TELEGRAPH AGE

A Semi-Monthly Journal Devoted to Land Line Telegraphs, Submarine Cable Interests and Radio-Telegraphy

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No. 17. NEW YORK, SEPTEMBER 1, 1908. Whole No. 607.

COMMERCIAL AND RAILWAY TELEGRAPH SERVICE.

This new edition of "The Modern Service of Commercial and Railway Telegraphy," by J. P. Abernethy, revised and brought up to date by the company that bears his name, starts in with the primary principles and instruction for beginners, including valuable hints relating to penmanship, the work proceeding in the form of questions and answers to make the subject of electricity and its uses as plain as possible, treating of electricity in general, the action and composition of batteries and their application to telegraphic purposes. The relation of circuits and the various instruments employed, including the duplex and quadruplex systems, construction of lines, interruptions of and the means of locating the same, the telephone, the stock ticker, submarine telegraphy, etc., is fully discussed, followed by complete information regarding commercial and railway telegraphy in all its details, and concluding with much valuable and desirable information regarding the duties of railway station agents, express agents and station employees. The book contains 424 pages, 72 more than in previous editions. The price is $2, which includes carrying charges. Address J. B. Taltavall, TELEGRAPH AGE, 253 Broadway, New York.

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This great work, by the late James D. Reid, the "father of the telegraph," furnishes an authentic and complete history of the telegraph, tracing out its early start, its development, the organization of the various telegraph and cable companies, etc. The book is bound in morocco, has 846 pages and is abundantly illustrated; a magnificent gift to any telegrapher. There are now but a few copies left of this great work and when these are gone it will be out of print. The original price was $7, but as the covers are a little shopworn the price has been reduced to $5. Address J. B. Taltavall, TELEGRAPH AGE, 253 Broadway, New York.

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"Pocket Edition of Diagrams and Complete Information for Telegraph Engineers and Students" is acknowledged on all sides to be the standard work of the telegraph. Speaking strictly within bounds, it is not too much to say that this volume presents the finest study of the complex subject of the telegraph ever attempted. There is no other book like it or even approaching it, in thoroughness, comprehensiveness, or in original detail of statement. The author, Willis H. Jones, is a practical telegrapher himself—an engineer in his profession of recognized ability, who knows exactly what other telegraphers want to know, and has the faculty of imparting that knowledge in a manner at once so clear, so simple, so bright, so entertaining, so free from needless technicalities, that his readers, even the least informed among them, readily understand his meaning. The helpful qualities of the work will be clearly manifest alike to the beginner, to the student, to the operator and to all telegraphers whether in the commercial or in the railroad service.

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The popularity of the Phillips Code, by Walter P. Phillips, was never more apparent than at the present time. Its acceptance by the telegraphic fraternity, as a standard work of the kind, dates from its first publication, and the constantly increasing demand for this unique and thoroughly tested method of shorthand arranged for telegraphic purposes, has necessitated from time to time the issuance of several editions. The present edition was carefully gone over under the supervision of Mr. A. P. Velie, an expert press and code operator, for many years identified with The Associated Press, New York, a few revisions made and a number of contractions added, until now this "stanch friend of the telegrapher" is strictly up-to-date in every particular. It has been declared that an essential qualification of a "first-class operator" was a thorough understanding of Phillips Code.

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"Sketches Old and New," by Walter P. Phillips, is a handsomely bound volume of 164 pages of interesting and charmingly told telegraph stories; one of the very best works of the kind ever published and which will appeal strongly to every telegrapher; price $1.

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The amount of information contained in each issue of TELEGRAPH AGE of the utmost practical value to the progressive operator who is ambitious to succeed, to acquire a more thorough knowledge of his profession, and not only to better qualify himself for the position he now occupies, and consequently for advancement, should prompt many to send in their subscriptions to this journal without delay. The first article in each issue, contributed by Willis H. Jones, under the standing head of "Some Points on Electricity," contains more positive instruction concerning the telegraph, than can be found anywhere else, and is worth more to the operator than many times the cost of the paper itself. Subscriptions should be sent direct to this office, or to any of our agents, who may be found with both the Western Union and Postal companies in nearly every large center in the United States.

No telegrapher, no matter what his position may be, who values his place and aspires for promotion based on all-around practical knowledge, can afford to be without "Pocket Edition of Diagrams and Complete Information for Telegraph Engineers and Students." See advertisement.

TELEGRAPH AGE

No. 17. NEW YORK, SEPTEMBER 1, 1908. Twenty-fifth Year.

CONTENTS.

SOME POINTS ON ELECTRICITY.

The Mercury Arc Vapor Rectifier.

BY WILLIS H. JONES.

A rectifier, as the name implies, is something that corrects what is wrong.

In the electrical line it is a device by means of which electric impulses which normally flow in a wrong direction are for practical purposes caused to alter their course and travel in the route of usefulness. In other words the rectifier creates direct currents out of alternating currents and is therefore a very useful and necessary piece of apparatus for telegraphic purposes in localities where alternating currents only are to be found, as is the case in many small towns, where electric light and power companies supply nothing else.

As the rectifier is rapidly being installed at various places throughout the country for the purpose of providing direct currents for local batteries, charging storage batteries, etc., a description of and its mode of operation may be interesting to those who have to handle it.

The rectifier proper consists of a mercury vapor arc enclosed in an exhausted glass tube, the general shape and appearance of which is shown in Fig. 1. It possesses four metal-tipped legs, three of which are connections for graphite anodes and one for a mercury cathode. A few words concerning the theory involved in the operation of the rectifier will explain the necessity for more than one anode.

It seems that mercury vapor normally possesses so great a resistance to the passage of a current through it that it practically constitutes an insulator except for exceedingly high voltages regardless of the polarity thereof. Yet it is nevertheless possible through a certain treatment of this vapor to create therein a condition whereby it becomes a good conductor for currents in one direction only, while at the same time preserving its original attitude of opposition to currents headed in the opposite direction. This condition is created by simply using a mercury electrode for the cathode. With this arrangement the vapor becomes ionized and in that state allows the passage of a current through it, but, as previously stated, in one direction only. Ionized vapor also enables comparatively low voltages of one polarity only to sustain the necessary arc required in

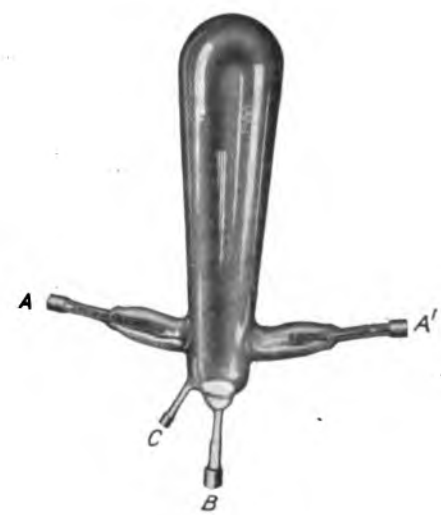


FIGURE 1—THE RECTIFIER TUBE.

the tube and in like manner persistently ignores the opposite impress of the reversed polarity.

Now the "right of way" this treated vapor prescribes for the passage of a current through its domains, is strictly from the positive source anode to the cathode, and as the two terminals of the supply transformer coil alternately become positive with each half wave, a second anode is obviously required in order to catch the positive supply at the other terminal, to which point it jumps, and thus continue the same polarity of current through the cathode and external circuit during the complete cycle. Hence two anodes are required in order that the cathode may be constantly in connection with the positive supply regardless of which terminal of the transformer coil that polarity happens to be.

It will thus be seen that the rectifier utilizes and derives the benefit of a full electric wave instead of half of it as might be expected. The resulting current is, therefore, unidirectional because the positive polarity supply alone is constantly pursued from one terminal of the transformer coil to the other as the alternations occur and thus relentlessly pressed into continuous service.

THE ARC AND REACTANCE COILS.

Obviously the continuity of the arc during the complete cycle must be preserved in order to maintain a continuous flow of current.

Now while a comparatively low voltage will sustain it, the pressure gets so low at or near the instant the current in reversing passes the zero point that the arc will die out unless a compensating remedy is provided for the purpose of bridging over the gap thus created.

This feat is accomplished by means of a duplicate set of reactance coils, one for each arm of the circuit, the reactance of which causes a like-directed current of its own creation to temporarily replace the vanishing current and thus sustain the arc until the new wave from the transformer has had time to again build up to an efficient value and resume duty.

The reactance current also tends to smooth out the wave which would otherwise be pulsatory in nature with very abrupt breaks.

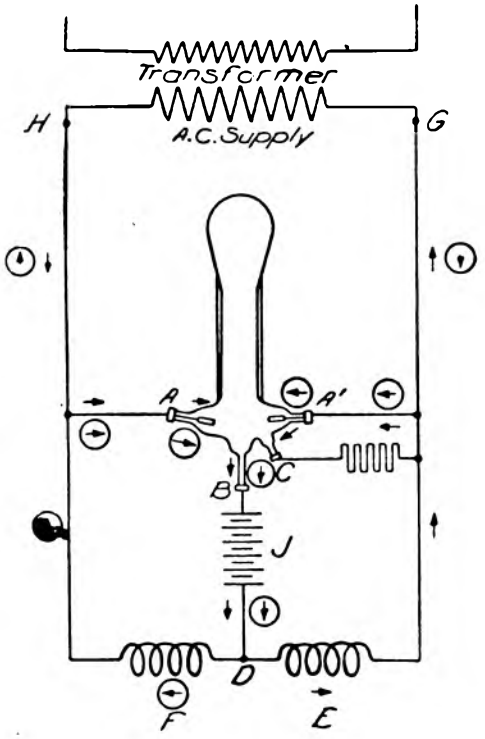


FIGURE 2—THEORETICAL CONNECTIONS.

The operation of the mercury arc rectifier will be understood by the following description given by the General Electric Company, shown in Fig. 2. Assume an instant when the terminal H of the supply transformer is positive, the anode A is then positive and the arc is free to flow between A and B, B being the mercury cathode. Following the direction of the arrows still further, the current passes through the load J, through

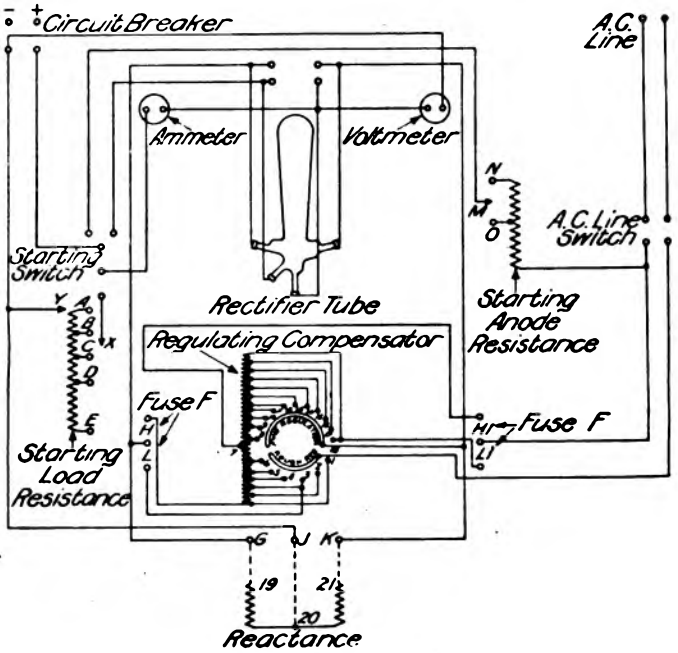


FIGURE 3—ACTUAL CONNECTIONS.

the reactance coil E and back to the negative terminal G on the transformer. A little later, when the impressed e.m.f. falls below a value sufficient to maintain the arc against the counter e.m.f. of the arc and load, the reactance E, which heretofore has been charging, now discharges, the discharge current being in the same direction as formerly. This serves to maintain the arc in the rectifier until the e.m.f. of the supply has passed through zero, reverses and builds up to such a value as to cause A' to have a sufficiently positive value to start an arc between it and the mercury cathode B. The discharge circuit of the reactance coil E is now through the arc A', B, instead of through its former circuit. Consequently the arc A', B is now supplied with current, partly from the transformer and partly from the reactance coil E. The new circuit from the transformer is indicated by the arrows enclosed in circles.

Figure 3 is a diagram of the mercury vapor rectifier showing the actual connections and means for arranging the resistance for different outputs.

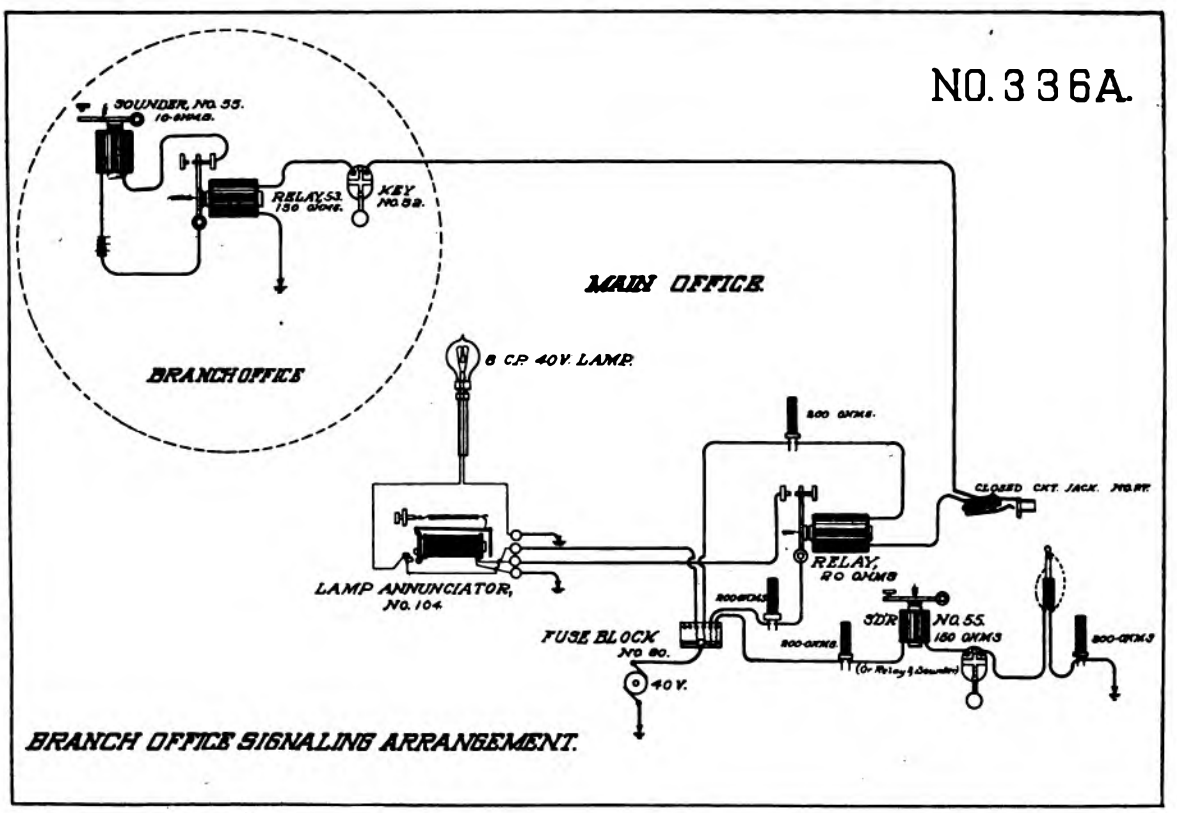
Printed instructions explain how to make the combinations for a given output by connecting certain numbers together.

Postal Telegraphic Apparatus.

[Under this head there will frequently appear in Telegraph Age an illustration and descriptive account of some feature of the equipment of the Postal Telegraph-Cable Company, prepared by John F. Skirrow, associate electrical engineer of the company.]

The accompanying diagram shows a method employed by the Postal Telegraph-Cable Company for operating short wires from a main office to branch offices, where the service is such that an operator is not assigned to the circuit continuously. It will be seen that the arrangement is such, however, that the system can be applied to any circuit.

