless ways contributed to their comfort and pleasure.

Too much praise cannot be accorded to the

several committees appointed to look after the interests of the visitors. They more than fulfilled all expectations; with unfailing courtesy their attentions were constant, contributing in many, and often unlooked for ways, to the personal comfort of the individual. No company of men and women could have been more cordially received, and guests carried away with them a sense of hospitality conferred that will remain a lasting and a delightful memory.

The membership of these committees were made up as follows:

Transportation Committee.—T. M. Schumacher, C. A. Tripp, C. A. Walker, L. L. Downing and Donald Rose.

Hotel Committee.—George C. Fenton, C. F. Warner, R. S. Campbell and I. H. Lewis.

Reception Committee.—C. B. Horton, Arthur W. Copp, J. B. Twiford, and Samuel F. Fenton.

A feature of the occsion that excited pleasurable comment was the distribution among the guests by Mr. W. E. Pierce of Lynchburg, Va., copies of a photograph of the house at Appomattox, Va., in which General Lee surrendered to General Grant at the close of the Civil War. The picture was taken by Mr. R. W. A. Horner, manager of the Western Union Telegraph Company at Lynchburg, a gentleman who was born in the historic dwelling.

The entertainment of the telegraphers was planned on a generous scale and carried out in the true spirit of genuine Western hospitality. But few of the excursionists had previously visited Salt Lake City, consequently every scene was new to the great majority, and the zest with which all entered into the spirit of the moment was continually made manifest. The drive and strolls about the city; the visits to the great tabernacle with its famous organ, to a recital on which all listened; an inspection of the Mormon temple and its beautiful grounds; the trip to Saltair on Great Salt Lake, the chief watering place of Salt Lake City; and above all the excursion out to the celebrated Ogden Canyon, will all remain as delightful features of a reunion in many respects the most unique in all the long history of the associations' meetings. The most pronounced social event, however, was the banquet at the Kenyon Hotel on the evening of Thursday, September 11, when a large number sat down to one of the most successful dinners ever given in Salt Lake. The scene presented was a brilliant one, good cheer abounded and the old time telegraphic spirit of fraternity asserted itself in generous measure. This was shown in the character of the numerous toasts proposed and in the warmth and wit of the responses elicited thereby. Letters of regret were read from some who were obliged to be absent, happiness prevailed, and the hour was late when the festal scene was finally brought to a close.

The toastmaster at the banquet was Judge Powers, who filled the position with great acceptability. Speeches were made by President Corse, Mayor Cochrane, of Montreal; Mrs. John Costelloe, James R. Beard, Walter C. Burton, Senator W. L. Ives, and M. J. O'Leary, of New York; H. W. Pope, of Buffalo, N. Y., Joseph Uhrig, of Chicago, and P. M. Collins.

Among those present were:

Boston, Mass.—G. H. Yetman and wife; H. W. Gillespie, John H. Connors.

Burlington, Vt.—John K. Butler and wife.

Bangor, Me.—P. J. Feeney and wife.

Buffalo, N. Y.—H. W. Pope.

Borden, Va.—W. G. Moffett.

Chicago, Ill.—E. G. Sheckler and wife; John S. Henderson, E. S. Hughen, R. G. Davidson, Joseph Uhrig, J. Newton Crittenton, L. W. Marston, F. L. Jacobs, D. S. Anderson and wife; Fred. M. Randolph and wife; F. Richardson and wife; F. L. Hanley, W. B. Dougall, B. F. Powell.

Cumberland, Md.—C. H. Meyers and wife.

Columbus, O.—O. H. Newell and wife.

Cheyenne, Wyo.—Mrs. Fannie M. Merrifield.

Cleveland, O.—W. A. Manning and wife.

East Liverpool, O.—W. E. Richey and wife.

Gadsden, Ala.—R. L. Adams and wife.

Helena, Mont.—P. M. Collins, W. E. Newcombe.

Hilliard, Wyo.—G. W. Carleton.

Johnstown, Pa.—Peter Weitz and wife.

Jersey City, N. J.—J. B. Bertholf.

Montgomery, Ala.—D. C. Sims and wife.

Minneapolis, Minn.—I. McMichael, J. P. Cassidy and wife; D. G. McIntosh and wife.

Montreal, Que.—Hon. James Cochrane, Mayor of Montreal, and wife; F. H. Waycott, wife and son.

Mount Pleasant, Pa.—Joseph Landis.

New York, N. Y.—W. C. Burton, J. B. Taltavall and wife; John Brant and wife; James R. Beard, John Costelloe and wife; Fred. Pearce and wife; M. W. Rayens, M. J. O'Leary and wife; F. E. McKiernan, A. E. Price and wife; J. A. Regan, C. A. Hicks and wife; Senator W. L. Ives, F. D. Murphy and wife.

Newark, N. J.—Adam Bosch and wife; J. A. Sutherland.

New Canaan, Conn.—L. Monroe, Jr.

Nashville, Tenn.—John F. Fleming.

New Orleans, La.—H. F. Farmer, N. T. Petrich.

New Haven, Conn.—E. B. Baker.

Newbern, N. C.—Geo. Henderson and wife.

Newark, O.—Charles A. Anderson.

Piedmont, W. Va.—Geo. W. Harrison.

Philadelphia, Pa.—John Wintrup and wife; J. E. Janney and wife; C. A. Stimpson and wife.

Paterson, N. J.—J. E. Dunning and wife.

Pittsburg, Pa.—F. J. McKenna and wife; W. A. Case and wife; J. W. Stump and wife; C. R. Stough, P. J. McKeever and wife; C. A. Mitinger, J. E. Rowe, E. J. Kirby, F. J. Armstrong, J. A. Wilson and wife; Dr. Z. T. Miller, wife and daughter.

Reno, Nev.—J. E. Palmer.

Richfield, Utah.—Mrs. Marie M. Johnson.

Richmond, Va.—J. E. Hall.

San Francisco, Cal.—A. E. Duncan, F. H. Lamb.

St. Paul, Minn.—W. Weisel and wife.

St. Louis, Mo.—M. Tully, James P. McClure and wife; Miss Fannie Meyer.

Washington, D. C.—W. E. Peirce.

Winsted, Conn.—C. K. Hunt and wife.

Age always lends a mellowing influence, and the twenty-second annual reunion of the Old Time Telegraphers' and Historical Association and of the United States Military Telegraph Corps, will pass into the history of these societies as one of which the pleasantest memories will always be associated.

Return of Mr. C. H. Mackay.

Mr. Clarence H. Mackay arrived in New York on the Teutonic on Wednesday, September 10th. Mr. Mackay intends to make a brief stay in this country, going to Nevada, there to qualify as an executor of his father's estate, then returning to England, rejoining his mother and accompanying her and his father's body to this city early in November.

No important changes in the management of the Postal Telegraph and Commercial Cable companies are expected to be made. It is understood that Mr. Clarence H. Mackay will carry out his father's policy with the aid of the able managers who have been connected with the companies since their foundation. Mr. George G. Ward, vice president and general manager of the two cable companies, and Mr. William H. Baker, vice president and general manager of the Postal Company, are trusted as fully by Mr. Mackay as they were by his father. Mr. Mackay has not yet announced his plans in detail, and it is not known whether he will follow the example of Mr. George J. Gould and give to the telegraph and cable business and his other large property interests merely such attention and general direction as his ownership demands, or whether he will assume the presidency of one or all of his telegraph and cable companies and devote himself to the routine detail work that is inseparable from the duties of that office.

Directory of Telegraph Organizations.

International Association of Municipal Electricians. Next meeting, Richmond, Va., Oct. 7, 8 and 9.

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Time and labor saved by using Reservoir Pens—non-blotting, latest patent. You can write 500 words with one dip in ink well. 25 cents a dozen. Write to-day, Russel Pen Co., 6608 Ellis Ave., Chicago, Ill.

Gold and Stock Life Insurance Association.

At the special meeting of the Gold and Stock Life Insurance Association, New York, June 23rd, adjourned to July 21st, the amendments to the by-laws, including graded rates, as follows, for new members,

Between 18 and 30, 50 cents per month,
Between 30 and 35, 60 cents per month,
Between 35 and 40, 75 cents per month,
Between 40 and 45, $1 per month,

and as recommended at the last annual meeting, were adopted to take effect January 1st, 1903.

The Telegraph Age.

Entered as second-class matter at the New York, N. Y., Post Office.

Published on the 1st and 16th of every month.