A lamp annunciator is placed upon the operating table at the main office. This annunciator is



controlled by a back contact relay. When the line circuit is opened at the branch office the armature of this relay falls back causing the annunciator to drop and light the lamp. The lamp remains lighted until the drop is restored. When the main office operator answers the call he plugs in a Morse set, and in so doing switches the annunciator relay out of the line circuit but connects it through a resistance to ground. This returns the armature of the annunciator relay to its normal position so that the drop may be restored and the lamp extinguished as soon as the call is answered. When the operator cuts out the plug after receiving a message the annunciator relay is again placed in the line circuit.

In practice several such annunciators are often grouped upon one table and one or more operators are assigned to answer the calls as they come in.

Recent Telegraph Patents.

A patent, No. 894,820, for telegraphy, has been issued to Patrick B. Delany, of South Orange, N. J. A system of telegraphy in which a plurality of dots are transmitted by a single key depression. Makes use of relays having weighted armatures adapted to vibrate with a certain periodicity.

A patent, No. 894,167, for a keyboard has been granted to Adolph H. F. Schaar, of San Francisco, Cal. There are a number of pivoted transmitting key levers, each having a contact point at one end, a bar provided with a number of contact points, one for each of the levers, and means for closing an electrical circuit through either of the points when its key lever is actuated, and means for locking the levers when circuits are so closed.

A patent, No. 894,836, for receiving telegraphic and telephonic impulses simultaneously, has been granted to Isidor Kitsee, of Philadelphia. In a line of transmission, a telegraphic receiving device inserted in series thereto, condensers shunting said receiving device, in combination with an inductorium, one coil therefor connected to said condensers and forming part of the shunt around said receiving device, the other coil connected to a telephonic receiver.

A patent, No. 895,869, for a rectifier system, has been issued to Ossias O. Kruth, of Schenectady, N. Y. The insertion of reactance displaces the phase of one of a number of transformers supplying a mercury-arc rectifier.

The Barclay Printing Telegraph System.

BY WILLIAM FINN.

(Part VI.)

THE TRANSMITTER—CONTINUED.

The transmitter, as is well understood, is designed to replace ordinary hand signaling and automatically transmit to line a series of rapidly reversed currents. The duration and polarity of these currents for signaling purposes are, as previously intimated, determined by the punched tape, which in reality mechanically regulates their flow and direction in much the same way as it is accomplished manually, only with much greater speed and precision.

The current reversing arrangement for producing the signals is shown to the right of Fig. 21, where L represents an upright lever having platinum contacts placed equidistant on opposite sides of its pivotal point, and which are alternately brought into contact with the upper and lower stops D and D', whenever the transmitter mechanism is set in motion.

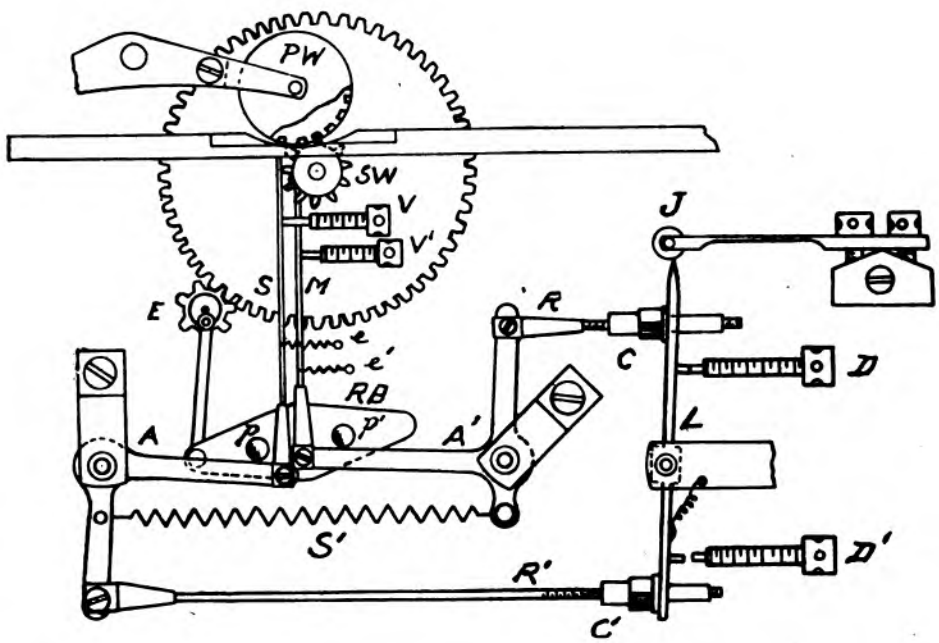


FIG. 21—SIGNALING ARRANGEMENT OF TRANSMITTER.

These stops are respectively attached to the marking (—) and spacing (+) dynamo machines, while lever L is connected to line, so that when the transmitter is running free of slip, a series of positive and negative currents flow out to line with a regular frequency that is varied in practice from fifty to seventy reversals per second.

When the punched slip is inserted, this regularity of reversal is destroyed, and the movements of the lever become such as to cause the latter to linger upon one or the other of the dynamo stops for varying periods, thus producing contacts of dot or dash duration, and sending out currents for corresponding intervals of time and of the polarity required for the production of signals upon the distant receiving apparatus.

A general idea of the manner in which these results are brought about will be understood by reference to Figs. 21 and 22, the latter of which shows the perforations requisite for the letter "e" on the punched paper, as well as the corresponding signals produced upon the received slip.

When the transmitter clock-work is started, the beam RB is caused to rock at its center, and an up-and-down movement is communicated to the upright steel rods or needles M and S. These needles are hinged on the rocking levers A and A', which are pivoted at the angles, and become alternately depressed through the action of the rocking beam. The latter is provided with two projecting pins p and p', which normally press downward against the horizontal arms of levers A A', which are in turn pulled upward against the two pins under the influence of the spiral spring S', whose tension is made sufficiently great to ensure rapidity of action.

Affixed to the arms A A' are the horizontal rods R and R', which, respectively, pass through a hole in the upper and lower part of lever L at equal distances from where it is pivoted, so as to enable the lever to be shoved either to one or the other side of its central position by the small collet C or C'. These collets are screwed on the rods R and R' and should be so disposed as to nearly touch the lever when its upper end stands directly beneath the center of the jockey roller J.

From what has been described it will be evident that the rocking of the beam RB will impart a vibratory motion to the lever L, causing it to strike first one and then the other of the dynamo posts and thus transmit to line the series

of reversals of which previous mention has been made.

If, now, the punched slip (Fig. 22) be inserted in the transmitter, the unpunched part of the paper will at first prevent the needles m and s from ascending sufficiently far to allow the reversing lever to continue in vibration. But when the first of the upper holes (m) comes directly above the rod M, the latter will then pass freely through the perforation, and as a result of this the lever will be thrust by collet C into contact with the upper stop D, and a negative or marking current will flow to line.

This current will attract the armature of the distant receiving apparatus, which we will assume is a Wheatstone receiver, and bring the inking disk connected with it into contact with the received slip and mark the paper. When the reverse movement of the rocking beam takes place the rod M will be withdrawn, and rod S will in

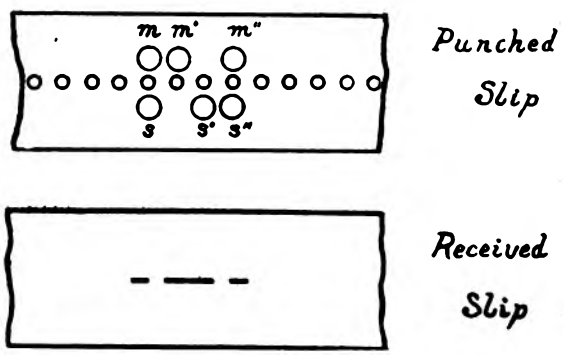


FIG. 22.

turn rise and project through the first of the lower holes (s). This will cause the lever L to be thrown over to the opposite side and establish contact between it and the lower stop D', and a positive or spacing current will be sent to line. This reversal of the current will remove the inking disk from the received slip and a dot will thus have been recorded.

The spacing current then continues to hold the ink wheel away from the recording slip until the rod M enters the next upper perforation m' and sends a marking current to line. The distant armature is again attracted so as to bring the marking wheel against the paper, where it now remains until the spacing needle S rises through the lower hole s', and thus reverses the current and withdraws the armature. For it will be seen that during this interval, or while the punched ribbon is traveling through the transmitter from m' to s', the upward tendency, first of needle S, and then of needle M, becomes checked or hindered by the unperforated portion of the paper which lies directly under m' and above s'.

Lever L is accordingly prevented from making a reversal, or, in other words, the position assumed by the lever after the needle M has passed through the hole m' remains unaltered, and the marking current due to that position is continued to line until the spacing needle enters hole s' and changes the polarity of the current. In this way the marking current is increased to one dash duration, which is immediately succeeded by another of dot duration when the needles M and S in the course of their further movements pass through the remaining perforations m'' and s'', thus completing the letter "e" of the printing code.

The center perforations are in no way concerned in producing the signals, but are formed for the purpose of admitting the teeth of the little star wheel SW (Fig. 21), which is rotated by the clock-work in order to urge forward the paper in passing through the transmitter. The star wheel is geared to lie between the two upright needles and carry the perforated slip forward from right to left, so as to meet the upward direction of the needles, which takes place when the larger circles in the perforated paper pass immediately above the ends of the needles.

The adjustment of each of the latter must be such that it commences to enter a perforation just when the left-hand edge of the opening is sufficiently clear of the corresponding edge of the needle to allow the latter to pass freely through the holes, otherwise the needles will catch against the side of the perforations.

The proper regulation may be secured by means of the screws V V', which are normally adjusted to admit of needle S being slightly to the left of needle M, as illustrated in Fig. 21. The small spiral springs e e', are for the purpose of pulling the needles back into their normal position against screws V V', just as soon as they are sufficiently clear of the slip to enable the springs to come into action.

(To be continued.)

The Western Union Brings Suit Against the Baltimore and Ohio Railroad Company.

An amicable suit was instituted in the United States Circuit Court in Maryland on August 1, by the Western Union Telegraph Company against the Baltimore and Ohio Railroad Company to have decided the question whether the Hepburn act for regulating commerce between the telegraph and the railroad companies for the mutual maintenance, operation and control of certain lines of the telegraph company.

The agreement in question was made October 15, 1887. It provided that the telegraph company should transmit free of charge business messages of the railroad to an amount not exceeding $10,000 a year, and charge half rates on all messages in excess of that sum. The telegraph company also agreed to pay the railroad company $60,000 a year in monthly installments of $5,000. The railroad company agreed to transport free of charge employes of the telegraph company when engaged in the company's work and also all material and supplies. Half rates were to be charged by the railroad on all transportation in excess of $10,000 a year.

The contract was carried out by both companies, the bill of complaint states, until October 1, 1906, when the telegraph company was notified by the Baltimore and Ohio Railroad Company that the railroad company, because of the Hepburn act, would be forced to collect in full for transportation of telegraph company employes and supplies.

It is alleged in the bill that the railroad company has misconstrued the Hepburn act and that it does not justify a breach of the contract with the telegraph company.

The court is asked to require the Baltimore and Ohio Railroad to carry out the contract.

Personal.

Mr. J. B. Korndorfer, the well known New York telegrapher, until within about four years ago manager of the Greenwich street office of the Western Union Telegraph Company, has been appointed cashier of the People's National Bank located in the Borough of Brooklyn, New York.

Mr. David Homer Bates, of New York, secretary of the Society of the United States Military Telegraph Corps, lately spent a very delightful vacation of two weeks at Lake Sunapee, New Hampshire, on the banks of which was located the summer home of John Hay, the late Secretary of State.

Mr. N. M. Booth, the veteran telegrapher who resides at Evansville, Ind., in a recent note writes to say that he has recovered from his severe illness, an event which served to assemble his entire family, bringing to the father and mother in the old home seven children, all getting together for the first time in twenty-five years. Mr. Booth will be eighty-three years of age on September 7.

Mr. A. W. Orton, a well known business man of Rome, N. Y., formerly an old-time and military telegrapher, was a recent New York visitor, while en route on a business trip South. It will be remembered that Mr. Orton recently contributed an article to Telegraph Age, relative to the late William Orton former president of the Western Union Telegraph Company. Mr. Orton has since been in receipt of numerous letters from various members of the Orton family expressing their pleasure at the appearance of the article in question, and thanking him for the comprehensiveness and accuracy of the historical data contained therein.

Postal Telegraph-Cable Company.

EXECUTIVE OFFICES.

Among recent visitors to this office were Shirley M. English, general manager of the Postal Telegraph-Cable Company of Texas, of Dallas, Tex., who was on his way East to spend a vacation in Boston; others were William J. Camp, of Montreal, electrical engineer of the Canadian Pacific Railway's Telegraph; Superintendents Leona Lemon, of Philadelphia; Charles E. Bagley, of Pittsburg; A. L. Edgecombe, of Boston; H. D. Reynolds, of Buffalo, and Manager George E. Taylor, of Warren, Pa.

Mr. E. B. Pillsbury, general superintendent, is spending his vacation in Boston, his former home immediately prior to his coming to New York.

Mr. Edson Kimmey, superintendent, at New York, has returned from a trip of inspection of offices in northern New York and Vermont.

Mr. Charles Shirley, assistant superintendent of traffic, is spending a vacation at Lake George.

Mr. Thomas E. Fleming, manager contract message bureau, is rusticating in the Catskills.

Mr. H. F. Hawkins, assistant secretary, who has been absent on vacation, is again at his desk.

W. C. Lloyd, Postal Manager at New Orleans.

Mr. W. C. Lloyd, whose recent appointment as manager of the Postal Telegraph-Cable Company at New Orleans, was announced in these columns, records another gratifying instance of progress manifested by the younger element in the telegraph service. Mr. Lloyd has just reached

W. C. LLOYD.
Manager Postal Telegraph-Cable Company, New Orleans, La.

his thirty-sixth year, his date of birth at Bladen Springs, Ala., occurring August 15, 1872. At seventeen years of age, young Lloyd began life as a messenger at Waynesboro, Miss. Acquiring the ability to telegraph, he found employment for a number of years in the railroad service at various points in the South. His first engagement in the commercial service as an operator was with the Western Union Telegraph Company, at Eufaula, Ala., and afterwards at Atlanta, Ga. In 1896 he went with The United Press at Columbus, Ga., but the failure of that concern in the year following resulted in Mr. Lloyd's becoming identified with the Postal at Birmingham,

Ala., in the employ of which company he has since remained, his career therein being marked with steady advancement. From the position of operator, he was promoted to be chief operator at Vicksburg, Miss., thence being transferred to the Memphis office as all night chief. Then he was sent back to Birmingham to fill the position of night chief, but was soon returned to Memphis as chief operator. His appointment as manager followed, and now further promotion places him at the head of the important New Orleans office. Mr. Lloyd owes his advancement not only to natural ability, enhanced by close application and study, but also to the fidelity he has shown in serving employing interests.

Western Union Telegraph Company.

EXECUTIVE OFFICES.

Mr. A. G. Saylor, the assistant general superintendent, who together with his wife and his brother, E. B. Saylor, superintendent at Pittsburg, who, as noted in the August 16 issue, made an extended automobile trip of two weeks, followed an extended itinerary that took them to the Delaware Water Gap, to the Berkshire Hills in Massachusetts, thence northward to the Green Mountains in Vermont, to the White Mountains, across to Portland, Me., the return trip being made by way of Boston, Springfield and Hartford.

Mr. A. R. Brewer, secretary of the company, is finding rest and recreation at New Found Lake, Bristol, N. H.

Mr. W. H. Jackson, who has charge of the leased wire service in the eastern division, spent a recent vacation at his native place in Canada.

RESIGNATIONS AND APPOINTMENTS.

Mr. J. F. Rawie has been appointed manager for this company at Portland, Ore., relieving Mr. William Ingold, who has been assigned to duty as general canvasser for the American District Telegraph Company in the Northwest, with headquarters at Portland. Mr. Ingold will, in addition to his duties as canvasser, also act as inspector for the Western Union Telegraph Company.

Mr. B. S. Jones has been appointed manager at Spokane, Wash., vice R. H. Tucker, resigned.