TERMS OF SUBSCRIPTION:

One Copy, One Year, - - - -	$1.50
One Copy, Six Months, - - - - -	.75
Foreign Countries, - - - - -	2.00

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253 BROADWAY, NEW YORK.
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REMITTANCES to Telegraph Age should be made invariably by draft on New York, postal or express order, and never by cash loosely enclosed in an envelope. By the latter method money is liable to be lost, and if so remitted is at the risk of the sender.

NEW YORK, September 16, 1902.

NOTE.—We desire to state that back numbers of this paper, those issued more than six months prior to any current date, will be charged for at the rate of twenty-five cents apiece when they can be furnished. This price is fixed because of the necessarily limited stock we carry, and of the difficulty we commonly have in filling an order. Oftentimes the request is for papers of a more or less remote date, with the expectancy of being supplied at but ten cents a copy, whereas in order to obtain the desired issue we are ourselves frequently obliged to pay the larger sum, or even more. The growing value of complete files of TELEGRAPH AGE should cause our readers to carefully preserve their issues.

The district messenger boy of Chicago is a decidedly uncertain quantity. His proclivity to seek what he asserts to be his "rights" by means of striking has become altogether so monotonous in its frequency, that the Illinois District Telegraph Company of the Windy City, is seeking an antidote for existing evils in the employment of girls as delivery agents. Exactly what success is attending this experiment is not stated, but the vicissitudes of the service may be inferred from the fact that in addition to the girls, grown men have been called in to assist, even officers of the company, so it is said, taking a hand in making the deliveries.

Telegraphic Consolidation Once More.

The oft-repeated story of a telegraphic and telephone merger is once again abroad in the land. The proposition is a big one and the figures are large, for the declaration involves a scheme of consolidation whereby the Western Union Telegraph Company, the Postal Telegraph-Cable Company and the American Bell Telephone Company shall become united in a single so-called trust to be capitalized at the vast sum of $500,000,000. The story has been persistently circulated, and the recent activity, and rise in Western Union stock is pointed out as evidence confirmatory of the truth of the statement. It is also said that the recent death of Mr. J. W. Mackay removes the chief obstacle in the way of this consummation, heretofore deemed insurmountable. While it may be true, possibly, that overtures have been made with such a project of combination in view, it is nevertheless a fact that the telegraph officials emphatically deny the truth of the sensational report. It is almost needless to remark that there is no occasion for any anxiety to be felt regarding the matter. Our telegraph friends should not take too much stock in idle rumors, especially to the detriment of their nerve force, for the earmarks of former canards are but too plainly visible in this instance.

The Importance of Clean Offices.

The personal welfare and healthful surroundings of operators in all telegraph offices ought to be the first consideration of those who are charged with authority. The higher officials are on record as being outspoken in their determination to provide proper working quarters for the men. This is right. Yet, notwithstanding this fact, it is sometimes the case that offices are permitted to lapse into discreditable sanitary conditions, occasionally approaching to actual filthiness. As such they become a reproach to the company whose property they are, emphatically a state that should not be tolerated by executive heads. This trouble, wherever existing, is due primarily to either the carelessness or the incompetency of local managers. It should not be forgotten that the efficiency of the service is best promoted by a ready, willing, healthy and satisfied force. The earning capacity of a telegraph or any other great corporation is largely measured by the condition, physical, mental and moral, of the men employed. Employes are entitled to surroundings that contribute to these attributes of character, to self-respecting manhood. Under adverse environments of the nature indicated, expected results can never be attained, even though the expensive method of employing traffic chiefs to force labor to its utmost capacity be applied.

New Edition of a Popular Book.

The phenomenal sale of "Pocket Edition of Diagrams and Complete Information for Telegraph Engineers and Students" has already made necessary the issuance of a second edition. This is now ready, and is a handsome volume of convenient reference size, embracing 260 pages and 126 splendid illustrations, many of the latter being of full page size. Never before has the subject of the telegraph in its every aspect been treated so thoroughly and interestingly as in this superior work by Willis H. Jones, a telegraph

engineer still in the active business of his profession. It is because it is so completely a guide to every telegrapher in every grade and position in the service that it has attained its sudden and wide popularity. Its genuine worth has been amply attested and endorsed by experts everywhere. Agents for TELEGRAPH AGE unite in saying that the book has been the best seller they have ever handled. It advertises itself, for buyers extol its merits to others. Thanks largely to our friends, it now looks as if every telegraph office in the land would soon have a full complement of this useful volume. As heretofore, all orders will be filled promptly on the day of receipt.

Advancement Gained Only by Hard Work.

Editor TELEGRAPH AGE:

I have read much about the alleged hard lot of operators and managers, individuals who, for one reason or the other, believe they are being overlooked and that the reward of promotion which they think to be their just due is not being meted out to them, or at least not fast enough. My experience is that promotions come slowly to most men and usually only after long years of hard service. Of course, there are exceptions, as there is in everything, but if these exceptional cases are looked into carefully you will find, as a rule, that men, even those who are placed in positions most favorable to attract attention, after all only gain advancement by hard work, no matter what the favoring circumstances may be.

I have in mind a telegraph superintendent who from outward appearances seemed to fairly slide along the track of prosperity and promotion, but I know from personal observation that he worked diligently early and late to build up and master all points of the business of which he was placed in charge, and I honestly believe he has earned all that has come to him. Yet even in his case I hear the inane cry raised of "favoritism."

I think a guiding rule for operators or managers should be to up to date, to work hard regardless of hours (this applies especially to managers), to do their level best, and promotion will be sure to come if they live long enough; and if not, there will be the satisfaction of knowing that their whole duty was performed at all times, something which of itself, to my mind, is worth a good deal. A MANAGER.

August 29.

[We print the above communication with a good deal of satisfaction. It reflects the opinion of a broad-gauged telegraph manager who has himself risen from the operating ranks, and whose several promotions have been fairly earned by personal endeavor. What he says is strictly true. There may be isolated cases of favoritism shown in the telegraph service, but such instances are rare, and the disposition to raise an issue on that score, as is sometimes the case, is downright folly, a sheer waste of time. Any telegrapher who shows intelligence, who applies himself faithfully and who has an endowment of level-headed common sense, one of the most important attributes to any man in the great battle of Life, will come out on top.—Editor.]

Annual Report of the British Telegraphs Shows an Enormous Deficit.

The forty-eighth annual report of the Postmaster General of England, Lord Londonderry, giving statistics up to March 31, and made public on August 15, is an interesting document. It shows that the number of inland telegrams transmitted during the fiscal year was 74,721,194, an increase of 1,536,330 in number. The total receipts for the year were $17,850,230, an increase of $553,465, and the total expenses for the same period were $21,109,260, an increase of $2,122,290. The net deficit was thus $3,259,030 or $1,570,825 more than the previous year. If allowance be made for interest on the capital, $54,338,220, created for the Government purchase of the telegraphs, the deficit for the year is raised to $4,753,330.

As an instance of the work thrown upon the department on special occasions, it is mentioned that the number of words transmitted from London on the evening of June 2, in connection with the announcement of the terms of peace, amounted to nearly 740,000. In the same connection it is recorded that on March 19 a business firm despatched a telegram to 7,720 different addresses. There has been a marked increase in the number of telegrams received and delivered by telephone at the Central Telegraph Office in London. During the past winter the telegraph wires suffered considerably from snowstorms. A particularly destructive storm occurred in December last, and the cost of making good the damage to the lines amounted to nearly $150,000. The effect of these interruptions has been to give greater prominence to the question of providing under-ground, lines. The line between London and Birmingham, 120 miles, proved of great value during the emergency; and the Postmaster General hopes that next year it may be possible to place at his disposal larger funds in order to accelerate the execution of a comprehensive scheme. The London and Birmingham line has already been extended to Stafford, and it will be carried on during the present year to Warrington, where it will join existing underground lines between Manchester, Liverpool, and Chester. The following large centres will then have underground communication with London: Birmingham, Dudley, Wolverhampton, Stafford, Warrington, Manchester, Liverpool, and Chester. Another exposed portion of the telegraph system which is to be protected by placing the wires underground is that between Preston and Penrith. About 34 miles of pipes have already been laid on this route. It is proposed to carry the underground line eventually as far as Lanark, whence branches will be laid to Glasgow and Edinburgh. The next extension will probably be from Manchester to

the principal Yorkshire towns through Bradford and Leeds, and thence to New-Castle-on-Tyne. Although the use of paper-insulated cable has considerably cheapened the cost of under-ground lines, they still involve a very heavy expenditure, and it will be necessary to proceed with caution. The London-Birmingham line cost $825,000, while the contemplated extension northwards will, it is estimated, involve a further expenditure of $3,500,000. In addition to these underground extensions, much is being done to give greater stability to the service by the erection of reserve wires, carried as far as possible by alternative routes. These wires also have proved very useful during the past year.

International Association of Municipal Electricians.

Preparatory to the coming convention, the seventh in the series, of the International Association of Municipal Electricians, which is to be held at Richmond, Va., on Tuesday, Wednesday and Thursday, Oct. 7, 8 and 9, Secretary Frank P. Foster, of Corning, N. Y., has issued a circular of invitation in which the programme of the affair is stated. The papers to be presented are as follows:

"Municipal Inspection and Control," by Walter M. Petty, superintendent of fire telegraph, Rutherford, N. J.; "Relation of Electrical Interests to other Branches of the Muncipality," by Capt. Wm. Brophy, of Boston, Mass.; "Classifying of Records of Electrical Departments and Standard Specifications for Supplies and Contracts," by Edward F. Schurig, city electrician, Omaha, Neb.; "Report of Committee on rules for Electrical Inspection and Control, Especially with Reference to the Occupancy of Streets," by Morris W. Mead, superintendent of the bureau of electricity, Pittsburg, Pa.; "The Telephone Service in Connection with Fire and Police Signal Systems," by Jeremiah Murphy, superintendent of Police Telegraph, Cleveland, O.; "Electrical Government," by A. S. Hatch, assistant superintendent public lighting commission, Detroit, Mich., and "Joint use of Conduits," by Charles F. Hopewell, city electrician, Cambridge, Mass. Mr. Hopewell will also give his admirable "Illustrated Lecture of Fire and Police Telegraph."

The headquarters of the association will be at Murphy's Hotel, Richmond, where officers and committee will be in attendance to look after the welfare of the members and guests.

T. M. B. Association Annual Meeting.

The annual meeting of the Telegraphers' Mutual Benefit Association will be held at 195 Broadway, New York, Western Union Building, on Wednesday, Nov. 19, at 4 P. M. Delegates from many sections of the United States will be present.

The First Atlantic Cable.

BY FRANCIS W. JONES.

August 5th, 1858, forty-four years ago, the first Atlantic cable was landed, connecting Ireland and Newfoundland. The Niagara and the Agamemnon, two steamships, containing sufficient cable to span the ocean between Valentia and Trinity Bay, met in midocean and, splicing the outside ends of their respective sections of cable, proceeded on their courses, the Agamemnon east, the Niagara west, both arriving at their destinations August 5th. A mistake was made in putting armor on the cable so that when making the splice it was discovered that the outer armor wires of each cable met in reverse direction, and a peculiar "ball splice was made and inclosed in a crescent-shaped wooden box about eight feet long, protected by iron boiler plates, and was so lowered into the ocean, 9,000 feet deep. This would make an interesting addition to the curiosities of a museum if some one interested enough to grapple with the subject should recover the unique cable splice. The distance in a direct line over the ocean between the two cable huts is 1,984 miles. The cable paid out by the two ships between the harbors of Valentia and Trinity Bay was 2,267 miles. The total distance covered by the ships was 1,960 miles and the length of cable submerged was 2,267 miles, an excess of 307 miles of cable, or about 16 per cent. of the whole length absorbed by the sinuosities of the bottom of the ocean, which was over 10,000 feet deep for more than two-thirds of the distance.

The core had seven strands of 22 copper, equal to 123 1-3 pounds per mile, insulated with three coatings of gutta-percha to three-eighths inch diameter, weighing 261 pounds per mile, and served with hemp saturated with a mixture of tar, pitch, linseed oil and wax, and then sheathed with eighteen strands each containing seven iron wires of 22 gauge, and the cable weighed, finished, a little over one ton per mile, and a breaking strain of three and a quarter tons. For ten miles from Valentia, and for fifteen miles from Trinity Bay, the shore ends had heavier insulation and armor. The 2,500 miles of cable ordered for this vast undertaking required 119½ tons of pure copper, made into 20,500 miles of wire; 300 tons gutta-percha, 1,687 tons iron, drawn into 367,500 miles of armor wire; 240 tons of tarred yarn, besides tar, etc., and cost nearly $500 per nautical mile at the factory in London.

The simultaneous news in Europe and America on August 5th, 1858, of the landing of the cable resulted in a universal jubilee and extraordinary manifestations of joy everywhere.

The electricians had to contend with hitherto unknown electro-static and other phenomena, and several anxious days were spent in trying to get readable signals through. The first message was hanging on the hook in Ireland. It was from the Queen of England to the President of the

United States. On August 16th part of this message was received in Newfoundland and forwarded by land wires to Washington. It was as follows: "The Queen desires to congratulate the President upon the successful completion of the great International work in which the Queen has taken the deepest interest." It was thought this was a complete message, the curtness of which led the President and others to regard it as a fake. On the following day the President received the delayed part of the message containing the fervent good wishes and courteous expressions of the Queen, and made a suitable reply of 136 words. The cable failed September 1st, after the transmission eastward of 2,885 words and westward of 1,474 words, and was permanently abandoned.

Line Construction.

The Western Union Telegraph Company has issued in pamphlet form certain rules and instructions designed for the government of its construction department. The subject-matter, while tersely expressed, as befitting such a publication, is nevertheless set forth so clearly, and embodies so much information of a character that will be of interest, that TELEGRAPH AGE gladly gives space for the benefit of its wide range of readers in this and succeeding issues, to the more important portions of the subject touched upon. This matter was compiled by C. H. Bristol, the general superintendent of construction of the company, and is the result of his life-long experience in telegraph construction work. It is as follows:

The minimum depth that poles should be set beneath the surface of the ground is as follows (except where rock is encountered at two and one-half feet or less, in which case it is only necessary to set 25-foot poles three and one-half feet, 30-foot poles four feet, and 35-foot poles four and one-half feet in depth):

25-foot poles, 4½ feet;	45-foot poles, 6 feet;
30-foot poles, 5 feet;	50-foot poles, 7 feet;
35-foot poles, 5½ feet;	55-foot poles, 7 feet;
40-foot poles, 6 feet;	60-foot poles, 8 feet.

In wet or marshy locations, or in locations where the ground is likely to be greatly softened by heavy rains, or where it is necessary to set poles on slopes, they should be set at a greater depth than above indicated, the object being to set the poles at such depth that there will be no possibility of their being blown over by any wind, or lifted by frost.

In building a line the tops of the poles should be made wedge shape, so that they will completely shed rain and snow. The bottom of the wedge should be four inches above the top of the upper gain. The direction of the wedge must be in a line parallel with the wires and at a right angle to the cross-arms.

The slant of poles on curves should be gradual, so that the strain on the poles will be evenly distributed. All sharp curves and angles should be well braced or anchored. Braces are preferable where there is room and suitable timber is available. Braces should be set a uniform distance from the butt of the pole, at least six feet when possible, and the top of the brace should be just below the bottom gain.

When necessary to anchor poles (instead of bracing) anchors should be so constructed that the top of the anchor will project a sufficient distance above the ground to admit of properly attaching the guy wire to it. Under no circumstances should the guy wire be fastened to the anchor beneath the surface of the ground.

Office poles should be guyed in such manner as to keep the strain of the wires off the office fixtures and front of building.

Lighting conductors of ordinary line wire will be placed on poles of new lines in course of construction, unless otherwise ordered, as follows:

Lines of one to twelve wires, thirty poles per mile, on every fifth pole, and on office poles; lines of one to twelve wires, thirty-five poles per mile, on every sixth pole, and on office poles; lines of twelve wires and upwards, thirty-five and forty poles per mile, on every tenth pole, and on office poles.

About ten feet of this wire should be formed into a flat coil and placed under butt of pole, the other end of wire to be stretched up the pole and fastened to the same by twelve or more wire staples, and extended seven inches above top of pole with end turned back and fastened to pole, making the projection above top of pole three inches long, and double.

On bracket lines the ground wire should be attached to the pole one-quarter of the way around from the bracket, so that if a second wire is put upon the opposite side, neither of the line wires can touch the ground wire if detached from the brackets. On cross-arm lines the ground wire should be attached to the pole on the side opposite the cross-arm.

In the construction or reconstruction of lines of considerable size avoid the use of high poles to carry the wires over bridges, building, etc., and wherever practicable use short poles and cable.

LOADING AND DISTRIBUTION OF POLES AND OTHER MATERIAL.