Mr. George W. Diven has been appointed night manager of the Washington, D. C., office, vice W. H. Young, deceased.

The Cable.

Cable communication was interrupted Aug. 28 with:

Venezuela	Jan. 12, 1906
Madura Island (Dutch East Indies)	Feb. 3, 1908
Lanzorote (Canaries)	May 18, 1908

Messages go by steamer from Las Palmas.

Mr. Charles Trippe, superintendent of the Anglo-American Telegraph Company of New York, is in Europe on a three-months vacation. During his absence Fred. H. Nicholls is the acting superintendent.

Mr James Nicolson, for many years superintendent of the Western, River Plate and Pacific and European telegraph companies, at Buenos Ayres, Argentina has retired from active telegraph service and returned to England, his native country, where he will in future reside.

A patent No. 895,978 for an apparatus for transmitting and reproducing sounds has been issued to Joseph Arthur Lovel Dearlove, of London, England. Has means by which the water pressure on one side of a diaphragm of submarine transmission is balanced by an equivalent air pressure on the other side.

The Turkish government has issued an official notification to the effect that the Island of Imbros will be connected to the telegraph system of the world by a cable to be laid from Ayia Tonfolia to a place in the Dardanelles, from whence it will be connected by aerial wire with the cable Kilid-ul-Bahr. The new cable will be about 224 kilometers in length. The telegraph office in the island will be at Panazia.

A New Postal Office at San Francisco.

The Postal Telegraph-Cable Company has leased quarters in the new office building at the northeast corner of Bush and Battery streets,

THE POSTAL TELEGRAPH BUILDING, SAN FRANCISCO, NOW NEARING COMPLETION.

San Francisco, for its general offices and operating department. This building, now nearing completion, is being erected by the Crocker Estate. It will be known as the Postal Telegraph Building.

The entire tenth floor will be occupied jointly by the Postal Telegraph-Cable Company and the Commercial Pacific Cable Company for operating rooms, etc. Ten rooms on the ninth floor will

be used for offices of the various departments, and a portion of the ground floor and basement, together with a mezzanine floor over the ground floor, will be utilized by the Postal company for receiving, delivery, messenger departments, etc.

The new offices are to be modern in every respect, and the various departments will be connected by pneumatic tubes. Work upon the equipment is under way and the new quarters will be occupied before the new year. The work incident to the installation of apparatus is under the direction of H. C. Shaw, division electrical engineer of San Francisco.

Business Notices.

The Kellogg Switchboard and Supply Company have just issued their new bulletin describing in every detail their standard line of common battery apparatus. The bulletin is handsomely illustrated with large well-finished half-tones. The "standard of excellence" Kellogg common battery wall telephones are described in full, with special descriptions of the new Kellogg "short backboard" wall instruments, the new Kellogg "steel hotel set" and the new "indestructible desk stand" which is proving immensely popular.

One of the most unique propositions made to the readers of this publication in recent years is the generous offer of the Hartman Furniture and Carpet Company of Chicago, to furnish homes for the people, no matter how far distant they live, on terms of easy payment, announcement of which is made in another column. This concern is one of the oldest firms in its line in existence, having been started fifty-three years ago. They now have twenty-two stores throughout the United States and are well and favorably known from the Atlantic to the Pacific. This old reliable house fully describe their very liberal method of selling goods on credit, in a big catalogue which they have just issued and which they send free on request. Their address is 223-225-227-229 Wabash avenue, Chicago.

Mr. Frank B. Cook of 252 West Lake street, Chicago, who manufactures the Cook Self-Welding Wire Joint, now so well and favorably known, states that he has had to make continued increase in his manufacturing facilities to take care of the constantly increasing orders for his wire joint. He states that the joint is now being used by many telegraph companies and railroads, in addition to the telephone companies who have used the joint almost since its inception, and some of these companies are using the Cook joint exclusively. He also states that he has found it necessary to increase his range of manufacture to include all sizes in iron and copper from No. 0000 to No. 18. He is also making the copper joint in sizes to accommodate stranded copper cable having a diameter as large as 83,000 C. M. The peculiar construction of the Cook Wire Joint is particularly valuable in all kinds of electrical construction wherein a joint would be used, as it makes an absolutely permanent joint, one which will not deteriorate owing to moisture penetrating and setting up corrosion or high resistance. Mr. Cook will gladly furnish full information and prices upon request.

Radio-Telegraphy.

The Marconi Company's radio-telegraph station at Liverpool, England, was opened for public use on August 1. Telegrams intended for transmission through this station should be addressed like the following example: "Smith, Steamship Carmania, Liverpool Wireless Station."

Mr. Gaston Lacommi, an electrical engineer with a laboratory in Brooklyn, N. Y., is said to have devised a wireless telegraph sending apparatus capable of transmitting four messages at the same time. It is understood that Mr. Lacommi utilizes a transformer giving four different frequencies.

Mr. E. J. Haughton, formerly, and for a number of years with the Canadian Pacific Railway Company's Telegraph and now in charge of the Dominion Government radio-telegraph station at Gonzales Hill, has been appointed superintendent of the whole system on Vancouver Island. At present there are five stations, including the local one, the outside ones being at Point Grey, Cape Lazo, Estvan and Pachena.

It is reported that H. M. S. Indomitable, on her record voyage from Canada, was in wireless communication with the shore all the way, and her messages were received at the Scilly Islands, over a distance of 1,600 miles. By the special request of the Admiralty, the high-power stations at Clifden, in Ireland, and Glace Bay, Canada, belonging to Marconi's Wireless Telegraph Company, Ltd., transmitted the long distance messages to the Indomitable during the voyage.

The Bureau International at Berne makes the statement that the next annex to the Official Nomenclature of Telegraph Offices of the World will also contain a list of coastal wireless stations, as well as those on board ship. The bureau will also issue a special nomenclature of such offices, as most of the adherents to the "Wireless Convention" have furnished them with the necessary particulars as to the wireless stations operating on their territory.

Mr. G. Marconi will soon visit Canada in company with one of the directors of the English board of the Marconi Wireless Company. The inventor is desirous of making further improvements to the wireless service on this side of the Atlantic, and, during his stay in Canada, will spend considerable time at Glace Bay, Nova Scotia, improving the service at that point. It is understood that some definite arrangement will be made regarding a reorganization of the management of the company in Canada before Mr. Marconi returns to England.

Telegraph Age as an Educational Factor.

Mr. S. M. English, general manager of the Postal Telegraph-Cable Company of Texas, at Dallas, Tex., in a circular dated August 15, and issued to all managers, has this to say :

"I attach hereto page 399 from Telegraph Age of July 16, 1908, which contains a very instructive article on mutilation of telegraph signals, which please paste in your book of instructions.

"I desire that you read this carefully and then read it again and as many times as it is necessary to impress upon your mind all the causes of mutilation of telegraph signals, so that you can discuss them freely and correctly with the patrons of the company when explaining errors that may occur in their telegrams. I wish you to also see that your lineman reads this article carefully and understands what causes poor insulation, and the effect of poor insulation upon telegraph signals. It is well worth while of yourself and every employee to read and understand this article thoroughly, and I hope that you will do so.

"I also attach two additional pages from the same issue of Telegraph Age, explaining the duplex and the new Postal intermediate office switch board. The object of enclosing these last articles is to interest you in the study of the apparatus and to let you see why I have always advocated subscribing to Telegraph Age. Similar articles appear in every issue of Telegraph Age, and I do not believe any manager or telegraph employee who is interested in the business, can afford to miss such an opportunity to get an understanding of the wires and apparatus."

The articles referred to by Mr. English as being published by Telegraph Age, he very happily advocates should be read not once alone but many times, until the information contained therein becomes distinct and clear in the mind of the individual. Students of the telegraph, men like J. C. Barclay, Francis W. Jones, William Maver, Jr., the well-known writer, and others, who have arrived at distinction in the profession of the telegraph, because of a clear and practical conception gained of its details, make it the practice of their lives to study and ponder over informing literature concerning this great subject. In this way alone can the mind absorb properly and in logical manner information necessary for its enlightenment and enlargement. Any one who supposes that the full meaning of a technical article or a book can be grasped and retained in the mind by a single reading makes a great mistake. Do not let one reading suffice, make it fifty, and keep the matter where it may readily be referred to. A successful technical man is always an intelligent observer and a close student.

Neutralizing Induction on Telegraph Lines.

A note on a recent British patent of the British Thomson-Houston Company (General Electric Company of this country), says the Electrical World, sets forth the protection of telegraph or telephone conductors which run adjacent to rails used as return conductors on alternating-current railways, from induction, a neutralizing conductor connected in shunt to the rails being placed near the conductor to be protected. This will neutralize the electromagnetic inducion, and since the rails are earthed, will also partly neutralize the electrostatic induction. Resistances may be required in the shunt circuit to reduce the current to the proper amount. For the same purpose a transformer may be used, the primary winding being in series with the rails and the secondary with the neutralizing conductors.

New Canadian Cable Press Service.

The Canadian Parliament has appropriated $24,000 for the purpose of maintaining an independent and efficient service of telegraphic news from Great Britain for publication in the Canadian press.

The appropriation, it is added, is to last until July 1, 1910, and is to be paid to an association or committee representing the proprietors of such newspapers as associate themselves for the purpose of maintaining such service.

Provided, however, that "no payment shall be made under this act until the Minister of Finance has satisfied himself that the benefits of the service are open, on fair and reasonable terms, to all newspapers published in Canada, and that not less than one-half of the cost of maintaining the service is paid by the proprietors of the newspapers participating in the benefits."

The appropriation of $24,000 for maintaining or partly maintaining a new cable news service seems to be entirely inadequate. The Canadians now get a good cable service from The Associated Press for almost nothing and they will find that cable tolls mount up in these days when from $1,000 to $16,000 are spent for single dispatches. —Fourth Estate.

Distributing the News in a Presidential Year.

The work of the general managers of the news agencies, The Associated Press, the Hearst Service and The United Press, is not easy at the best of times, remarks the Fourth Estate, but in the summer and fall of a presidential year it is nerve-racking beyond description.

Melville E. Stone, C. J. Mar and H. B. Clark, respectively, the working heads of the three news collecting and distributing concerns referred to, have their hands full these days. They have not been able to indulge in the much needed relief afforded by a vacation during the hot spell and will not have an easy moment until after election, and even then there will be the "kicks" to be attended to, for no matter how effective a service they may run there always will be some dissatisfied clients.

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Telephone: 4143 Cortlandt.

CHANGES OF ADDRESS.—In ordering a change of address the old as well as the new address must be given.

REMITTANCES to Telegraph Age should be made invariably by draft on New York, postal or express money-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.

SEPTEMBER 1, 1908.

The Book Department of TELEGRAPH AGE has always been a prominent and carefully conducted feature of this journal. The desire has been and is to furnish our readers and buyers everywhere the readiest means possible of securing such technical books as they may require. Aiding buyers in their selection with advance information, which at all times is cheerfully furnished; promptness in sending books, filling all orders on the same day of their receipt, has brought to this department a generous clientage. Catalogues fully covering the range of books treating on the telegraph, wireless telegraphy, the telephone, as well as those on the general subject of electricity, together with the principal cable codes, will be sent to any one asking for the same.

A Brighter Dawning.

A study of present conditions in the operating field of commercial telegraphy reveals the gratifying fact that a better state of contentment than has been observed for some time past, among the employed regarded as a whole, is beginning to assert itself. Its further consideration also discloses the existence of a higher morale. It is a satisfaction to record these truths. They are significant in their meaning inasmuch as they may be accepted as indicating a trend toward better things, the full realization of which is of much import, valuable alike to operating forces and to employing interests. This drift points to recovery and stability, and stability is what is needed in order to secure lasting good after recent disturbing influences.

It has been said that the personnel of the telegraph, viewed in its entirety, did not measure up to the standard recorded of a generation and more ago. Whatever of truth there may have been in this assertion, it must be admitted that a readjustment of forces such as has been in process of late, is gradually bringing into clearer perspective a class of telegraphers, whose reassuring impress upon the service in general appears to be becoming more and more evident. This element has power to confer lasting benefits not only upon the telegraph itself, considered as a field of active service, but conversely and with no less force and directness upon its individual constituency. As it presents itself to our view the outlook within the horizon of the telegraph appears as one of better omen; for men who are really faithful to themselves are likewise prone to be faithful to the company that employs them, thus making possible an achievement in results as desirable as it should be obligatory.

The business world never had greater need of intelligent and progressive men than it has to-day. Men so fitted will forge ahead; others will lag behind, for that is but following out a natural law. Although methods of business change, the avenues of employment multiply. Intelligence and capacity command the same recognition in the telegraph as out of it. While the opportunities in commercial telegraphy to secure financial reward may not be so flattering as in some other avocations, it nevertheless does possess many posts of honor and emolument within its gift that are worthy of any ambition and of a keen effort to secure them. They cannot be reached, of course, except by careful preparation and hard work on the part of the individual.

The training that any determined and conscientious man may obtain in the telegraph service, both as an all around electrician and in the development of executive qualities, are obvious. The opportunities afforded him are close at hand and on every side. He can accept or reject them at pleasure. A young man possessed of the right stamina, however, need not be left behind in the race of life, hence it is that we earnestly enjoin, as we have done in the past, that diligent study, broad observation and close application characterize all efforts. It may be that reward will come outside of the jurisdiction of the telegraph, as so many have found it in the past, but wherever and whenever it comes all should be ready to accept it. Remember one thing: the careless and wasted hours of youth will cause many a sigh of regret in later years when plodding existence constitutes the dull routine of life; the student, the possessor of knowledge, the practical man will then have entered upon benefits conferred.

We have noted lately and with especial pleasure, the appointment of numerous young men to positions of responsibility in the telegraph service. While they have been advanced without regard to the law of seniority, it is evident they have won their way because of fitness. In other

words they have earned promotion and office and we rejoice that they have secured it. Perhaps ultimately they may retire from the position of chief operator, of manager, of superintendent or from whatever place held to step into situations of wider opportunities and larger remuneration, as so many are doing. When they do there should be others qualified and ready to take their places.

We would urge the man at the key to prepare for advancement. He can fit himself in some degree for something better, if he will, while in this initial position. The telegraph has need of his services a round higher up, and is only awaiting evidences of his ability to fill it. At twenty-five a young man may be a first-class operator, and for one of that age may be earning a good salary. But at the key simply he has practically reached his limit. With rare exceptions if he remains an operator until forty, or fifty, or even sixty years of age, his earning capacity is no greater, if as much than at the earlier period. Criticise this fact as we may, and reason as to its apparent injustice, it is the truth. Operators, at the key, as a rule, deteriorate in skill after the freshness and strength of their earlier years is gone. On the other hand a bookkeeper, for instance, a proof-reader, or an author, if you please, and others of like employment, reach a higher degree of skilful attainment and consequent earning power as they grow older.

To suffer retrogration before the time appointed by nature, is to become unnaturally rusty. It is pitiful. Get out of the rut, then, that binds you fast to the key. Have a manly pride regarding yourself and your future and give the law of evolution a chance to work. If you are a good operator to-day, make sure that you will be a better wire chief to-morrow. We would preach optimism. The telegraph is not so uninviting. It may not be a mine of wealth to the individual to whom it gives employment, but the really bright man engaged in it can always draw good pay. The fact should never be lost sight of that the telegraph has graduated some of the most capable business men and brilliant executive officers to be found in this country to-day. This has been its record in the past, it is its record of the present and will continue to be its record in the future.

The Conviction of a Telegraph Embezzler.

The announcement has been made of the conviction of John R. Petrich, for the embezzlement of a sum of nearly $10,250 from the Postal Telegraph-Cable Company at New Orleans. Petrich was employed as chief clerk to the superintendent of the company in the Crescent City, and taking advantage of the opportunities afforded him by his confidential position, at that time vested with even additional security owing to the then recent death of Manager D. W. English, betrayed his trust, stole to obtain funds for gambling, and when concealment of his defalcation was no longer possible, sought escape therefrom by flight. Poor fool! It was the old story. The prayer "lead us not into temptation," should never be absent from the lips, especially of those placed in positions of responsibility. Apprehension of the absconder soon following at Albuquerque, New Mexico, he was speedily returned to New Orleans, and there lodged in jail. On August 14, after a two days' trial, he was declared by a jury guilty of the crime charged. Prior to this theft Petrich, so far as known, had borne an excellent reputation, his honesty at least never having been questioned. At thirty-five years of age, a time when a man should begin to feel that he was beginning to obtain a grasp on the substantialities of life, illumined with a discerning view of future reward, this young man recklessly dashes all to one side, wrecks his own career, brings want upon a wife and three young children and disgrace to his father, who is himself an honored member of the telegraph profession, also at New Orleans.