Flat cars should be equipped on each side with at least five good hardwood stakes, securely fitted into stake pockets. If gondola or coal cars are used, stakes can be set on inside of the frame or sides, and should be located in such manner that when a pole is rolled from its position to either side of the car it will be stopped by at least four stakes. This applies to poles of 25, 30 and 35-foot lengths loaded on one car. Poles of above lengths should be loaded (without lapping) with ends reasonably even and not extending beyond each other more than a foot at either end of load.

Poles of 40, 45 and 50-foot and longer lengths, which require two cars to carry them, should be so loaded that when a pole is rolled from its position to either side of the cars, it will be protected from falling by at least four stakes.

In all cases where long poles are loaded on two

cars, pieces of timber not less than ten inches in thickness should be placed across the decks of each car midway between the stakes which are to hold the poles on the car. In loading long poles on double cars which have been partly loaded with short poles, there must be a saddle or bolster of timber placed on top of the short poles and securely wired to the stakes, so that it cannot get loose before long poles are loaded. These bolsters must be so placed that the long poles will rest entirely upon them. This will enable double cars to curve without breaking stakes.

When a car is half loaded at least four stakes on each side of the car should be wired to stakes on the opposite side, with not less than four strands of 8-gauge wire. If the car is to go any distance, tie the stakes again when load is completed, with four strands of 8-gauge wire. Should you receive cars of poles for distribution not thus wired you will see that the front and second stakes are safely wired before beginning distribution. When ready to distribute poles, see that front stake extends fully two feet above top of load, and in no case should this stake be cut to the level of the load. The other stakes on car may be kept cut to the level of the load to enable you to roll the poles off.

All poles should be distributed by the use of rope on the front end of pole. This keeps the pole always under control, reduces the danger of accident, and avoids breakage. This rope should be ¾-inch in diameter, with one end fastened to the second stake from the front end of the car on the side opposite to that from which poles are being thrown. The other end should be passed under and over the pole about one-third the way back from the front end of pole, then around the stake and held by a man, while other men roll the pole off the car by the use of cant hooks or peaveys, the slack being let out as required by the man holding the rope. The front end of the pole should be placed at least four feet back or toward the opposite end of the car from which it is to be thrown, with the back end close to the side of car where it is to be unloaded. Then with rope on the pole there is no chance for it to get away and hurt any one as it is rolled off the car. Poles twenty-five to forty feet long can be handled safely in this manner. Longer poles should be handled with two ropes, and the train stopped until the back end of the pole rests on the ground. Three to four stakes should be used on the distributing side of the car, and in no case should the middle ones be removed, as that puts too much strain on front stakes and is dangerous.

Speed of train should not exceed six miles per hour when distributing poles. Where the giving and taking of slack of train is liable to throw men between cars, always cover the opening between cars with boards or arms, or fasten wire or rope across opening to prevent men from falling through to rail if thrown from any cause.

Linemen should not be permitted to distribute poles with less than two men to assist, and where so few men are employed, the car should be placed behind the caboose or be the last car of the train, and the safety stake should be left at least four feet above the level of the load.

In distributing poles, arms, wire or any other material from a moving train, keep a careful lookout ahead in order to avoid accidents to persons or stock, or injury to material or property. One man's entire time should be assigned to this duty.

(To be continued.)

The Use of Slang.

The ancient beacon of the Terrapin, the Baltimore Sun, flares up tremendously because Dr. Granville Stanley Hall, president of Clark University, has told some teachers in Chicago that "boys and girls need slang. It's good for them. Let them use it. It keeps them from becoming tongue-bound.

"If a youngster tells you of a 'hunch' or a 'straight tip' or a 'pipe,' don't correct him. He has found the right word." Whereat there is great flickering of the ancient one.

This is very bad advice. The English language is not so poor as the Clark University professor seems to think. It abounds in words of good origin which will express accurately, graphically and sensibly any idea which a man may desire to clothe in decent garb.

Dr. Hall is not speaking of the language of men, but of the language of girls and boys. Still, a pretty sort of English would be that of the dainty culler and sifter of words, the snob who wouldn't admit to his vocabulary any expression of whose origin and social standing he was doubtful. Words of sap and strength are not to be had by consulting the peerage of vocables. They spring from the soil and street.

It takes an artist to use slang effectively. It may be abused or misused as alliteration or profanity is. The slang of most folks has no edge to it and is wicked, worn and tiresome. There is a fine flash and color to good slang; and almost any slang may be justified as a saver of energy. Translate "hunch" or "straight tip" into the bookish tongue and how much you lose.

Good slang is the enemy of the Circumlocution Office of Speech. One sharp, short, brilliant phrase does duty for a whole squad of malingering and clumsy words. Slang is the pemmican of language.

In Dr. Hall's opinion it is another recommendation of slang that it "aids the young man or woman to acquire fluency." At any rate it enlarges and enriches the vocabulary. Most of us have the same poor little wretched stock of words, and use them over and over again until they are a weariness to our friends and ourselves.

Slang gives variety and adds a wild fresh flavor, supplies the acid and bite, puts bitters into the cocktail. And often it is so relieving.

Take the boys in the Ninth ward, now the capital of philology. Do they want to say that a person is "crazy?" Look at their wealth of

synonyms: "Batty," "bughouse," "daffy," "doty," "nutty." Some time some or all of these gypsies will be burghers with gold chains around their necks.

Children need no encouragement to use slang. They and foreigners learning English here pick up slang first and most easily. Nor will exhortation to avoid slang do any good. It is a part of the children's education. They will use it behind your back if you succeed in restraining them from it when they are before your face. It is irresistible and incorrigible.

We saw such a beautiful and good little boy last Sunday. He had flaxen curls, a shining morning face, a wide white collar such as Rollo, that companion of our youth, used to wear, clothes cleaner than clean.

He must have been going home from Sunday school. He looked as though he had rained down from Heaven. An angelic boy. And he was saying to some invisible, "rock" throwing boy behind the fence, "If I git hold o' you, I'll clump you in the snoot."—New York Sun.

New Western Union Superintendent at Pittsburg.

Mr. E. B. Saylor, who on September 1 assumed the duties of superintendent of the eighth district of the Western Union Telegraph Company, with headquarters at Pittsburg, where he succeeds Mr. J. D. Flynn, resigned, is a native of Canada, his birth occurring in that country in

E. B. Saylor,
New Western Union Superintendent at Pittsburg.

1859. His first appointment in the telegraph service was with the Dominion Telegraph Company as an operator at Jilsonburg, Ont., in 1874. The year following he accepted a position with the Montreal Telegraph Company at St. Clements, Ont., which he soon left to enter the employ of the Grand Trunk Railroad at Gorham, N. H., as an operator, going thence early in 1876, with the Atlantic and Pacific Telegraph Company at Portland, Me. When that company was absorbed by the Western Union Telegraph Company a year later, young Saylor found employment at the same point with the latter, with which thereafter he has since continuously remained. In 1881 he was transferred to the operating department of the Philadelphia, Pa., office, where, in 1884, he was promoted to be night chief, succeeding in 1887 to the position of chief operator. This place he continued to hold through a series of years, until last Spring when he was transferred to the office of the general superintendent in the main office at New York, from whence he has gone to Pittsburg, as before mentioned. Mr. Saylor, who is a zealous and painstaking officer, is conceded to be one of the finest operators in the United States. He is an accomplished electrician, always alert to the best interests of his company, and will no doubt make a favorable individual impression in his new sphere of action. The mantle of superintendent could not have fallen upon shoulders more worthy of the honor, and his hosts of friends in Philadelphia and elsewhere are warm in their congratulations of his preferment.

The Cable.

The Safety Insulated Wire & Cable Company, whose works are now at Perth Amboy, N. J., have just completed six hundred miles of submarine cable for the Mexican Government. The manufacturers have fitted up a cable steamer for the express purpose of laying the cable. This is by far the largest submarine cable ever made in the United States.

According to statistics just issued in Germany the cable system of that country consists of seventy-three lines connecting different parts of the home territory, six with the colonies, and nineteen with foreign countries, making a total of some 17,000 miles. One-third of all the German cables are State concerns, while the other two-thirds are in the hands of private companies.

The Railroad.

Mr. J. S. Evans, at one time superintendent of telegraph of the Nickel Plate, has been appointed trainmaster of the Denver & Rio Grande at Glenwood Springs, Colo.

The Seaboard Air Line telegraph operators in transmitting messages also always send the time the message handled was filed. This practice has been found to add greatly to the value of the telegraph service of this railroad.

New York Visitors.

Mr. H. D. Reynolds, superintendent Postal Telegraph-Cable Company, Buffalo, N. Y.

Mr. W. F. Williams, superintendent of telegraph of the Seaboard Air Line, Portsmouth, Va.

LETTERS FROM OUR AGENTS.

[Advertising will be accepted to appear in this department at the rate of five cents a word, announcements to be enclosed with a border and printed under the name of the place of the advertiser. The special local value attached to advertising of this character will be apparent. Our agents are authorized to solicit advertisements for these columns, and further information on this subject may be obtained on application.]

HOUSTON, TEX., WESTERN UNION.

This office has undergone a complete metamorphosis within the last few months, for Manager Frank Hughes, since his late instalment, has inaugurated many improvements.

Mr. Thomas Young was recently appointed chief operator, Joseph Johns night chief operator and Thomas Walker all night chief, while A. Brooks is the assistant day chief. Your correspondent remembers when only four wires ran into this office; now it can claim a hundred, with more being added constantly. We have the finest switchboard in the South, with a motor generator battery recently installed by Mr. J. C. Barclay, electrical engineer of the company.

Col. T. P. Cook, our general superintendent, paid us a visit sometime since and was shocked at the dingy appearance of the office. The general renovation which has followed his orders is much appreciated; makes us feel more like work. A clean bright office seems to impart energy to the toiling operator. With dingy surroundings he seems to partake of the consequent dullness and dingy atmosphere, and is not the energetic worker as when his environments are more cheerful.

Manager Hughes has used every effort to make the operators comfortable and they evidently value his interest in their behalf. With fans to keep us cool, our office would be fitted with the one thing lacking, and these, the manager declares, shall be in place by next summer.

The receipts of the Houston office have greatly increased; and were greater during a recent three days than in any similar period in its history, with the exception of a few days succeeding the great Galveston storm.

We have a force of thirty operators and Chief Young is casting about for an addition to this number as there are not enough for the work. The busy cotton season has only begun; what will it be when the full force of the crop begins to move?

It would be invidious to mention only a few of our boys, but suffice it to say no telegraph office has a more genial, hardworking, and competent force than Houston. It seems to be the concensus of opinion that Houston is to be the relaying office soon. If so it will naturally require a much larger force to move the business, and would doubtless make Houston the largest office south of St. Louis. So many railroads center in this city that many wires are required to satisfy their demands, and with a present population of nearly 70,000, and a growth faster than that of any city in the South, the business will necessarily increase immensely each year.

J. G. Frankel, our superintendent, is a Texan, and of course all the old Texas operators like him.

BOSTON, MASS.

WOODS HOLE, MASS., MARTHA'S VINEYARD TELEGRAPH COMPANY.

This office was brought into exceptional prominence during the recent mimic war manoeuvers. It was captured by the "enemy," but the docility of its staff secured for them highly magnanimous treatment. A large amount of press matter was dispatched from this office, on each of two consecutive nights, 10,000 words being sent, the quick handling of which elecited much praise from newspaper representatives, and thanks for personal courtesies extended by General Manager H. G. Haddon.

Regarding the general belief that the Western Union and Postal companies are two in name only, a funny incident occurred recently in this office. Blanks of both companies are placed upon the counter so that customers may use either line as they wish. Two New York gentlemen called and started to write messages when one of them interrupted the other drawing his attention to the fact that both company's blanks were here. Turning to the attendant he said: "Is it not unusual to have Postal and Western Union blanks together in one office?" The reply was that it was due to a mutual arrangement, that this was neither a Postal nor a Western Union office, but the office of the Martha's Vineyard Telegraph Company. This explanation did not seem to carry conviction, and on leaving the office the party was heard to say: "This bluff about the Postal and Western Union being separate concerns is all rot. Didn't I tell you the other day that I believed they were all one. Now I am darn sure of it."

The personnel of this office is as follows: Miss Edith E. Wright, manager; Miss Ethel A. Burgess, book-keeper. Summer operators: H. C. Fraser and Henry Behnken. E. Braggs is the messenger and Frank T. Peterson, lineman.

MONTREAL, QUE., GREAT NORTH WESTERN.

Leslie Hall has gone on a short vacation to Iroquois, Ont.

Chief operator Walter Graham is absent on his vacation of two weeks.

Miss Ida Phelan has resigned.

Miss Rose Beaudoin, who has been absent

some time on account of ill-health, has resumed her duties in this office.

A new wire extending from Montreal to Quebec, is nearing completion.

John O'Neill has resigned .

Mr. Mahon and Mr. Byrd are absent on vacation.

Michael O'Reilly, chief of traffic; Thomas Murphy, senior operator for a private firm; George Alexander, Michael Mac-Aneeney, Thomas Power, Great North Western Telegraph operators, and Frederick Lawrence, operator for a broker, all of Quebec, were visitors to this office Labor Day.

Miss Gertie Egli paid a short visit to relatives in Quebec.

QUEBEC, QUE., GREAT NORTH WESTERN.

George Alexander, Mr. McKay and several other operators recently left on a visit to Montreal.

CROWLEY, LA., POSTAL.

The fall season has opened up with a brisk business. We have two "pony" wires running into the office from two of the largest rice mills here and prospects of two more being cut in; this will increase our office force.

Mr. J. F. Bechtel, manager, has resigned to accept a position in the Houston office. Miss G. W. Olsen has been transferred from the Port Arthur office to the position of manager here, with H. B. Nelson, as operator. John Riley and David Wilder messengers, and Miss Effie Durr counter clerk and cashier.

SHREVEPORT, LA., WESTERN UNION.

This office is under the management of Mr. J. T. Patton, a position he has held for a number of years, and he is well and popularly known amongst the business people. The remaining personnel is as follows:

Mr. J. C. Berry, formerly manager at Monroe, this State, chief operator; Mr. Edward J. Norton, formerly of New Orleans, night manager; Edgar Theus, Howard Jackson and John J. Patton, day operators, and R. Scott and James McCoy, night operators; Miss Carrie B. Patton is the receiving clerk and Miss Hutchinson, delivery clerk. At the Phoenix Hotel, Miss Bessie Patton; Union Depot, Mr. Holmes. Hugo Asher is at a pool room, and Mr. W. L. McDonald, The Associated Press.

The cotton season is upon us and our wires are crowded to their utmost capacity, business heavier than in many years.

KANSAS CITY, MO., WESTERN UNION.

On August 27, Frank E. Redline, who for the past fifteen years has held the position of wire chief in this office, bade farewell to his many friends and started for Los Angeles, Cal., where he has accepted a position with the Santa Fé Railway. He was the recipient of several useful tokens as reminders of the esteem and well wishes of those whom he left behind. His oldest son, who preceded him some two years ago, is in quite poor health which influenced him in making the change.

Mr. E. L. Chester, who succeeds to the position of wire chief, has had long experience in the telegraphic profession. In 1879, he opened an office at 7 Merchants Row, Boston, Mass., for the American Rapid Telegraph Company, later being promoted to the position of manager of the Commercial Wharf office. He left there in 1883, going to New York, and two years later came west as far as Chicago. After a few month's employment with the Western Union at that place, he engaged in other business for five years, then came to Kansas City, and again engaged in telegraph work. Three years ago, he was appointed assistant wire chief, which has especially fitted him for the position which he now holds.

C. W. Alexander, night traffic chief, has been transferred to the day force, relieving way chief, C. R. Summers, who takes the position of second assistant wire chief. Both these gentlemen have held their respective positions for the past twelve years.

Mr. J. H. Vogan, takes the position of night traffic chief, being relieved on ways by Paul A. Juvet, newly appointed from the ranks at the key.

Charles E. Thomas, has been placed in charge of the telegraph department, at the Star, vice E. P. McWatty, resigned. Mr. McWatty will for the present make his home in or near Los Angeles, Cal., where his family had preceded him. Ross. G. Wheaton will work second trick under Mr. Thomas.

Among other departures, we note that of Mr. John J. Konter for Pomona, Cal.

Mr. H. B. Cerveny has been appointed manager for this company at Beaumont, Tex., for which place he left September 2, being relieved at the Kansas City stock yards office by Dr. O. R. Crooks. Mr. W. T. Brown relieves the latter as manager at the Mulberry street office, he in turn being superceded by James B. Brown as manager at the Twelfth street office.

Miss Nannie Clapper now waits upon the customers at the Coates Hotel, vice Miss Ora Norman, transferred to main office.