The brazen effrontery displayed by this criminal in declaring his defense is shown by the astounding argument advanced by one of his attorneys, according to an account in a New Orleans paper, to the effect that the funds taken by the prisoner did not in fact belong to the telegraph company, the claim being made with impudent reasoning that it was money improperly received for tolls on telegrams during the last strike. Verily a fine code of ethics to be ventilated in a court of law!

It is a pitiful scene that depicted between this moral outcast and his family, upon which the curtain now falls. The next act, in which the public unfortunately will lose interest, because lacking in spectacular show, will depict the hard struggle for bread that has been placed upon the little family, to whom the very agony of living is their every day reminder of the tragedy enacted.

No clemency in this case to the evil doer was deserved; none was given, for it was necessary to punish a crime of this character severely. Unfortunately it is not the guilty who usually suffer when they go wrong but rather those who are rendered dependent and helpless by the offense committed.

Mr. A. J. Coppin, of the Western Union Telegraph Company, North Sydney, N. S., takes occasion in a recent letter to say: "Being the only journal devoted to telegraph interests, every telegrapher should be a subscriber to Telegraph Age, and I shall be pleased to recommend it at every opportunity."

The hand never lies. It always obeys without question the orders of its master—the brain. If it is desired to improve the product of the hand, attention must be given to the education of the mind, which has exclusive jurisdiction over the hand.

The Need of Study and Training in the Telegraph Service.

BY S. M. ENGLISH, OF DALLAS, TEXAS.
General Manager, Postal Telegraph-Cable Company of Texas.

In the retrospect of years, recalling the events of my own life, I wish to bear testimony to the influence for good Telegraph Age has been to me in my chosen occupation. It has ever exerted a beneficent authority and aided me in right thinking and to clearer perceptions of the duties and the inherent opportunities incident to my profession. The instructive articles appearing in its columns have been of invaluable service to me, and were especially so twenty years ago, when as a student I sat up nights in an earnest endeavor to acquire an understanding of my business. Its teachings were practical; they stimulated a young man naturally ambitious, to master the technique of the telegraph. When promotion came to me, and I was made a quadruplex chief, passing in my advance, a number of my seniors who, I remember, often preached that it would be time enough to "learn things" when promotion reached them, the belief became more firmly fixed in my mind that study alone would serve to advance a man. Telegraph Age always resolutely proclaimed this precept. Alas! many of those whom I knew and worked with, side by side, remained in the ranks, although some possessed the natural ability that ought to have caused them to forge ahead. The pity of it is that so many in the telegraph service will not recognize that it is individual unreadiness that frequently keeps them back and down. Too often we hear the argument advanced of "What's the use; I'm going out of the business soon, so there is no need of study." They forget that it is the student only who will obtain advancement, whether in the occupation in which he is engaged, or in the call that may come to him from other avocations.

Impressions obtained in those early days have naturally been confirmed by a broader experience gained in later years. Recently their truth has been brought forcibly to mind. I have had two vacant managerships at the top salary in my territory at my disposal for which I have received many applications, and from some splendid young men, none of whom were qualified to fill the positions because of unfamiliarity with wire testing and apparatus, a fact which calls to mind a recent observation in Telegraph Age regarding the lack of interest displayed by the average young telegraph employe in learning every detail of the business.

Because a man is a first-class operator and a mixer does not qualify him to manage a telegraph office. To successfully fill this post he must know every detail of the business, the management of wires, repeaters and the quadruplex, as well as that of clerical work and the handling of men and messenger boys. He must be firm and just in his treatment of those under him, courteous, accommodating and frank in his dealings with the patrons of the company. It is hardly necessary to say that men possessing all of these qualifications are very hard to find. While it is true that many men are endowed with the requisite personal qualifications, but few have a true and full knowledge of the technique of the business, and who as managers would be competent to relieve any man under them and do his work in a superior manner.

My observation is that too many young men think they are in the business but temporarily, and for this reason conclude it is not worth their while to learn anything more than to send and receive messages, and of that even to do just as little as possible, no more than to enable them to hold their positions. As a rule those who are the least qualified are the hardest kickers when they are not promoted.

It has been my pleasure to have helped a number of young men in their efforts to learn to handle wires and apparatus, and while in numerous instances I have reason to feel proud of the result of such endeavors, there are many whom I have tried to befriend who would not accept my assistance. Then again, I regret to recall a few cases where I have aided in the development of young men of rare abilities who could not stand prosperity and have fallen from grace. None of them, however, are hopeless and I feel sure will ultimately see the folly of their ways and return to correct living and practice and be of value to the company and a credit to themselves, their employers and their families.

Every young man who enters the telegraph business should for his own sake learn all he possibly can about it, even though he really intends to quit at the first favorable opportunity; for no matter what business he may afterwards enter, a thorough telegraph training and knowledge of its details in general will be of incalculable value to him. Any man can learn to know when a wire is open, grounded or crossed, but it is a great satisfaction to know how to measure a wire and definitely locate defects. The use of the galvanometer and other measuring instruments is a very interesting study and will repay any young man for the time he may devote to gaining a practical knowledge of their working.

It is supposed that every operator knows when a quadruplex is "busted," and a great many know how to take a balance and when a main or local current is off, but the really valuable man is the one who is acquainted with the detail and can promptly locate and clear trouble caused by a dirty point, an incorrectly adjusted spring, magnet or armature; a loose connection, a defective condenser, and a thousand and one other little things that get out of gear, any one of which may seem unimportant to the average attendant, but which may seriously cripple a long quadruplex circuit. A good quadruplex man does not wait for these defects to appear, but keeps his appara-

tus in perfect order by going over it piece by piece every few days to see that it is in good working condition, for in this way he prevents interruptions and consequent delays. The track walker and bridge inspector of the railroad, who sees that every rail is in good condition and every spike and bolt is sound and in place, prevents many wrecks. I have frequently heard the quadruplex condemned, and everybody interested has tried at one time or another to perfect it, but when the conditions under which a large percentage of them are worked daily are taken into consideration, we can well believe that the quadruplex does not need half the improvement that some of those who handle and condemn it do.

A great many men lose an opportunity to learn by pretending to "know it all," instead of listening attentively and asking questions. Information may readily be obtained and there is no excuse in these days for a lack of understanding of wire testing and apparatus. If some chief operators would take a good balance instead of trying to impress upon the man at the other end of a circuit how little he knows about the quadruplex, or waste time discoursing on induction, underground cable interference, etc., they would speedily secure needed results and find their theories exploded. A strange thing to me has always been that a certain quadruplex circuit may work several weeks, and when finally it fails to go because the apparatus has run down and needs attention, that the chief will atribute it to causes which have been experienced by some writer who has had charge of quadruplex circuits paralling a high voltage power circuit or passing through thirty or forty miles of underground. Yet when he cleans and readjusts the apparatus and says, "try it, its pretty shaky but its the best we can get out of it," ten to one the trouble has been removed and the circuit racks along for another two or three weeks before the power circuits interfere again. My instructions to employes handling a quadruplex are to balance up properly the moment there is a complaint. If it is needed, time has been saved, if not, then but a minute or two has been lost. If every quadruplex chief would adopt this plan much valuable time lost might be saved. If there is any defect in a set that cannot be located instantly the set should be thrown out and a good one put in its place without argument, and this can be done at both ends with little loss of time. All spare quadruplex sets should be kept in first class condition and ready for any emergency. Another cause of lost time is in hunting for a file which should always be in the pocket of the man whose duty it is to look after apparatus, but frequently is not. The old famaliar saying of "a stitch in time," etc., is as applicable to quadruplex and repeater apparatus as anything I know of.

"Farmer Brown" of the New York Central.

W. C. Brown, senior vice-president of the New York Central lines, an oldtime telegrapher, who has climbed amazingly near to the top of the ladder of Financial Reward, has turned his private office in the Grand Central station, into a country fair. A canary is the only "live stock" that he has on exhibition at present, but he has the promise of three Spanish mules that W. H. Newman, president of the company, who is now in Spain, threatens to ship to "Farmer W. C. Brown," as Mr. Newman calls him.

Mr. Brown has taken down railroad maps and photographs to make room for samples of Iowa corn and farm scenes. On his desk, under the glass top, Mr. Brown has placed a series of photographs that picture him in the operations of milking cows, carrying the milk, pitching hay and training horses.

Next to railroading Mr. Brown would rather be a farmer and general storekeeper than any thing he knows about. He is all three, for he owns a large general store in Iowa.

While Mr. Brown is the senior vice-president of one of the largest railroads in the country, he has not a dollar invested in railroad stocks. His money is all in farms. Mr. Brown claims to have the long-distance canary singing bird. The other day President Newman sent Mr. Brown a postal card from Spain, picturing three mules pulling a dead bull from a bull ring. "Going to ship 'em over to you," wrote Mr. Newman. Mr. Brown recently bought a cow that was raised on the farm of Queen Alexandra, of England, and he is now busy raising English calves in Iowa, "which is going some," he adds.

There is always a constant demand for books treating on the general subject of electricity from a point of view and in a manner making clear information that the average individual desires to know, but which he frequently finds so difficult to obtain. A volume of this character which is not amateurish in expression, but which, while not designed for experts, is nevertheless valuable to the seeker after knowledge, is prized by those whose opportunities for gaining information on the several branches have been limited. Such a book is "Electricity Made Simple," by Clark Caryl Haskins, the well-known electrical writer. The dedication illustrates the democratic purpose of the author, for it reads, "To my many friends in blouse and overalls, with kindest remembrances." The volume is bound in paper covers, embraces nearly 240 pages, and in its twenty-one chapters, and 108 illustrations, touches upon and illuminates a variety of topics such as are seldom so comprehensively assembled in a single volume. When it is considered that the cost of the book is but fifty cents it will be seen that this low price puts it within the reach of everyone. It will be sent postage paid on receipt of price. Address J. B. Taltavall, Telegraph Age, 253 Broadway, New York.

The Military Telegraphers in the Civil War.

PART SEVEN.

From the Fort Scott, Kansas, office of the Western Union Telegraph Company, D. A. Williams wrote under date of November 16, 1878, to Colonel William R. Plum, the historian of the military telegraphers, reciting the part he performed in the military telegraph service during the war of the Rebellion. The story he furnishes is as follows:

"When the war broke out in 1861 I was employed as a telegraph operator by the Hannibal and St. Joseph Railroad Company at Hannibal, Mo. In response to solicitation I joined the 21st Illinois Volunteers at Palmyra, Mo., as an operator. This regiment was under the command of Col. U. S. Grant. We soon moved and established a camp on Salt River, at a point where the rebels had previously burned a bridge.

"Although physically disabled from the army I felt it a duty to do my part, however small, in my country's service, and being the only "sound" operator then within reach, I volunteered without expectation of reward, an act which afforded me as much satisfaction for the simple privilege as anything I ever did in my life.

"Colonel Grant loaned me one of his small tents. Cutting the wire near my tent, I suspended the loop down through the top of the tent. With a small pocket instrument and an empty powder keg for a table, General Grant's first military telegraph office was equipped. We were without chairs, some hay spread on the ground serving for a seat. I had been with Colonel Grant nearly a week until the practical completion of another bridge to replace the one burned, when he informed me that he would pull up stakes and move with 2,500 men at midnight, and would not wake me unless we were attacked, also that he would send for his telegraph tent on the following day.

"Palmyra was a center of rabid rebel sentiment. A meeting was held there at the time of which I write as an expression in furtherance of the secession cause, which brought together a large number of people. Among them was a man from Kentucky with whom I was somewhat acquainted. He was an old-time operator and asked me many questions in regard to my business habits and whether I could read by sound; also, where we kept our main battery as well as other questions regarding the railroad officers. Without wishing to offend him I gave him as little information as possible, but when that meeting took place I found he had put his knowledge of telegraphy to practical use by placing two very fine grounded wires on our line between Palmyra and Hannibal; and in order to conceal them from the train men and repairer, had after attaching them three or four poles apart, tucked them into the cracks of the cedar poles which favored him as they were split from top to bottom. For three days the repairer was hunting for that escape, but in the meantime I succeeded in copying nearly every message from the west by means of a very fine relay, and was enabled by the relay also to locate nearly the precise spot of the escape. I sent a repairer to the pole indicated nearest the battery and sure enough he found the ground wire. Then I sent him back just three or four poles further east and he was astonished to find another. He never would believe, however, that I had not received information from some person as to the location of those "grounds," but the manager of the Palmyra office, since deceased, informed him often that he was sure I could not have seen or heard from the party doing the mischief.

"My next experience was when the wire was cut by the same body of rebel troops, that burned the Salt River bridge. This line of telegraph, while owned by the Hannibal and St. Joseph Railroad Company, was used by the Missouri and Western Telegraph Company, under Charles M. Stebbins, when their wire south of the Missouri River was down, hence it was very important that it should be kept open for both companies. I was requested to go forward and repair the break.

"A train was placed under my control by Col. J. T. K. Hayward, then commanding in North Missouri. Expecting difficulty I took a relay and a coil of wire, but had not tools except such as nature provides every one. I found the break three miles east of Monroe station, at the tank at which point I stopped the train. Looking for a coil of wire, I discovered that the careless baggage man had thrown it off at Palmyra Junction, in order to make room for some trunks. We lacked six feet of wire, and in pulling the sag into position, the wire broke again three or four poles distant from us. The conductor of the train, Count Harris (almost every railroad man knew him), exclaimed almost in despair, "What next!" I said, "All aboard for Monroe and as quick as possible!" Anticipating wire-cutting on the part of the rebels I had a few days previous privately sent to each section man on the entire road a small coil of wire with instructions to secrete it for future emergencies. I found the next section boss at Monroe had saved his wire. This I secured and again returning to the point of breakage, and dismissing the train, succeeded in mending altogether eight breaks. This work completed, I flagged an approaching eastbound train, but the engineer fearing foul play and not recognizing me, did not stop until the fireman shut off the steam and signaled for me to run, which I did I can assure you, the train not stopping, only slowing up so as to be under full control in case the rebels should reach it before I did. One of the officers of the road stood on the rear platform and assisted me to climb aboard. On the day following the tank and the depot at Monroe, at which place I had been at work, together with a train of coaches, was burned by this same band of rebels.

"That same day I started by steamer for St. Louis but on reaching Hannibal was asked if I was willing to go out with several companies to

act as scouts and to patrol the road. Of course I volunteered. When we reached Monroe once more the place was found to be filled with enemies. I believe every man, woman and child had been sworn to neutrality by the rebels, for we could get no aid or comfort. I commenced at once looking about for a suitable place to establish headquarters. This I did in a two-story hotel. I decided to run a loop in some room of that building but was informed that I would have to take the room forcibly, because the proprietor and all his household had been sworn not to aid us under penalty of death.

"The particular room I selected for my purpose was occupied by two young ladies, who naturally were much incensed at what they termed my 'outrageous and unwarranted intrusion.' As they positively refused to aid us in the removal of their belongings, we gathered up bandboxes, dresses and what not, and deposited them in short order in another room. In this room that night three rebel scouts were tried, searched and found to have concealed weapons and one of them was condemned to be shot at sunset the following night. This room was also the headquarters of Brigadier General John McNeil who joined us with several companies of Merrill's cavalry besides his own regiment. In Merrill's force I found several of my old Michigan friends, one of the captains and nearly one entire company being from my old home.

"Leaving Monroe I went to St. Louis and there entered the military telegraph service for one month under Colonel R. C. Clowry, although still retaining my position with the Hannibal and St. Joseph Railroad Company, to the duties of which I returned after thirty days. Subsequently I entered the military telegraph service regularly in which I remained until the close of the war. Nothing of interest of which I was a party occurred during my stay at St. Louis, except during Price's raid into Missouri. About the time he was nearing the city of Lexington I was assigned to the wire of the Missouri and Western Telegraph Company, which ran through that city and a portion of the way over the Missouri Pacific Railroad. One morning, very early, when I had quite a large accumulation of business on hand, I noticed a stranger on the wire asking for calls of several different points. I called up Kansas City, told him that "there was a colored man in the woodpile," somewhere between us, and that he would soon hear from me with important business via North Missouri, Hannibal and St. Joseph and the north end of the Missouri and Western wire via St. Joseph, the latter point being then the terminus of one division. I had the North Missouri main line (there was only one wire then) joined to the west end of Hannibal and St. Joseph and thus I succeeded in working some very important telegrams from General Pope to Generals Curtis and Ewing, regarding the movements of troops that were then preparing to and which afterwards did cut off the retreat of Price and capture Marmaduke's entire army. While I was sending this business, I remember Colonel Clowry came in the office and finding what I had done to outwit "Johnny Reb" in search of knowledge, looked remarkably well pleased.

"I have since learned how General Price ordered an acquaintance of his to put loops in that wire at Lexington and other points he visited but not to ground the wire. It was well known that this rebel command had operators with them, but, of course, I had not the remotest idea that in fifteen years time I should hear from them again as I have recently.

"The remaining incidents of the war, in which I was assigned to take part, while important in the great chain of events, of which they were a part, contain nothing of graphic interest.

"I wish to be permitted to say that the telegraph operators of the United States Military Telegraph Corps during the War of the Rebellion should have some suitable recognition of their services at the hands of the Government, more than they have had. I trust the day is not far distant, when they will be rewarded either by a grant of land or in some other suitable manner. They bore hardships and privations of camp life, suffered sickness and death, and there has never been so much even as a "thank you" given them by the United States. By their fidelity and nerve the armies were moved, battles were won and property saved. It was through the military telegraph that General Grant said, 'Let us have peace.' This grand sentiment was re-echoed throughout the entire world, but let us remember that it was uttered just after the greatest victory was achieved, where troops vast in numbers, were moved by orders sent through the United States Military Telegraph.

"I have written before of this claim, some five or six years ago, and I hope now the work will not cease until all living and the heirs of all dead of this corps shall receive proper recognition for their services already given to the soldier.

"The grand development of the present system of the Western Union Telegraph Company is greatly due to the necessity of military rule, as enforced in the telegraphic ranks during the rebellion. It was there that system was observed and accepted as an important element in insuring success. The general officers of the Western Union Telegraph Company were also the commanding officers of the telegraph corps and it was through their ability that success was attained. They were practical men then, they are practical men now. The commanding officers, however, never take all glory to themselves. An army of officers would make a poor fight. General Grant gave his men credit under God for their victory. They were allowed bounty, land grants, etc. Our officers in their report also gave us thanks but there the curtain fell and all was dark beyond. Many contracted disease and death in the military telegraph service; many confronted the enemy with no military support and this great republic makes no admission nor grants any award."

Mr. Edison As a Scientist.

Telegraph Age announced some months ago that Thomas A. Edison, abandoning commercialism, would in future devote himself exclusively to scientific research. This announcement has been received among scientific men in America, England and elsewhere in Europe, with every evidence of approval. According to despatches sent to the New York World a general foreign acclaim goes out to Mr. Edison on his decision, which we quote:

"Edison, a denizen of the scientific Olympus, is above the greeting of mundane workers," says Sir James Dewar, of England, who first liquefied air. "I am most interested to learn of Mr. Edison's resolution and am certain all scientists will welcome his decision," says Marconi. "I sincerely hope he may be spared for a great many years so that science may be further enriched by his splendid genius."

Sir William H. Preece, formerly chief electrician of the English Postal Telegraph Department, said: "I am very glad to hear of Edison's resolve. His acute observation, manipulative skill rapid judgment should help on science, which is very much in dreamland just now."

Sir Robert Ball, the Astronomer Royal, remarks: "All men of science must rejoice that Edison's consummate ingenuity and experimental skill will be devoted to pure science. We earnestly hope many years may be given this brilliant discoverer in which to employ his marvelous powers in extending knowledge."

"I sincerely congratulate Mr. Edison on his new departure," is Hiram Maxim's felicitation. "I only hope that his future discoveries will do as much to advance pure science as they have done in the past to further commercial science."

From Berlin, Professor Slaby, the inventor in wireless telegraphy, a teacher in the Charlottenburg Technical School, said:

"I am greatly surprised by the news about Edison, and will await developments with much interest. It might be a question whether Edison's earlier training has fitted him for the abstruse, more theoretic, purely scientific pursuit he undertakes now. On the other hand, it is entirely possible that, in his long and distinguished career, he has gained more technical and purely scientific knowledge than any 'professor' in the world. I wish the great American, than whom none is greater, a long and distinguished career."

"Whatever Edison does will be done well," said Count Argo, Germany's great electrician. "His work in the evening of his life is certain to be interesting. I did not know he is a chemist or an exact scientist, but it is certain that his contribution to whatever subject he turns his powerful mind will be most valuable."

Professor Antonio Poito, of Florence, director of the physical school there and one of Italy's most distinguished scientists, sends greetings to Edison on his new departure, and says:

"Already Edison has triumphed over difficulties which the most learned philosophers would not have dared to confront."

Bargains in Books—A Few More Left.

In our August 1 issue we offered a choice list of electrical books, standard in character, that had accumulated on our shelves, at the uniform price of twenty-five cents apiece. The books were a little shopworn, but otherwise as good as new. The offering attracted a good deal of attention and a large proportion of the volumes were sold. There are still a few left and any who wish to pick up valuable works at a trifling sum, will do well to give this announcement early attention. If desired, any one of these books will be sent to any address on receipt of the price, carrying charges to be collected. Address in ordering, J. B. Taltavall, Telegraph Age, 253 Broadway, New York. The list includes:

"Telegraphy," by Preece, and three volumes of "Patented Telephony," by Amn. Elec. Eng. Assn.; twenty-one of "Manual of Diagrams," by F. W. Smith; two (board cover) and five (cloth cover) of "Handbook of the Electro-Magnetic Telegraph," by Loring; two of "Gleanings," by Booth; two of "Electro-Plating," by Trevert; one of "How to Become a Competent Motorman," by Livermore; two of "Incandescent Lamp," by Randell; one of "Metric System," by Hartford Steam Boiler Insp.; one of "Arithmachinist," by Goldman; one of "Electric Lighting," by Morton and Anderson; one of "Electric Telegraph," by Sabine; one of "Electricity—100 Years Ago and To-Day," by Houston; one of "Telephone Service," by Webb; one of "Synopsis of Current Electrical Literature," by Osterberg; one of "Evolution of the Electric Incandescent Lamp," by Pope; one of "Laboratory Manual of Electro-Therapeutics," by Herdman and Nagler.

In addition to these electrical books there are one hundred copies of "Lightning Flashes and Electric Dashes," a book of 160 large double column pages, profusely illustrated, made up of bright, ably written stories and sketches, telegraphic and electrical, that should find a place in the home of every telegrapher. This book has sold right along at $1.50 a copy. This bargain price puts them at fifty cents, carrying charges to be collected.

The Monrovia Telegraph Company has been incorporated in Arizona, with a capital stock of $1,000,000, the incorporators named being Simon E. Davis, H. M. Moffat, Frank J. Forbes, Joseph P. Lucy and James P. Seneny.

Mr. E. E. Dildine, of St. Paul, Minn., assistant superintendent of telegraph of the Northern Pacific Railway Company, in renewing his subscription a few days ago, included this paragraph in his letter: "I consider Telegraph Age a valuable asset for the telegraph service."

Wireless Telegraphy on Foreign Ships.

The English Postmaster-General has issued the following regulations, effective July 1, respecting wireless telegraphy on foreign ships:

1. Definitions.—In these regulations, unless the context otherwise requires, "wireless telegraphy" has the same meaning as in the Wireless Telegraphy Act, 1904. "Naval signaling" means signaling by means of any system of wireless telegraphy between two or more ships of His Majesty's Navy, between ships of His Majesty's Navy and naval stations, or between a ship of His Majesty's Navy or a naval station and any other wireless telegraph station whether on shore or any ship. "Territorial waters" means such part of the sea adjacent to the coast of the British Islands as is deemed by international law to be within the territorial sovereignty of His Majesty, and includes harbors. "Harbor" includes harbors properly so called, whether natural or artificial, estuaries, navigable rivers, piers, jetties and other works in or at which ships can obtain shelter, or ship and unship goods or passengers.

2. Rules to be Observed.—When communications are made by means of wireless telegraphy between a foreign ship in territorial waters and a wireless telegraph station in the British Islands, the rules in force for the working of wireless telegraphy at that station shall be observed.

3. Interference with Naval Signaling or with Other Stations.—All apparatus for wireless telegraphy on board a foreign ship in territorial waters shall be worked in such a way as not to interrupt or interfere with (a) Naval signaling, or (b) the working of any wireless telegraph station lawfully established, installed or worked in the British Islands or the territorial waters abutting on the coast of the British Islands, and in particular the said apparatus shall be so worked as not to interrupt or interfere with the transmission of any messages between wireless telegraph stations established as aforesaid on land and wireless telegraph stations established on ships at sea.

4. Working Apparatus in Harbor.—(1) Except with the special permission in writing of the Postmaster-General no apparatus for wireless telegraphy on board a foreign ship (other than a ship of war) shall be worked or used while such ship is in any harbor in the British Islands. (2) Without prejudice to the operation of the general provisions of these regulations, the use of wireless telegraphy on board a foreign ship of war while in a harbor in the British Islands shall be subject to such rules (whether prohibitive or regulative) as may be made by the Admiralty from time to time.

5. Control of Apparatus on Emergency.—(1) If at any time in the opinion of one of His Majesty's principal Secretaries of State an emergency has arisen in which it is expedient for the public service that His Majesty's Government should have control over the transmission of messages by wireless telegraphy, and notice to that effect is published by the Postmaster-General, after the publication of such notice, and until further notice, the use of wireless telegraphy on board foreign ships while in territorial waters shall be subject to such rules as may be made by the Admiralty from time to time, and such rules may prohibit or regulate such use in all cases or in such cases as may be deemed desirable. (2) Such notice as aforesaid shall be published in the London Gazette, the Edinburgh Gazette and the Dublin Gazette, and in such other manner, if any, as to the Postmaster-General may seem fit.

6. Penalties.—(1) Any person who shall offend against any provision of these regulations, or of any rules made by the Admiralty thereunder, shall be liable on conviction under the Summary Jurisdiction Acts for every such offense to a penalty not exceeding £10, and upon such conviction the court may order that any apparatus for wireless telegraphy installed or worked on board the ship on which the offense was committed shall be seized and forfeited. (2) For the purposes of any proceedings under these regulations the master or person being or appearing to be in command or charge of any foreign ship shall be deemed to have authorized and to be responsible for the use or working of any apparatus on board such ship. (3) Any summons or other documents in any proceedings under these regulations shall be deemed to have been duly served on the person to whom the same is addressed by being left on board the ship on which the offence is charged to have been committed with the person being or appearing to be in command or charge of the ship.

7. Signals of Distress.—These regulations shall not apply to the use of wireless telegraphy for the purpose of making or answering signals of distress.

Book Review.

In "Telephone Law," issued from the press of the McGraw Publishing Company, New York, the author, A. H. McMillan, A.B., LL.B., legal editor of the American Telephone Journal, presents a view from a legal standpoint respecting the organization and operation of telephone companies. The book is intended, as the author remarks, not for practicing lawyers so much as for persons actually engaged in the telephone business. It, therefore, does not attempt to be exhaustive, but seeks rather to place in compact and concise form such legal information as will be of value to the practical telephone man. The author treats his subject comprehensively, however, showing intelligence, industry and careful research in his compilation. The volume, bound in cloth, contains more than 350 pages, is well printed on good paper with wide marginal leaves, and is carefully indexed; price $3. It will be sent to any address on receipt of price, by John B. Taltavall, Telegraph Age, 253 Broadway, New York.

The Railroad.

Mr. E. F. Raymond has been appointed assistant to F. S. Rawlins, superintendent of telegraph of the Southern Pacific Company, with headquarters at San Francisco.

The Georgia Legislature passed a bill recently to regulate the number of hours of telegraph and telephone operators and other persons engaged in the handling of trains, prescribing penalties for violations of said act.

Mr. A. E. Roome, lately resigned as superintendent of telegraph at San Francisco, of the Southern Pacific Company, has been appointed superintendent of telegraph, telephones and signals of the Pacific Electric Railway Company, at Los Angeles, Cal.

A corps of Pennsylvania Railroad engineers and several members of the operating department, have been studying the electrical equipment at New York of the New York Central Railroad with a view of getting data to be used in the final adoption of plans by the Pennsylvania for the electrification of its New York terminal and the tunnels in which the trains will run under the Hudson and East rivers.

The officials of the Richmond, Ind., division of the Pennsylvania Railroad are reported to have said that they have unsuccessfully tried the use of telephones for despatching and do not regard them as good or as reliable as the telegraph. They say it is difficult to hear over the telephone when the weather is bad or when snow and ice accumulate on the wires. They also say that in transmission of messages words are often misunderstood.

The case instituted in Maryland against the Baltimore and Ohio Railroad Company, charged with working several of its telegraph operators nine hours a day in violation of the state law limiting the working hours of such employes to eight hours a day, will probably be dropped. It is understood that lawyers generally who have examined the law on the subject agree that the federal law limiting the working hours of railway telegraphers to nine hours a day supersedes the state law. State's Attorney Waters, of Maryland, inclines to the belief that the state law is void.

A high official of one of the leading railroads when asked what he thought of the substitution of the telephone for the telegraph in the railroad service, replied that the fact that appealed to him the strongest in railroad work was that in the event of an accident, common on large systems, the train crew can communicate direct with the trainmaster, the train despatcher, the superintendent, as well as all other officials who might wish to listen, obviously something that could not be accomplished by the use of the telegraph under like conditions without great delay.

The officials of the Delaware, Lackawanna and Western Railroad Company express themselves as being so well pleased with the operation of the train telephone circuit lately installed between Scranton and Binghamton that it has been decided to equip the Bloomsburg division, eighty miles in length, with the telephone for despatching trains. Chief train despatchers from the Pennsylvania, Reading and Erie roads visited Scranton recently, witnessed the practical operation of the system and pronounced the service perfect in every particular. Mr. T. E. Clarke, general superintendent of the Lakawanna system, a former operator who has risen from the ranks, expressed satisfaction at the working of the telephone service. Mr. L. B. Foley, superintendent of telegraph, under whose direction the work in this particular is being conducted, also expressed pleasure at the satisfactory results thus far obtained.

Reorganized Telegraph and Block Signal Service, Chicago, St. Paul, Minneapolis and Omaha Railway.

In adapting itself to the situation imposed by the Wisconsin eight-hour law and the new federal law, governing the hours of telegraphers who have to do with train orders, the telegraph and signal department of the Chicago, St. Paul, Minneapolis and Omaha Railway has made use of the telephone and has introduced a number of interesting changes in the telegraph service. By the plan in force about every third station is used for a train-order office, and, to some extent, commercial railway and Western Union messages are handled in interlocking towers. The scheme is said to work out very nicely, and the trains can be moved successfully. Thus far, by adapting the telephone to railway service, this company has been able to comply with the nine-hour law without closing any of its offices.

Telephones have been added to the equipment of a large number of offices and the blocking of trains is carried on by the use of the telephone and by telephoners who may be, but are not necessarily, telegraphers. The principal duty of the telephoners is to block trains, but they are required to perform any other work assigned them.

A telegrapher whose duties have no connection with the movement of trains works twelve hours. He is usually the agent and does railroad and commercial telegraphing. A telegrapher or telephoner connected with train movements works nine hours. The thirdtrick man, at offices open continuously, performs train work for six hours, when he is relieved by the first trick man, and then assists the agent during the remaining three hours of his nine hours on duty. Where but one or two telegraphers or telephoners are employed, the station is closed during the least busy period of the day or night. Telephoners are required to pass the same examination as telegraphers, except that they do not have to qualify in telegraphy.