A. R. Young is back at work after a two months' trip to Scotland. He was within one hour's ride of London when news was received of the King's illness and the postponement of the coronation.

Mrs. May Richardson is again at her post of duty at the Coates Hotel, after three months' vacation, which she enjoyed in California.

Assistant Chief Operator, S. W. Atkinson, has returned from a recreative trip in Colorado.

Others returned from vacation are: Mrs. Potter, Mrs. Watson, Miss Effie Forbes, Miss Bessie Goedecke, and Messrs. W. M. Hannon, Wm. H. McKenney and Robt. E. Watson.

Messrs. Fred W. and G. L. McConaha have been called home to Chester, Ill., by the death of their father. Mrs. W. McLaughlin, a sister of the deceased, also accompanied them.

CHICAGO, ILL. WESTERN UNION.

Benjamin F. Powell, Newton Crittendon and Traffic Chief Frank Richardson attended the reunion of the Old Timers at Salt Lake City.

Will B. Paddock, formerly Sunday chief operator and wire chief, at this office, died September 4, after a lingering sickness. He was buried at Cazenovia, N. Y. He leaves a wife who is well known here. Mr Paddock was a faithful official in every capacity in which he served, affable in manner and was considered a man of ability.

Returned from vacations: Assistant division chief Charles White; wire chief Shulkins; chief B. F. McKee, from a brief run to Milwaukee; assistant chief operator C. H. Finley, from a trip up the lake; Annie Morrison, from a visit to her home in Fall River, Mass.; Mrs. Pierce, night time keeper, from a visit to her home in New York; Mrs. Rose and Miss May Gallagher.

The mother of Frank McNellis died September 3.

Mr. William Roach, of the Boston local, nights, has returned after a brief illness.

Former chief operator Webber of Springfield, Ill., has been stationed here in the capacity of wire chief at west board. Mr. Webber has always been a favorite with the Chicago chiefs, for while at Springfield, his efficient services and quick manipulation of circuits,during trying moments, were freely recognized.

W. H. Sievert, manager at Elgin, Ill., recently renewed his subscription for TELEGRAPH AGE, and purchased a copy of Phillips' Code. He says he wants to keep in touch with the "latest".

Harry Church, of Council Bluffs, Ia., was a recent visitor, and left an order for a copy of "Pocket Edition of Diagrams," etc.

CINCINNATI, O., WESTERN UNION.

The advancement of Manager C. E. Page of this office to the position of superintendent at Boston brings to us a manager in the person of Mr. R. C. Bliss, formerly manager at Springfield, O., and a genial, whole-souled gentleman. Both promotions were strictly a reward of merit. Mr. Page was presented on his retirement with a handsome loving cup, a token of esteem from his former employes and co-laborers. Superintendent Miller made the presentation speech in his usual happy manner. Mr. C. H. Woellner, for a number of years solicitor for the Western Union here, will accompany Mr. Page to Boston, where he will possibly occupy the same position.

Mr. F. D. Duckett goes to Cambridge, Mass., as manager, and his brother, Mr. H. L. Duckett, will accept a position as operator in the main office at Boston.

Mr. Wm. Barth, at present manager of the office at the Grand Central Depot here, goes to Fall River, Mass., as manager in the same interests. Other changes, it is believed, will follow.

Miss Rice, Miss Gallagher, Miss Geisenhofer, Miss Tozzer and Messrs. Connolly, Colligan, G. Derfus and J. Stangle have recently returned from their Summer's outing; in fact, nearly all the wanderers have returned.

Business is very heavy, and those on the waiting list are making full time and doing quite a good deal of "scooping."

PHILADELPHIA, PA.

POSTAL.

Vacations are on the ebb. Almost every one who intended going has already done so, and the few remaining have deferred their trips for the cooler months for various reasons. Cashier George G. Glenn philosophically asserts that he can perspire at home as well as at a Summer resort, and claims one can take recreation and rest in September or October as well as in July. Acting, doubtless, upon this suggestion, Chief Operator C. A. Stimpson selected September as his outing time, embracing the opportunity to take the trip to Salt Lake City with the Old Timers to attend their annual reunion held at that place. Mr. Stimpson is accompanied by his wife.

Manager Charles E. Stump, of the Fish District office, with Miles E. Dunn, wire chief at the main office, went to Maine.

Manager W. S. Sullivan essayed to reach Duluth via the lake route from Buffalo, but a distressing festering gathered in his ear and compelled him to place himself in the hands of specialists, who succeeded finally in relieving him of his trouble.

Traffic Chief Geo. W. Dunn has returned from a pleasant stay at Mt. Pocono, Pa.

Acting as substitute for the operator at Baldwin's Locomotive Works, Mrs. M. E. DeGinther, in charge nights at the Broad Street Station office, found a pleasant intermission from her trying duties. She was relieved at the station by Mr. C. C. Figgs.

Our sincere sympathy is extended to Mr. Frank L. Scott, of the North Front Street office, who has just buried his mother from her home in Delaware. Mr. M. A. Auerbach acted as Mr. Scott's relief during his absence.

Consequent to a severe spell of sickness, Mr. Geo. W. Layton, in charge at the Ledger office, has been ordered away for recuperation and rest. Pending his return Mr. Thomas Poppert assumes Mr. Layton's duties, assisted by N. F. Wright.

Mr. Earl W. Miller, assistant at the Board, nights, accompanied by Mr. Wm. Bowers, are still among the vacation absentees.

Our old friend Michael O'Donnell, now of the

New York Journal's staff of operators, paid us a visit recently.

Electrician J. F. Skirrow, of the New York main office, did not fail to drop in and excite the envy of the less fortunate who gazed upon his smiling and healthful countenance.

New arrivals have been numerous since our last letter, among them the Messrs. H. H. Matthews, W. Delaney, H. Goldberg, H. Koeberle, J. A. Peters, W. C. Ash, H. E. Owen, W. H. Duckett, J. F. Burke, J. A. Golden and L. S. Abram.

NEW YORK CITY.

WESTERN UNION.

The southern division has been abolished, or perhaps it would be better to say, it has been included in the eastern division. The districts eastern and southern have been renumbered. There are now eleven districts in the new eastern division, and Mr. B. Brooks is the general superintendent.

Mr. E. P. Griffith, inspector, was assigned to the President's party, which recently made the tour of New England.

N. B. Topping, Jr., the son of N. B. Topping, the well-known old-timer of this office, has been appointed to a position on the waiting list.

Thomas Nolan and J. J. Hornett have returned from the Long Branch, N. J., office, where they have been employed during the past season. Chief Operator Martin Durivan of that office will also return shortly and resume his old position in this department.

F. P. Kelly, G. B. Guthrie, C. W. Dean and J. F. Hopkins have resigned.

Mr. F. D. Stevenson, night city chief, has also resigned. He will go with a brokerage firm.

For the benefit of telegraphers who are members of the order, the Woodmen of the World, under the auspices of Seawanhaka Camp, No. 19, of Brooklyn, N. Y., largely made up of telegraphers, will unveil a monument in Cypress Hills Cemetery, Brooklyn, on Sunday, September 21st, at 2 P. M. (A monument is erected at the grave of every deceased Woodman.) Addresses will be made by Sovereign Commander J. C. Root, of Omaha; General State Deputy Barnes and Walter C. Burton, of 195 Broadway. There will be vocal music by the Arion Quartette, and the Letter Carriers' Band, of 42 pieces, will discourse the regulation instrumental music. The ritualistic work of the Woodmen in the unveiling ceremonies is unsurpassed, and will be rendered by a team from Bridgeport, Conn.

Mr. Russell D. Riley, wire chief on the southern switch, and one of the best known men in the service, has resigned to enter other business.

Mr. F. E. Coyle, for many years private secretary to General Superintendent Merrihew, who recently resigned, has been appointed assistant chief clerk in General Superintendent Brooks' office.

POSTAL.

Frank McKiernan is spending his vacation by attending the Old Timers' Convention at Salt Lake City, Utah.

The following named persons have returned from their vacations: J. G. Pierce, J. F. Stevens, R. F. McKune, N. E. Popp, E. J. Liston, J. G. Good and T. J. Flynn.

Resignations: J. J. Woodford, D. J. Nugent and M. J. Moran.

Miss Avis Gibney has resigned and accepted an engagement with a Boston theatrical company. She was formerly with the Western Union at San Francisco and the Postal at Chicago, but for the last two years has been in this office. Her friends wish her success in her new undertaking.

Samuel F. Campbell of this office, a resident of Elizabeth, N. J., was married to Miss Ethel West, of Long Branch, N. J.

The Postal main office baseball team defeated the semi-professional Niagara team in a recent match by a score of 8 to 7. Operators Roesner, Ferguson, McAteer and Sullivan deserve great credit for their all around good work.

AT SALT LAKE CITY.

The Old Time Telegraphers' and Historical Association and the United States Military Telegraph Corps.

When Salt Lake City was named last year, at Montreal, as the meeting place for 1902 of the associations above named, whose joint reunions, always a delightful feature in their history, are becoming venerable by reason of the number of years now placed to their credit, it was thought by some that the westward limit of locality had been overstepped. Omaha, St. Paul and Minneapolis had hitherto marked the line of demarkation in that direction, but when the Old Timers' consulted the map of the United States and observed that after all Omaha occupied but a centrally located position in this great country, it was deemed to be but simply a matter of patriotism, a debt due to Far Western members, to break away from the effete East and go a-journeying still further into the West, over the wide prairies, even out to where the wild Rockies rear their rugged and towering forms. Besides, was not George H. Corse, who had been elected to the presidency, a resident of that Far West! It was but an act of courtesy, therefore, to go out to the home of one who had consented to stand at the head of the organization. And so it was that Salt Lake City, the storied town of Mormonism, was named.

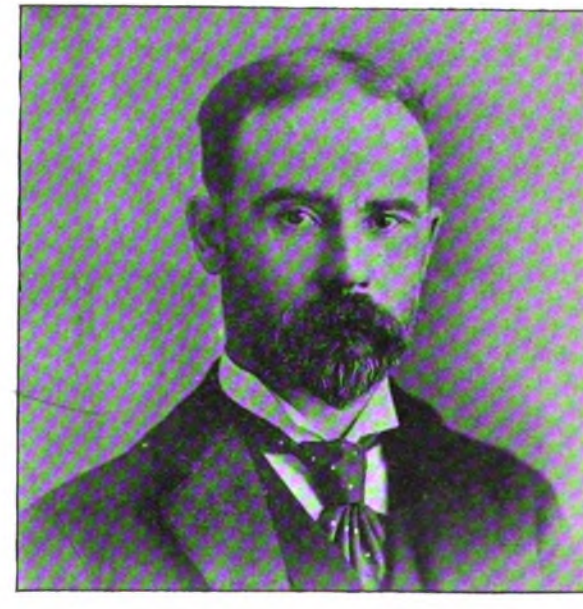
U. J. FRY, OF MILWAUKEE, WIS.,
President-elect The Old Time Telegraphers' and Historical Association.

So far as the Military Telegraphers' were concerned they would go wherever the Old Timers' might lead, for the question of a new president or of locality, outside of Philadelphia, of course, never enters as a determining factor into their councils, Col. Wilson holding his position in virtual perpetuity.

Salt Lake City burst like a beautiful vision upon the delighted senses of the journeying telegraphers when they reached that historic spot. The "unknown" of our childhood days, revealed, not a wilderness, but a highly cultivated country and an attractive city vested with all the conveniences of modern improvements. Nor was there a Bluebeard in the shape of Brigham Young to demand a toll of the new comers before entering his domain. Only a hospitable committee appeared to meet the strangers and bid them welcome. The peacefulness of the situation was an agreeable refreshment; the novelty of the surroundings and the relief felt at the ending of long railroad rides as the excursionists emerged from the cars, was generally remarked; and when the Kenyon Hotel was reached, the point where all were to meet in reunion as well as to find a sleeping place for the three or four nights to be spent in Salt Lake City, congratulations were exchanged and preparations for the brief sojourn perfected.

The New York party which left that city on the evening of Friday, September 5, was made up of a congenial company, and the nearly four days of transit gave ample leisure and opportunity to renew many old time acquaintances.

Delegations were present also from all parts of the country, and familiar faces from the Pacific Coast States, the New England States, the cities of New York and Chicago, and from other points, were everywhere noticeable. It was an eminently companionable crowd when all were assembled.



W. J. LLOYD, OF CHICAGO,
Vice-President-elect of The Old Time Telegraphers' and Historical Association.

On Wednesday morning, September 10, at ten o'clock, an informal meeting of the Old Time Telegraphers' and Historical Association and of the United States Military Telegraph Corps, was

held, thus giving all visitors an opportunity to meet each other socially. An enlivening half hour followed. This over, the business meeting of the Old Timers' was called to order at half past ten o'clock by President Corse. The minutes of the Montreal meeting having been previously distributed among the members their reading on this occasion was accordingly dispensed with. Mr. John Brant, of New York, the secretary-treasurer of the association, then read his report. It showed a cash balance on hand of $817.08, a substantial increase over the previous year.

The secretary in his report suggested that the by-laws of the association be changed making it necessary for an applicant to have been in the telegraph service for at least five years in order to make him eligible to membership.

Many letters extending courtesies to the visiting telegraphers were read and ordered printed, and the thanks of the combined associations were voted in reply.

A resolution of condolence was extended to Col. J. J. Dickey, superintendent of the Western Union Telegraph Company, at Omaha, Neb., on the death of his son, which occurred on September 6.

A resolution was passed thanking Col. R. C. Clowry, president of the Western Union Telegraph Company, for courtesies extended.

The delegates were cordially welcomed to Salt Lake City by the Rev. A. P. Simpkins in an exceedingly graceful speech, which was most fittingly responded to by Mayor Cochrane, of Montreal, a delegate from the Canadian city.

Walter C. Burton, of New York, presented the Morse badge to President Corse.

The election of officers for the ensuing year resulted in the selection of U. J. Fry, of Milwaukee, Wis., president; of William J. Lloyd, of Chicago, vice-president, and of John Brant, of New York, secretary-treasurer.

Mr. Fry is the superintendent of telegraph of the Chicago, Milwaukee and St. Paul Railway; Mr. Lloyd is the assistant superintendent of the Western Union Telegraph Company, and John Brant, who is returned to his old position in which he has served with such acceptance for a number of years, is a well known Western Union operator.

Milwaukee, Wis., was selected as the next place of meeting.

When the Old Timers had concluded their meeting, the United States Military Telegraphers assembled for their business conference. In the absence of President Wilson, Senator W. L. Ives of New York, the vice-president, presided, and John Wintrup of Philadelphia, acted as secretary. Col. Wilson's report which was read, is as follows:

"The last session of the society was held in the shadow of a great national calamity; the President of the United States had been stricken by the dastardly hand of an assassin, and was on his death bed. Your message of sympathy, sent from Montreal, did not reach his eyes, but after his death, Mrs. McKinley acknowledged it in words of appreciation.

"The doings of the society for the past year have been fair and unimportant. Upon the opening of the last session of Congress, I went to Washington, and after a careful review of the legislative field, became thoroughly convinced that any effort during the present Congress towards securing further legislation in recognition of our just and free claims would be futile, and I, therefore, did not call into active service the committee on Congressional action, which is composed of our ablest and most influential members.

"There is, as there has been for the past twenty years, an element in both Houses of Congress, which, while not openly opposing our claims, yet by some occult power has exercised an influence against them. Happily, this influence is becoming weaker and it is to be hoped will soon disappear. Without any person in either house to personally champion our cause, since the death of the lamented Senator Davis, and the great National and International questions, both political and economical, which, with irresistable force command the almost exclusive attention of this Congress, I would recommend that no further appeal to the National Legislature be made until the next Congress convenes in December, 1903.

"In the meantime it would be well for our members to keep in touch with the congressmen to be elected this year and get them personally interested in our cause. It. also. seems to me to be advisable that some one member of our society should be appointed to lay our case before President Roosevelt and endeavor to get him interested. I know of no one so able and competent to act as such an envoy as Major Rosewater of Omaha, and I would be pleased, if you would confirm my judgment, by his selection for that commission.

"Our numbers are steadily decreasing. To the long list engraven on our memorial column must be added the names of John H. Emerick, W. J. Bodell, R. S. Gough, A. C. Knapp and the ever genial E. P. Whitford, who died during the past year. Brave boys, all, who served their country well, and after long and useful lives, went down to their graves without receiving from that country, their well-merited rewards. Peace be with them."

Following President Wilson's report came the election of officers, which resulted in returning the former incumbents: Col. William B. Wilson, of Philadelphia, president; W. L. Ives, of New York, vice-president, and J. E. Pettit, of Chicago, secretary and treasurer.