At present the company is not handling train orders by telephone, sufficient telegraph offices being spaced in between the telephone stations for this purpose.

For these details we are indebted to the kindness of Mr. H. C. Hope, superintendent of telegraph and signals of the Chicago, St. Paul, Minneapolis and Omaha Railway. In commenting on the success of the new system during the three months it has been in effect Mr. Hope says: "Six months ago there were not operators or wires enough to handle the business; to-day we have a surplus of each. The Wisconsin law afforded the railway people—both operator and official—the opportunity of a good education. It is my opinion that inside of two years a large amount of the ordinary telegraphing, including orders for movement of trains, will be handled by telephone. So far we have been successful in maintaining telegraph service at all stations where it existed before the recent restrictive laws went into effect. We do not allow the agent to handle train orders, but want him to meet the general public and take care of their wants as to general railway, telegraph and express business."—Railway and Engineering Review.

Preferably the Telegraph in Train Despatching.

EDITOR TELEGRAPH AGE:

I have read, with great interest, the article in your issue of August 16, "Despatching Trains by Telephone," by Wayne H. Graeff, of Harrisburg, Pa., and would like to state a little instance which happened upon a railroad on which I was employed several years ago.

Among the orders received by a freight train north-bound, reporting at the terminal station, was one stating that a south-bound passenger train would run a certain number of minutes late between two points. The crew of the north-bound train, through an oversight, or possibly thinking that they would have time enough to make the next station beyond before the arrival of the south-bound train, pulled out. The operator at the terminal station did not report at once to the despatcher the departure of the train, (probably due to the fact that the train despatcher was busy issuing train orders and could not break in with his "O. S." report), but the operator at the next station north being a wide-awake fellow and keeping in touch with every movement of trains on that division, heard the north-bound train reported out, possibly ten or fifteen minutes after it had left. He also knew that the south-bound train had passed the next station north several minutes before and should be at his station at that very moment.

Not waiting for the despatcher to call him, he dropped his semaphore signal and rushed out just in time to see the south-bound train rounding a curve but a very few feet ahead, and gave the engineer an additional signal to stop. A minute or two later the freight train arrived. This operator, due to his alertness, had prevented a wreck which, no doubt, would have cost many lives and many dollars. At that place the track was very irregular and it was impossible for an engineer to see more than a few hundred feet ahead of him.

Had this railroad been using the telephone for despatching purposes, the question is, could the despatcher, after discovering the freight crew's blunder, have notified the operator in time to prevent a collision; or, without the tlegraph, do you think the operator would have gained this valuable information? If I am correct, the operators along the line are only supposed to be in on the telephone circuit when called by the despatcher. You may draw your own conclusions.

AN EX-RAILROAD TELEGRAPHER.

Cleveland, O., August 24, 1908.

Train Despatching by Telephone.

A chief despatcher of the Delaware, Lackawanna and Western Railroad Company, in discussing the question of train despatching by telephone, has this to say:

"For the past five or six years there has been considerable discussion concerning the desirability of substituting the telephone for the telegraph in the despatching of trains or steam railroads, but prior to 1907 this subject was principally taken up by parties interested in the telephone business more than by experienced railroad men or train despatchers, and never resulted in anything for several reasons, i. e., a natural prejudice on the part of railroad men grown up in the use of the telegraph—a system so long established that for flexibility it has exceeded anything in the form of telephone that could be expected in a newly installed and untried system, for several years.

"The telegraph in use by all railroads and telegraph companies enables the railroad, in case of interruption to their wires, to borrow wires and by detouring reach the principal points of their road, while by the use of a newly established telephone system, probably limited to one circuit, they would be nearly helpless in trouble of this character.

"Another point which was raised in opposition to the telephone was the prevailing signaling device, which was so objectionable on a heavy party line, such as a despatching circuit would be, as to alone preclude its adoption. This latter objection, however, has recently been removed by the invention of several quick and reliable selector devices.

"Various other minor objections have from time to time been raised, and I might say that the writer was prejudiced against the use of the tlephone for the purpose referred to. But during the last few years something has happened. The scarcity of competent and trustworthy operators has brought the telephone into greater prominence in railroad circles, and has done more to bring about the ultimate supplanting of the telegraph than all other causes combined, hastened, in my opinion, by the mistaken and short-sighted policy of the telegraphers' organizations; and I say this in all sincerity and friendliness, in discouraging the teaching of teleg-

raphy to those desirous of entering that service, to which policy I also attribute the fact that the general personnel of the telegraph service is at the lowest ebb I have ever known it to be since I engaged in the business thirty-five years ago.

"The scarcity of available operators has also been augmented by the operation of the nine-hour work day as prescribed by Congress, and with everything combined the employing companies have been at their wits' ends to keep this branch of the service in safe and satisfactory operation.

"Mainly for these reasons, the railroads, with a view to self-preservation, began to look around for a solution of a perplexing and worrysome problem, and very naturally first thought of the telephone. As is generally known, several roads have since December last made experimental installations and others have studied the matter and investigated. These experimental installations and investigations have proven so successful that it is almost universally conceded that the telephone is the coming apparatus with which to despatch trains.

"There is nothing so convincing as a practical trial, and it has been demonstrated beyond a doubt that the telephone is a safe and rapid means of communication, and that its advantages are so many as to fully, if not more than, offset the disadvantages before mentioned, and it is confidently predicted that within ten years no large railroad in America will be using the telegraph for moving trains. At least, this is the sincere opinion of one who has been prejudiced in favor of the telegraph and has been reluctant to see a profession in which he has spent his whole life superseded.

"Certain it is that the mileage of roads already equipped with telephone and in successful operation would aggregate thousands, and the system is being extended rapidly.

"In conclusion, I might add that in their exaggerated enthusiasm for the telephone, some writers have brought into the subject matters which really have no special bearing on the practicability of its use in railroad work, and with which I cannot agree; such as the assertion that the train despatcher of to-day is a theorist, who might profitably be superseded by conductors and other employes, as also the statement that telephones never get out of order, but are always in proper adjustment. I am glad to know, however, that these assertions, so far as I am aware, have never been made by any one who has been a practical transportation man. Every railroad man of experience knows that the present telegraph train despatcher is not a theorist, but a practical man, and, as to his judgment concerning matters that come under his control, there is no superior in the railroad service."

Telegraphy in Japan.

The Morse signals used in telegrams written in the Japanese characters are fifty in number, in addition to those representing figures, and the signs of punctuation, etc., says St. Martin's-Le-Grand. These signals are partly composed of those representing the Morse alphabet, and partly of additional combinations of dots and dashes.

Telegraphically speaking, about 3.65 Japanese letters are equivalent to one word in English, which on an average consists of 4.67 Morse letters, and therefore one Japanese Morse signal corresponds to 1.28 international Morse signal. It may be perhaps interesting here to note how Japan is related telegraphically to foreign countries. Of the whole number of foreign messages forwarded or received, and which amount to some 800,000 a year at present, about forty per cent. are credited to Korea, twenty-eight per cent. to China, nine per cent. to England, seven per cent. to the United States, four per cent. to India, three per cent. to Germany, two per cent. to France, two per cent. to Russia, and four per cent. to all other countries.

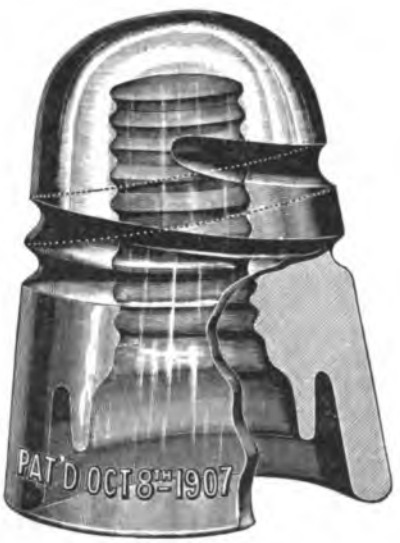
Book Review.

One of the latest contributions to the closely allied subjects of wireless telegraphy and telephony, and we may say one of the best, is that prepared under the joint authorship of Walter W. Massie, of Providence, R. I., and Charles R. Underhill, of New York, bearing the title of "Wireless Telegraphy and Telephony." Mr. Massie is the inventor of the wireless system, and president of the company, bearing his name. Mr. Underhill is a telegraph expert, and while the inventor of a wireless telegraph printing system is better known as an authority on electro-magnets and solenoids. This little volume of seventy-six pages, which is just off the press, undertakes to deal with and explains the questions now engaging so much attention, in a manner that may be termed "popular." While technecalities have been avoided, in order to bring the presentation within the scope of the non-technical mind, nothing has been sacrificed because of that fact to impair the value of the text. The volume which is illustrated by twenty-seven figures, describes the substance through which signals are sent, the theory of the propagation of waves, method of generating and receiving the waves, the apparatus used, and, finally, the uses, limitations and possibilities of wireless telegraphy viewed both from a commercial and financial standpoint. The book concludes with a statement contributed by Nikola Tesla respecting the future of the "wireless art," as he terms it. This book will be sent to any address on receipt of the price, $1.00. Address J. B. Taltavall, Telegraph Age, 253 Broadway, New York.

Mr. C. B. Horton, manager of the Western Union Telegraph Company, Lincoln, Neb., in remitting to cover his subscription for the current year, remarks: "Thanks for renewing my subscription; would not discontinue for double the consideration."

The Barclay Improved Insulator.

The Barclay improved insulator, of which a cut is shown herewith, and which is the invention of J. C. Barclay, the assistant general manager and electrical engineer of the Western Union Telegraph Company, New York, has a spiral groove on its outer surface so threaded that when unscrewed from its pin the tie holding the wire is also unscrewed or removed from the insulator. The reverse operation, of course, screws the insulator on the pin and at the same time puts the



THE BARCLAY INSULATOR.

tie wire back in its original position on the insulator. The object of this insulator is to save labor and expense in renewing glasses when broken or otherwise defective, and in the transfer of wires from one position on a pole to another, all of which is accomplished without untying and re-tying the wire. It is well known that the removal of a tie and the re-tying of the wire to an insulator is not only expensive, but damaging to the wire itself, which, if copper, is certain to be seriously injured in the operation.

This insulator is manufactured by the Brookfield Glass Company, of New York.

The National Electrical Code.

In a paper read before the Canadian Electrical Association by H. F. Strickland, chief electrical inspector of the Canadian Fire Underwriters' Association, he had this to say regarding the formation of the National Electrical Code:

"The National Electrical Code was originally drawn in 1897, as the result of the united efforts of the various insurance, electrical, architectural and allied interests which, through the national conference on standard electrical rules, composed of delegates from various national associations, unanimously voted to recommend it to their respective associations for approval or adoption, and is now presented by the National Board of Fire Underwriters with the various amendments and additions which have been made since that time by them.

"As an evidence of the approval of the National Electrical Code, it might be interesting to know that the following institutions compose the National Conference on Electrical Standards, viz.: American Institute of Architects; American Institute of Electrical Engineers; American Society of Mechanical Engineers; American Institute of Mining Engineers; American Street and Interurban Railway Association; Associated Factory Mutual Fire Insurance Companies; Association of Edison Illuminating Companies; International Association of Municipal Electricians; National Board of Fire Underwriters; National Electric Light Association; National Electrical Contractors' Association; National Electrical Inspectors' Association, and the Underwriters' National Electric Association.

"As a further evidence of the broadness of the National Electrical Code, it would be interesting for many people to know that the amendments which are generally conceded to be advantageous in the code are made at annual conventions held yearly in New York City.

"Some little time previous to each annual convention circulars are sent to the various members calling for sugestions as to proposed changes in the code at the coming convention. These changes are received by the secretary of the Underwriters' Association and are submitted to an electrical committee, who carefully consider each suggestion received. If the suggestion does not warrant any consideration, it is thus reported at the convention. If, on the other hand, they see any value in the suggestion, it is reported also for consideration. Each suggestion, whether approved by the electrical committee or not, is nevertheless mentioned in the proceedings of the convention, and those which have not been fully considered by the committee may even then be discussed by those present if anyone brings the question up. As a rule, however, those suggestions which have not been considered worthy of thought by the electrical committee do not call forth any further discussion. In this way much time is saved and only valuable suggestions are considered.

Mr. Harry Morlan, formerly manager of the Postal Telegraph-Cable Company, at Kansas City, Mo., and who now is in the wholesale postcard business at Dallas, Tex., in renewing his subscription, writes: "Although I have left the telegraph service I could not do without Telegraph Age, which I have read for fifteen years and hope always to remain a subscriber."

Every telegrapher who loves his profession, who is determined to master its technicalities, and thus insure for himself the confidence and respect of his official superiors and place himself in the direct line of promotion, should subscribe for and become a careful reader of Telegraph Age.

Wigwagging Before the Telegraph.

During the demolition of the old Custom House in Wall street, New York, several old flags were found underneath the flooring of the upper story. The supposition was that they had been used for the announcement of the arrival of certain ships. It was ascertained that these long hidden flags had been used for a number of years before the electric telegraph line was built between Jersey City and Philadelphia, in 1845, in wigwagging stock market quotations and numbers drawn in lotteries between New York and Philadelphia. From the roof of the old Custom House, then the Merchants' Exchange, a flagman signaled to a man on Bergen Hill, N. J., who in turn signaled to a man six miles away, and so on, to Third and Market streets, Philadelphia. This flag signal service communicated a ten-word message in about two hours on days free from fog or snow storms. At times the service was supplemented by a lantern method of communication.

When the Morse telegraph line came into use between Philadelphia and Jersey City, for a time the messages between New York City and Jersey City were wig-wagged between the telegraph offices. Thereafter a line was built along the Jersey shore of the Hudson River a few miles northward, to reach a narrow part of the river, where a wire was stretched over and thence continued to New York City, making a circuit of about thirty miles, because it was not believed that a submarine cable was practicable, although S. F. B. Morse and Alfred Vail had made successful experiments with a submerged line of electric telegraph to Governor's Island, New York harbor, some time before the line was built between Washington and Baltimore.—Chicago Popular Electricity.

The Telegraph in New Zealand.

The telegraphic system of New Zealand increased by 1,633 kilometers of line and 5,380 kilometers of wire during the year 1906-7, and attained a development of 14,415 kilometers of line, and 43,520 kilometers of wire, while the number of offices increased from 1,200 to 1,447. The system dealt with 6,160,080 private and press telegrams, and 236,252 Government telegrams, making a total of 6,396,332 telegrams, an increase over the previous year of 756, 113. The average per person for telegrams sent, is 6.84. The Pacific cable took 25,280 ordinary and 36 press telegrams to Australia, a total of 25,316, while the Eastern Extension Cable Company handled 3,431 ordinary, and 153 press, or a total of 3,584 telegrams. It will thus be seen that the collections of the Pacific Cable of traffic for Australia exceed the Eastern very largely. As regards traffic from New Zealand to other countries than Australia, it is found that while the Pacific cable handled 68,919 ordinary, and 632 press telegrams, the Eastern Extension Cable Company handled only 8,091 ordinary, and 994 press telegrams; the total collections on all traffic originating in New Zealand are 94,867 by the Pacific, and 12,669 by the Eastern company, thus showing that the Pacific cable has a strong hold in New Zealand. The cable traffic for the year 1906-7 exceeded the previous year's figures by 14,043. Ordinary traffic to New Zealand increased from 81,717 to 95,568 telegrams, of which 67,216 were carried by the Pacific cable and 28,352 by the Eastern Extension Company, so that even here the Pacific cable captures about 66 per cent. of the traffic.

Nature of Charges of Positive Electricity and the Existence of Positive Electrons.

We know, says Jean Becquerel in an article in "Comptes Rendus," that the charged radiations of negative electricity (cathode rays, B-rays) are formed by a flux of corpuscles called electrons, whose mass, 2,000 times smaller than that of the hydrogen atom, appears to be of an electromagnetic nature, and which may be regarded as intermediary between the ether and ponderable matter. On the other hand, the actually known positive radiations (a-rays, canal rays, anode rays) are constituted, not by electrons comparable to the negative particles, but by ions possessing a mass at least equal to the material atom of hydrogen.

The existence of positive electrons appears hardly to be admitted at present. Many physicists think that the positive charges of atoms result from a lack of negative electrons, and do not accept a second constituent of matter. Yet some physicists, finding difficulties in the way of accounting for the properties of metals by means of negative electrons only, have introduced the hypothesis of positive electrons, although hitherto no fact has revealed their real existence. The absolute lack of data on this important question at present retards the progress of our knowledge of the constitution of matter. The study of magneto-optic phenomena in the rare earths, pursued for two years along the whole scale of temperature, furnished, for the first time an experimental basis for the hypothesis of positive electrons.

Death of John Brant.

John Brant, one of the best known telegraphers in New York, and for many years the secretary of the Old Time Telegraphers' and Historical Association, died after a prolonged illness covering a period of several years, at his home in Brooklyn, 892 Greene avenue, on the morning of Wednesday, August 26. Funeral services were held at his late residence on Thursday evening, August 27, a large number of telegraphers, former associates, and other friends, being present. Rev.

THE LATE JOHN BRANT.

Amos Judson Bailey, formerly a telegrapher at Cedar Rapids, Ia., delivered an eloquent and touching eulogy on the life and character of the deceased. Mr. E. F. Howell, an old friend, secretary of the Serial Building Loan and Savings Association, also delivered a short address.

The death of Mr. Brant, although not unexpected, nevertheless came as a distinct shock to many, and his passing away has occasioned a feeling of profound regret in local telegraph circles and among telegraphers the country over, for wherever known he was held in high esteem. He was a man who attracted others to himself because of an affable manner; as a friend he was loyal. Strict integrity and uprightness marked all of his dealings. His character was above reproach. As secretary of the Old Time Telegraphers' and Historical Association, he was an intelligent, indefatigable and conscientious worker, contributing freely of his time to promote the welfare of that organization and of its individual membership. This was shown in many ways and in none more strikingly than his ability, because of wide acquaintance, to procure in former years, railroad transportation for members who desired to attend the annual reunions of the association, although such service was attended frequently with infinite labor. His tall, robust form and cheery friendliness will be missed at [illegible] conventions, as his absence of late years was deplored because of his inability to attend incident to growing weakness.

John Brant was a native of Salisbury, Litchfield County, Conn., where he was born December 17, 1848. He became identified with the telegraph when sixteen years of age at Dover Plains, N. Y. Subsequently he was stationed for two years at Pawling, N. Y., going thence to White Plains, N. Y., where he held the dual position of railroad station agent and operator. After three years spent at that point Mr. Brant came to New York, and on March 29, 1870, entered the service of the Western Union Telegraph Company, the main office of which was then located at 145 Broadway. His first and only assignment was to the Bridgeport, Conn., circuit, a wire he worked continuously until failing health compelled his retirement. Mr. Brant was a member of the Telegraphers' Mutual Benefit Association, The New York Telegraphers' Aid Society, the Magnetic Club, and other telegraphic associations. He was married in 1891 to Miss Lena J. Allen, herself a former telegrapher, who survives him.

Obituary Notes.

George W. Jaggers, a telegraph operator, twenty-six years of age, because of despondency due to ill health, committed suicide at Kansas City, Kan., on August 10.

Dr. W. M. Habirshaw, president of the Habirshaw Wire Company, New York, died of apoplexy at his summer home at Saratoga, N. Y. on August 16, at the age of seventy- four years. Dr. Habirshaw was an expert in insulation and was widely known in telegraph and electrical circles.

Fred. B. Holcomb, aged forty-five years, one of the oldest telegraphers at Watertown, N. Y, in point of service, died of consumption in that city August 2, after an illness of about two years. Mr. Holcomb had for about twenty years held a position in the Western Union telegraph office in Watertown, and had remained at his work there until April 14, when he was compelled to forsake his key for his bed. Mr. Holcomb during the entire time of this period of service was the agent of Telegraph Age.

Concrete Poles in England.

A Swiss invention for making hollow concrete poles for telegraphic, telephonic and power-transmission purposes is now being worked in England. In making these poles the concrete, which is mixed very dry, is applied around a core of sheet-iron and a pressure of 5,000 pounds applied. The system of manufacture involves the use of a conveyor belt and webbing which, while applying the pressure named to the concrete, at the same time embeds longitudinally wire rods into it, after which wire is wound around the outside spirally. Such reinforced poles are said to have been used to a large extent upon the Continent, and the prices quoted under the new system are some sixty per cent. cheaper than the ordinary poles which have been used hitherto.

Convention of the International Association of Municipal Electricians.

The International Association of Municipal Electricians held their thirteenth annual convention at Detroit, Mich., August 19, 20 and 21. There was a fair attendance, greeting to which was extended by R. A. Smith, of Norfolk, Va., president of the association. Mayor William B. Thompson was introduced to the electricians who welcomed their coming to Detroit with earnest and well considered remarks. He applauded the wisdom that prompted the organization of the electricians, recognizing the importance of the annual meetings which brought so many intelligent men together from the chief centers of population to compare methods and discuss the welfare of their respective cities, and of municipalities in general, so far as electrical interests of which the delegates were representative, were concerned.

J. B. YEAKLE, BALTIMORE, MD.
President, Association of Municipal Electricians.

A large amount of routine business was dispatched on the first day and papers on "Modern Police Signal System" and "Testing for and Locating Faults in Electrical Systems" were read and discussed, in which President Smith took an active part.

Papers and discussion on the themes introduced occupied most of the second day proceedings. Jerry Murphy, superintendent of police telegraph of Cleveland, presented the question of "Modern Police Signals," in an admirable paper, Clarance R. George, of Houston, Tex., being one of the prominent speakers in its discussion.

The "question box," so called, the depository of questions accumulated through the year of queries calling for reply at the convention, and which in a number of instances were provocative of remark leading to discussion, was as usual an interesting feature of the meeting.

The papers read others than those mentioned were: "Combination Cables for Fire and Police Signal Systems; "Moving Picture Hazard"; "Batteries for Signaling Systems," and "Electrical Equipment of a Fire Station," all of which were productive of much interested discussion.

The election of officers was held on the morning of the last day of the convention, vice-president J. B. Yeakle, of Baltimore, being elected to the presidency; W. S. Devlin, of New Castle, Pa., was made first vice-president; H. C. Bundy, of Watertown, N. Y., second vice-president; F. A. Cambridge, of Winnipeg, Man., third vice-president; C. R. George, of Houston Tex., fourth vice-president, while Frank P. Foster, of Corning, N. Y., was re-elected secretary and C. E. Diehl, of Harrisburg, Pa., treasurer. Among the department committees named was that of the police signal consisting of Messrs A. C. Farrand, Jerry Murphy, and A. L. Kittridge; and that of the fire telegraph, which included C. F. Gall, S. W. Manning and H. C. Bundy. It was voted to hold the convention of 1909 at Atlantic City, N. J. The social features of the occasion offered an attractive programme which were entered into with zest and which were much enjoyed, the concluding function after a luncheon at Belle Isle being a most delightful boat ride.

There were numerous exhibits on view of electrical devices for which space had been reserved in the convention hall.

Municipal Electricians.

Chief Operator Andrew Martin, in charge of the fire alarm telegraph bureau of the fire department, New York, is busily engaged in formulating plans for the installation of the new fire alarm telegraph system that will be put in service as soon as the annex to the fire headquarters building is completed. The whole of the top floor of the old and new buildings will then be used exclusively for the fire alarm service, which at present is very short of space for the amount of business that has to be done. The rapid growth of the city the past decade has rendered it absolutely necessary that the fire alarm system be brought up to date. The battery room is overcrowded and one-half the space of the telephone operator's quarters is taken up with batteries. When the battery room is transferred to the annex, the telegraph operating room will be extended to include the space now taken up by the batteries. The instrument- maker's room will also be in the annex and the space now occupied by this branch of the service will be added to the telephone operating department. The telephone operators are very much cramped for space at present, and the proposed changes will be welcomed by the operators, as the noise of the instrument-maker's lathes interferes with the successful and efficient operation of the telephone.

Michael R. Brennan, who had been in the Police Department, New York, thirty years and for the last fifteen years superintendent of the telegraph and electrical service, was retired on August 3 by Commissioner Bingham.

LETTERS FROM OUR AGENTS.

It will be noticed that a number of agents have responded to the request made in this column by sending notes from several different points We were pleased to receive the information which these contributions convey, and we hope for a larger response for publication in the next issue. One writer, however, wrote in rather a grim mood to the effect that there were absolutely no changes in his office since the hard times set in, that no one would resign and that no one would die, all holding on to what they had apparently with a firm purpose to "see the thing out." All we can say is that this expressed determination is in accordance with eminent good sense.

The current information of any office will, if carefully chronicled, furnish a welcome digest of news that will be read with pleasure and satisfaction by thousands, and this limit should constitute the legitimate contents of all letters. And we wish that our correspondents would avoid the too frequent habit, at all times a bad one, of abbreviating words in writing. This is a peculiarity among telegraphers, we know, but what may be plain to the writer, and for local interpretation, is usually a mystery to the editor, and is apt to lead to an error in the printed statement.

CHICAGO, WESTERN UNION.

Those from this office who were assigned to duty at Denver at the time of the Democratic convention, appear not only to have enjoyed themselves at the Colorado city, but to have performed work that has called forth much favorable mention. An instance of this is shown in a letter from Superintendent F. H. Tubbs addressed to chief operator A. B. Cowan in which the Chicago office is highly complimented on the good work of the men who were sent to Denver, a recognition that has been much appreciated.

Business is holding up very well at present and the men are making some better time than they did in the early summer.

L. N. Thompson, assistant wire chief, has accepted a position as wire chief on the new extension of the Chicago, Milwaukee and St. Paul Railroad. His place on the West board has been taken by S. H. Nolly.

R. D. Welch of the east switchboard has resigned to accept a position with a brokerage firm in his home town of Des Moines, Ia. He is succeeded by R. O. Burke of the night force.

C. H. Kruse, who was badly burned in a railroad wreck near Arkadelphia, Ark., last December, has recovered and is now employed in this office.

Charles White, formerly division chief in this office, but now located in Oklahoma City, Okla., was a recent visitor.

J. J. McCormick(of the Barclay printer, is ill with pneumonia.

Among those who have resumed their places after a vacation are: C. H. Finley, F. H. Gournee, F. T. Thomas and J. F. Costello.

PITTSBURG, POSTAL.

The fine new office here continues to win golden opinions from all who are in any way associated with it. The appointments of the operating room are such that in the matter of ventilation, of abundant space, of light and in up-to-date equipment, it offers especial attractions to the operator. When to these conditions is added the fact that the people here are agreeable to work for and among, the desirability of the Pittsburg environment may be judged.

There has been a constant going and coming among vacationists. Among those who have been away and are now back at their accustomed places are: F. L. Bender, wire chief; W. M. Munson, traffic chief, and Mrs. Margaret Hammond, city chief.

Those who are absent include: George W. Dull, wire chief, and George O. Morse, repeater chief.

Miss Ruby Barnes is relieving at Warren, Pa., and locally Miss Emma Sellers and Mr. Wallace are relieving at branch offices, while Miss Anna McCauley is stationed at the National Tube Company, and Mr. McMillen at the office of Darr, Luke and Moore.

PHILADELPHIA, WESTERN UNION.

Mr. C. B. Wood sailed for Europe August 25, to be absent on a vacation that will cover six weeks.

Other absentees are: D. Good, John McCoy, Miss Arthur, Miss Bessie Sacks, Miss Fannie Schott, Miss Ormeston, Miss Helen Ober, and Miss Anna M. Tiernan.

Among those who have returned from their vacations are: Charles Unruh, John McCarthy, Dennis Burns, and Harry Wobensmith, chief clerk.

ST. LOUIS WESTERN UNION.

A Barclay printing circuit is to be established between this and the Nashville office.

Superintendent George J. Frankel announces the transfer of Miss Mary Burke as manager from Van Buren, Ark. to Fayettevillle, Ark.

Vacation time has its votaries in the telegraph forces in St. Louis as well as elsewhere. Hence it is that George A. Riber, quadruplex chief, is away, leaving his position to be filled temporarily by W. J. Armstrong; J. H. McHugh, stock operator, is finding recreation in Buffalo,, while Miss Nell Ruhlman, force clerk, is visiting at Youngstown, O.

George Harrigan, former division chief, is back from a trip to New York; also Miss Martha Russell, who has been absent at Holden, Mo.

During the recent Democratic convention at Denver the St. Louis Wheatstone department did splendid work. Miss B. Guidra was at the receiver, being relieved occasionally by Miss Mary Tynan and Mrs. W. H. Denwiddie, all of whom are Wheatstone experts. Among the expert tape senders were R. E. Norman, Henry Horstman, Mrs. F. S. Spencer, Misses Rose Berg, Nellie

Frazier, Agnes Tobin, Eva McEnery, Mamie McLaughlin and Lou McEnery.

New York Items.

Mr. J. H. Russell, a former telegrapher, now holding the position of district plant chief of the American Telephone and Telegraph Company at Maumee, O., recently visited New York, finding a welcome among numerous telegraph friends.

Mr. Sanford M. Fones, an old-time telegrapher, and now district plant chief of the American Telephone and Telegraph Company, at Syracuse, N. Y., was in New York a few days ago, when he took occasion to call upon a number of old telegraph friends.

Mr. E. J. Wehrley, special agent of the American Telephone and Telegraph Company, New York, a well-known former telegrapher, spent a very delightful vacation recently in Boston, making that city the "hub" of numerous radiating excursions.

The Man Who Cheats His Work.

An employer of thousands of men was asked what thing in all his large operations gave him the most concern, remarks the Saturday Evening Post. "The man who does a little less than is expected of him," was the reply. "He is the dangerous factor in all business. The absolute failure we readily discover and discharge, but the 'almosts' escape detection for months and often for years, and they make our losses as well as our fears," and with a very serious smile he added, "The drip in business is worse than the leak."

It is a condition that is as old as human experience. Eighteen and a half centuries ago Seneca put it in these words : "Some portion of our time is taken from us by force; another portion is stolen from us ; another slips away. But the most disgraceful loss is that which arises from our own negligence ; and if thou wilt seriously observe, thou shalt perceive that a great part of life flits from those who do evil, a greater from those who do nothing, and the whole from those who do not accomplish the business which they think they are doing."

Thousands of men fancy they are fulfilling their duty to their employers and to their tasks by keeping hours and performing just enough to hold on to their positions. They have an idea that to do more wold be to give larger service than their compensation required. They object to what they believe would be extra value. "The old man shan't get more than he's paying for," is the vernacular.

Possibly it never strikes these trimmers that in cheating their work they are doing double damage; they are injuring their employers much, but they are robbing themselves more; they are, in fact, losing everything in life that is worth while. They fare worse than if they did nothing at all, for time with all its precious values slips entirely from them and leaves no substance or satisfaction.

Half doing soon brings undoing. It is the nine-tenths doing or the ninety-nine one-hundredths doing that bleeds business and saps character.

The Reunion of the Old Time and Military Telegraphers.

As the time approaches for the reunion of the Old Time Telegraphers' and Historical Association and the Society of United States Military Telegraph Corps, at Niagara Falls, on September 16, 17 and 18, interest in the affair appears to be on the increase. The military telegraphers, especially, expect a large and representative attendance of its membership, which will include such men as Colonel Robert C. Clowry, Colonel William B. Wilson, Charles A. Tinker, Colonel Albert B. Chandler, David Homer Bates, and Colonel William R. Plum. It is hoped that the occasion will serve to bring together a greater number of the military telegraphers than have assembled at these gatherings in late years. As an attractive programme of entertainment has been provided to cover the three days of the meeting, which will include a banquet at the Cataract and International Hotels on the evening of Thursday, September 17, a fine time is distinctively in prospect.

On the evening of August 27 a dinner was given at the Press Club, Chicago, by Messrs. William R. Plum, J. E. Pettit, A. H. Bliss, A. W. Nohe and J. R. Dixon to their comrades of the military telegraph residing in the vicinity of Chicago, the object of the affair being to talk over the coming reunion at Niagara Falls, and to devise means to secure as large an attendance as possible from the West.