The Ladies' Reception Committee were assiduous in their attentions to the ladies of the party, and in numberless ways contributed to their comfort and pleasure.

Too much praise cannot be accorded to the

several committees appointed to look after the interests of the visitors. They more than fulfilled all expectations; with unfailing courtesy their attentions were constant, contributing in many, and often unlooked for ways, to the personal comfort of the individual. No company of men and women could have been more cordially received, and guests carried away with them a sense of hospitality conferred that will remain a lasting and a delightful memory.

The membership of these committees were made up as follows:

Transportation Committee.—T. M. Schumacher, C. A. Tripp, C. A. Walker, L. L. Downing and Donald Rose.

Hotel Committee.—George C. Fenton, C. F. Warner, R. S. Campbell and I. H. Lewis.

Reception Committee.—C. B. Horton, Arthur W. Copp, J. B. Twiford, and Samuel F. Fenton.

A feature of the occsion that excited pleasurable comment was the distribution among the guests by Mr. W. E. Pierce of Lynchburg, Va., copies of a photograph of the house at Appomattox, Va., in which General Lee surrendered to General Grant at the close of the Civil War. The picture was taken by Mr. R. W. A. Horner, manager of the Western Union Telegraph Company at Lynchburg, a gentleman who was born in the historic dwelling.

The entertainment of the telegraphers was planned on a generous scale and carried out in the true spirit of genuine Western hospitality. But few of the excursionists had previously visited Salt Lake City, consequently every scene was new to the great majority, and the zest with which all entered into the spirit of the moment was continually made manifest. The drive and strolls about the city; the visits to the great tabernacle with its famous organ, to a recital on which all listened; an inspection of the Mormon temple and its beautiful grounds; the trip to Saltair on Great Salt Lake, the chief watering place of Salt Lake City; and above all the excursion out to the celebrated Ogden Canyon, will all remain as delightful features of a reunion in many respects the most unique in all the long history of the associations' meetings. The most pronounced social event, however, was the banquet at the Kenyon Hotel on the evening of Thursday, September 11, when a large number sat down to one of the most successful dinners ever given in Salt Lake. The scene presented was a brilliant one, good cheer abounded and the old time telegraphic spirit of fraternity asserted itself in generous measure. This was shown in the character of the numerous toasts proposed and in the warmth and wit of the responses elicited thereby. Letters of regret were read from some who were obliged to be absent, happiness prevailed, and the hour was late when the festal scene was finally brought to a close.

The toastmaster at the banquet was Judge Powers, who filled the position with great acceptability. Speeches were made by President Corse, Mayor Cochrane, of Montreal; Mrs. John Costelloe, James R. Beard, Walter C. Burton, Senator W. L. Ives, and M. J. O'Leary, of New York; H. W. Pope, of Buffalo, N. Y., Joseph Uhrig, of Chicago, and P. M. Collins.

Among those present were:

Boston, Mass.—G. H. Yetman and wife; H. W. Gillespie, John H. Connors.

Burlington, Vt.—John K. Butler and wife.

Bangor, Me.—P. J. Feeney and wife.

Buffalo, N. Y.—H. W. Pope.

Borden, Va.—W. G. Moffett.

Chicago, Ill.—E. G. Sheckler and wife; John S. Henderson, E. S. Hughen, R. G. Davidson, Joseph Uhrig, J. Newton Crittenton, L. W. Marston, F. L. Jacobs, D. S. Anderson and wife; Fred. M. Randolph and wife; F. Richardson and wife; F. L. Hanley, W. B. Dougall, B. F. Powell.

Cumberland, Md.—C. H. Meyers and wife.

Columbus, O.—O. H. Newell and wife.

Cheyenne, Wyo.—Mrs. Fannie M. Merrifield.

Cleveland, O.—W. A. Manning and wife.

East Liverpool, O.—W. E. Richey and wife.

Gadsden, Ala.—R. L. Adams and wife.

Helena, Mont.—P. M. Collins, W. E. Newcombe.

Hilliard, Wyo.—G. W. Carleton.

Johnstown, Pa.—Peter Weitz and wife.

Jersey City, N. J.—J. B. Bertholf.

Montgomery, Ala.—D. C. Sims and wife.

Minneapolis, Minn.—I. McMichael, J. P. Cassidy and wife; D. G. McIntosh and wife.

Montreal, Que.—Hon. James Cochrane, Mayor of Montreal, and wife; F. H. Waycott, wife and son.

Mount Pleasant, Pa.—Joseph Landis.

New York, N. Y.—W. C. Burton, J. B. Taltavall and wife; John Brant and wife; James R. Beard, John Costelloe and wife; Fred. Pearce and wife; M. W. Rayens, M. J. O'Leary and wife; F. E. McKiernan, A. E. Price and wife; J. A. Regan, C. A. Hicks and wife; Senator W. L. Ives, F. D. Murphy and wife.

Newark, N. J.—Adam Bosch and wife; J. A. Sutherland.

New Canaan, Conn.—L. Monroe, Jr.

Nashville, Tenn.—John F. Fleming.

New Orleans, La.—H. F. Farmer, N. T. Petrich.

New Haven, Conn.—E. B. Baker.

Newbern, N. C.—Geo. Henderson and wife.

Newark, O.—Charles A. Anderson.

Piedmont, W. Va.—Geo. W. Harrison.

Philadelphia, Pa.—John Wintrup and wife; J. E. Janney and wife; C. A. Stimpson and wife.

Paterson, N. J.—J. E. Dunning and wife.

Pittsburg, Pa.—F. J. McKenna and wife; W. A. Case and wife; J. W. Stump and wife; C. R. Stough, P. J. McKeever and wife; C. A. Mitinger, J. E. Rowe, E. J. Kirby, F. J. Armstrong, J. A. Wilson and wife; Dr. Z. T. Miller, wife and daughter.

Reno, Nev.—J. E. Palmer.

Richfield, Utah.—Mrs. Marie M. Johnson.

Richmond, Va.—J. E. Hall.

San Francisco, Cal.—A. E. Duncan, F. H. Lamb.

St. Paul, Minn.—W. Weisel and wife.

St. Louis, Mo.—M. Tully, James P. McClure and wife; Miss Fannie Meyer.

Washington, D. C.—W. E. Peirce.

Winsted, Conn.—C. K. Hunt and wife.

Age always lends a mellowing influence, and the twenty-second annual reunion of the Old Time Telegraphers' and Historical Association and of the United States Military Telegraph Corps, will pass into the history of these societies as one of which the pleasantest memories will always be associated.

Return of Mr. C. H. Mackay.

Mr. Clarence H. Mackay arrived in New York on the Teutonic on Wednesday, September 10th. Mr. Mackay intends to make a brief stay in this country, going to Nevada, there to qualify as an executor of his father's estate, then returning to England, rejoining his mother and accompanying her and his father's body to this city early in November.

No important changes in the management of the Postal Telegraph and Commercial Cable companies are expected to be made. It is understood that Mr. Clarence H. Mackay will carry out his father's policy with the aid of the able managers who have been connected with the companies since their foundation. Mr. George G. Ward, vice president and general manager of the two cable companies, and Mr. William H. Baker, vice president and general manager of the Postal Company, are trusted as fully by Mr. Mackay as they were by his father. Mr. Mackay has not yet announced his plans in detail, and it is not known whether he will follow the example of Mr. George J. Gould and give to the telegraph and cable business and his other large property interests merely such attention and general direction as his ownership demands, or whether he will assume the presidency of one or all of his telegraph and cable companies and devote himself to the routine detail work that is inseparable from the duties of that office.

Directory of Telegraph Organizations.

International Association of Municipal Electricians. Next meeting, Richmond, Va., Oct. 7, 8 and 9.

Don't borrow your neighbor's paper; subscribe yourself for TELEGRAPH AGE. You can't afford to be without it.

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Time and labor saved by using Reservoir Pens—non-blotting, latest patent. You can write 500 words with one dip in ink well. 25 cents a dozen. Write to-day, Russel Pen Co., 6608 Ellis Ave., Chicago, Ill.

Gold and Stock Life Insurance Association.

At the special meeting of the Gold and Stock Life Insurance Association, New York, June 23rd, adjourned to July 21st, the amendments to the by-laws, including graded rates, as follows, for new members,

Between 18 and 30, 50 cents per month,
Between 30 and 35, 60 cents per month,
Between 35 and 40, 75 cents per month,
Between 40 and 45, $1 per month,

and as recommended at the last annual meeting, were adopted to take effect January 1st, 1903.