The recent death of John Brant, the secretary of the Old Time Telegraphers' and Historical Association, was profoundly regretted, for he had endeared himself to all of his associates in the dual associations to an unusual degree. The issues of Telegraph Age of September 16 and October 1, will be largely devoted to a full chronicling of the reunion and of its eventful happenings.

One of the best advertised telegraphers in the United States is Frank N. Roberts, chief operator of the Postal Telegraph-Cable Company at Chicago. This distinction has been thrust upon him by the perversity of a slug of type appearing under the picture of Mr. Roberts in the August 16 issue of Telegraph Age, which accredited that gentleman to the Western Union service rather than to that of the Postal, and which successfully resisted removal although a corrected slug was prepared and ready to take the place of the faulty line. It is asked, "Can such things be?" Yes, Alas! sometimes in a printing office. And an error looks very glaring when appearing in cold type.

Commercial Cable Employes' Outing.

The employes of the Commercial Cable Company had their first outing on August 16, an event which hereafter is to be an annual affair. The meeting was at New Dorp, Staten Island. The weather was all that could be desired and a large crowd of friends and competitors witnessed some excellent performances. Prizes to the value of $500 had been presented by Clarence H. Mackay, president of the Commercial Cable Company, and valuable prizes were offered for each event. The swimming contests, which were evenly contested and produced some very close finishes, occupied the morning programme.

Lunch was served at Lange's Athletic Pavilion, after which the main events were commenced.

These concluded, dinner was served at E. Hett's Hotel, one hundred and fifty persons being present. The prizes were presented by S. F. Austin, the assistant superintendent of the New York office, and each winner was the recipient of a hearty round of applause on receipt of his prize.

Much of the success which attended the meeting was due in a great measure to the efficient manner in which the programme was handled by J. J. McHugh, the official starter of the Amateur Athletic Association.

The Royal (Visible) Typewriter. Irrespective of price ($65.00). Absolutely the best typewriter for message, press or railroad work. Easy monthly payments. Rental three dollars monthly. Old style "blind" machines taken in exchange. Booklet on request. Address personally D. A. Mahoney, care Roval Typewriter Company, New York City.

Telegraphers' Mutual Benefit Association.

Assessment No. 482 has been levied by the Telegraphers' Mutual Benefit Association to meet the claims arising from the deaths of Miller Hawk, at El Paso, Tex.; John C. Witt, at Houston, Tex.; Robert Yates, at Rockaway, N. Y., and Thomas T. Rabbitt, at Washington, D. C.

Mr. N. R. Young, has been appointed agent for the Telegraphers' Mutual Benefit Association at Washington, D. C., to succeed Mr. W. H. Young, lately deceased.

Learn stenography in your spare hours. Operators make good stenographers. I can teach you by mail at your homes—distance no obstacle. Terms so reasonable that all can afford to learn. Write for particulars. Eugene Davis, LL.B., law and legislative reporter, formerly reporter of debates, United States Senate for The Associated Press. Address Box 22, Madison Square Station, New York City.

The Atlantic Telegraph Company, of which Robert Morton is general manager, has recently removed its headquarters from Lowell, Mass. to 61 Hanover Street, Boston.

Notice.

Advertisers who use this special want column obtain excellent results therefrom. Frequently when expert help is required in any branch of the telegraph or allied services, as a rule the very best men available have been secured through the medium of this department. This has been so uniformly the outcome as alike to satisfy advertisers and please the publisher. Replies to advertisements coming as they do from all parts of the country, prove that these short, pithy advertisements catch the eye of thousands of readers.

A saving man comes out ahead. The Serial Building Loan and Savings Institution, 195 Broadway, New York, long established, not only affords absolute safety for the depositor, but pays him five per cent. for his money, helps him to acquire a home when desired, making the conditions of payment unusually easy and attractive. Correspondence is desired.

Advertising will be accepted to appear in this column at the rate of twenty-five cents a line, estimating eight words to the line.

Rebuilt number six Fay-Sholes; also number six Remington, both in good condition; fifteen dollars each; be quick; address "Typewriter", care Telegraph Age.

WANTED.—Information as to whereabouts of Operator E. J. Hamilton. Address "S," care Telegraph Age, New York.

Will buy or sell, in one to ten-share lots, Western Union Telegraph Company and Mackay Companies, stocks. Remittances by New York draft or express money order are requested. Address "Stock Investment," care Telegraph Age, 253 Broadway, New York.

To-morrow spells failure. Do it to-day.

Rubber Telegraph Key Knobs.

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No. 18. NEW YORK, SEPTEMBER 16, 1908. Twenty-fifth Year.

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The chemical, like the mercury vapor rectifier, is a device for transforming alternating currents into direct currents and accomplishes that end in like manner through the three-cornered arrangement of one cathode and two anodes.

The accompanying diagram, Fig. 1, shows the connections and coil arrangement of the secondaries in the supply transformer. It will be seen that the type of transformer used differs from the ordinary pattern inasmuch as the secondary possesses a center tap, and that more than one secondary is usually put into each transformer, the number being regulated in accordance with the value of the direct voltage desired. If, for instance, a direct voltage of, say, 100 is required, one transformer with one primary and two secondaries, as illustrated in the diagram, is advisable, the primary, of course, being wound suitably for the supply pressure to which it is connected. Only a single phase is used, so the number of cycles of current need not be considered.

If a direct current of 50 volts pressure is desired from each cell, the secondaries of such cells must be wound to 100 volts A. C. for the reason that one-half of the winding is always "dead" because a positive current will not flow from one aluminum rod to the other, or from either aluminum rod to the lead plate, while a negative current will pass from either aluminum rod to the lead plate freely. This causes the aluminum rod and the half secondary attached to it to be "dead" when it is positive and "alive" when it is negative, thus invariably creating positive at the center tap. If an external circuit be connected at this point it is obvious that a continuous or direct current will flow therein.

The object in having more than one secondary and jar is to avoid the possibility of a too-high A. C. voltage, forcing a positive current from one aluminum rod to the other. However, there is really very little chance for this to happen, as it would require more than a thousand

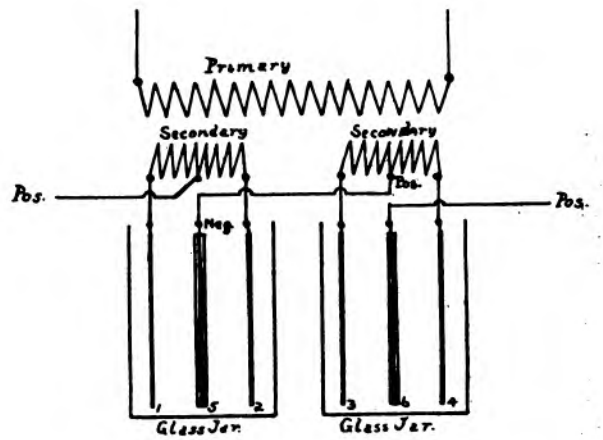

FIGURE I.

volts to do it where the liquid solution in the jar is in good condition.

THE SELECTOR.

The selector is a comparatively recent invention. Its purpose is to select a particular office or station from a number of others on the same circuit and at that point only ring a bell continuously until the party signaled shuts it off by means of a push button or other device. The operation requires but a very few seconds of time after which the wire may be immediately placed in regular service again. The principal advantage possessed by the selector as a call-box system is that it is a "long distance" method and does not prohibit the regular use of the wires through its connection therewith.

The principle of operation is almost identical with that employed in unlocking a combination safe lock. For instance, no amount of turning or twisting of the knob or handle of a safe door will unlock it unless the movements are done in a

methodical manner, step by step, and in a regular order of rotation.

In the selector system the lever of the ordinary Morse relay in the circuit actuates the mechanism of the selector controlling the prearranged combination through its back-stop contact point, which latter, of course, is especially insulated from the front stop controlling the regular Morse sounder. The regular local battery operates both the sounder and the selector magnet according to the position of the relay lever.

It is obvious that the selector, like the handle of the safe door, may be kept in irregular activity all day without unlocking. Hence, the regular movements of the relay lever which occur at all times when the Morse circuit is in operation cause no signal to be recorded, but the moment the prearranged call, usually consisting of five figures, are transmitted over the line in a methodical step by step manner, the mechanism of the selector is unlocked and releases a little lever which then closes a local circuit containing a bell and rings it. The moment the bell circuit is closed an automatic signaling device at that station becomes active and returns an answering signal to the calling station, thus announcing the actual delivery of the first call.

The unlocking signals are transmitted over the line by means of an ordinary breakwheel and crank similar to those used in the ordinary call-box systems. Each opening of the circuit thus causes the distant Morse relay lever to fall to the back stop. In this position the lever shifts the local battery to the magnet of the selector and thus actuates the armature controlling the unlocking mechanism.

The signal usually consists of five figures, each numeral of which is represented by as many "dots," or, rather, openings of the circuit, as the figure represents. Thus No. 12345 would be transmitted as one, two, three, four and five dots or breaks, respectively, instead of Morse, characters representing the figures.

In telegraph service it is possible to make these signals by hand instead of using the breakwheel. The system is also adapted to telephone circuits and although the arrangement is slightly modified, the principle of operations is the same.

Business Notice.

The business of the Battery Supplies Company, Newark, N. J., manufacturers of the Gladstone Lalande battery and the newer type known as the Bsco battery, has been acquired by the Edison Manufacturing Company, Orange, N. J., together with all patents, rights, etc., appertaining to the manufacture of those batteries. On September 1, 1908, the name of Battery Supplies Company was discontinued, and that company merged with the Edison Manufacturing Company, Orange, N. J. The essential features of the Gladstone Lalande battery being similar to those of the Edison primary battery, and as the Gladstone battery elements were designed to be interchangeable with the Edison types, the Gladstone Lalande battery will be retired, and cells or renewals of the Gladstone Lalande battery should be ordered by the Edison types. The Edison Manufacturing Company will continue to make the Bsco 350-ampere hour cell for railroad work, and in addition the same type of cell, with special low-temperature electrolyte, for the same class of work at points where low temperatures affect the ordinary sodium hydrate electrolyte. The Bsco battery will also be manufactured in the 200-ampere hour size, in two different styles; one with a liquid-tight, steel enameled jar, for portable engines and marines used on fresh water; the other with a liquid-tight porcelain jar for use on launches running in salt water and on stationary engines.

Recent Telegraph Patents.

A patent, No. 895,350, for a multiplex telegraph system, has been awarded to Amor W. Douglas, of Albuquerque, New Mexico. A multiple telegraph system in which sending and receiving signaling apparatus responsive to alternating currents are employed in connection with a simple Morse system.

A patent, No. 895,714, for a binding post, has been secured by Garrison Babcock and Josef Reuter, of Rochester, N. Y. The base member has an incline clamping face at one end and a pivot slot at the top. A clamping plate is forced down on the wire by a threaded nut.

A patent, No. 895,747, for a binding post, has been obtained by Monroe Guett, of Hartford, Conn. The cylindrical binding post has two openings into the central bore. Non-rotatable binding studs movable lengthwise through the openings are connected by a bridge.

A patent, No. 897,062, for a cable terminal, has been granted to Frank B. Cook, of Chicago. A cable terminal used with telephone, telegraph and other electrical cables for the purpose of distributing the conductors of the cables and protecting the same against injurious electricity of various forms.

A patent, No. 897,454, for a telegraphic transmitter, has been awarded to George A. Cardwell, of New York. A mechanical transmitter for attachment to a typewriter whereby the signals in any desired code, such as the Morse alphabet, may be automatically transmitted by the ordinary operations of manipulating the typewriter keys.

A patent, No. 897,662, for a telegraph selective system, has been taken out by Alfred Moss Roberts, of Buffalo, N. Y. A telegraph system in which code signals are automatically switched or directed to a mechanism which causes a printing or recording of the particular letter corresponding to the code signal. It is a multiplication of a quadruplex telegraph system.

The Barclay Printing Telegraph System.

BY WILLIAM FINN.

(Part VII.)

THE TRANSMITTER—CONTINUED.

In order to insure satisfactory work at the required speeds, the regulation of the various parts named must be very precise, as must also that of the jockey wheel, J*, which is a device of considerable importance, inasmuch as it completes the work of the collet rods by securely holding the reversing lever in either of the positions into which it is thrust by the action of the collets. This wheel or roller is fixed at the end of a flexible spring, which presses the roller down upon the uppermost edge of the lever and jerks the latter over to the proper position whenever the top of the lever is pushed beyond the center of the roller by either of the collets. In this way the lever is firmly retained in the position into which it is forced by one collet until it is pushed over to the opposite side by the other collet, thus establishing solid and steady contacts between line and dynamo.

The legibility of the signals would be utterly destroyed but for the use of the jockey wheel J, which converts the comparatively slow and uncertain actions of the reversing lever (when actuated by the collet rods alone) into quick and decisive movements that insure the transmission of currents of the duration and steadiness requisite for rapid signaling. The pressure exerted by the roller should not be too great or the lever will stick, but should be sufficient to promptly force the lever to either of its limiting stops, D or D¹, the very moment it is pressed by the collets over the center of the roller.

If proper adjustments have been secured, a series of well defined clicks of perfect regularity may be heard when the transmitter is reversing at low speeds; and the formation of the outgoing signals can be clearly and distinctly traced upon the pole-changing device as the slip passes through the transmitter.

The tendency of the collets to shift under the rapid succession of taps imparted to the lever, constituted one of the most fruitful sources of trouble in the original transmitters, but that difficulty is now minimized by the use of checknuts carried on the collet rods and placed immediately behind the collets, which are thus prevented from working loose. The collets, it may be remarked, are now made of ivory, with the view of obviating "shocks" whenever other parts of the apparatus happen to be touched while adjusting or removing the "bias," which is more or less liable to show on every transmitter.

This bias may arise from an inequality in the potentials of the split batteries or dynamos employed; or from any marked difference that may exist in the value of the resistances placed in each of the dynamo leads; as well as from extraneous leakage currents, which have the effect of strengthening one and weakening the other of the signaling currents, and thus producing a marking or spacing deflection upon the distant galvanometer according to the polarity of the leakage currents.

In general, however, the bias comes from irregularities in the transmitter itself, and is caused either by (1) the collets being improperly placed; (2) imperfect adjustment of the contact screws; (3) faulty regulation of the jockey roller.

The result in either case is to produce a dissimilarity in the duration of contact between the lever and upper stop on the one hand, and the lever and lower stop on the other. Any such disparity will cause currents of unequal strength to flow to line during reversals, and the more powerful of these will naturally prevail and develop a bias.

If, for instance, the contact between the upper post D and lever L is more prolonged than that between the latter and the lower post D¹, a stronger negative than positive current will pass to line, and a marking bias will manifest itself upon the distant galvanometer, which, on the other hand, will show a spacing bias in case the positive current should predominate owing to a reversal of the above conditions. When the potentials are exactly equalized, and similarity of contacts has been perfectly established between the opposite poles and line, the galvanometer will practically remain at zero under rapid reversals of current; and this fact will generally serve as a guide to the proper adjustment of the transmitter for bias.

Where a very high speed is a desideratum, it is very necessary that the bias should be minimized or entirely removed, and to this end the following points should be carefully noted in adjusting the transmitter: (a) There should be absolutely no break or interval between either of the pins, P, P¹ and the horizontal arms of levers A, A¹, while the beam RB is rocking and no slip is passing through the transmitter; or, in other words, the levers A, A¹ must follow the pins P, P¹ throughout their full phase during reversals. If this does not happen, it will indicate that one or other (possibly both) of the collet adjustments is at fault, and the particular collet concerned must be moved to the left of lever L, so as to increase the upward play of the arm that shows the break; (b) the position of the screws D, D¹ must be such as to allow the vertical bar L to move through an equal distance on either side of the center of the jockey roller J.

Perhaps the best way to secure this regulation is to first close up the contact screws until the reversing lever stands perpendicularly and lines correctly with the axis of the jockey roller. Then open the screws until the play of the lever is the same on either side of its pivotal points, while leaving openings as small as possible consistent with the transmission of clear signals to line.

If, now, when the transmitter is started the succession of clicks of which previous mention has been made does not give out that continuous

* See Fig. 21 in September 1 issue of Telegraph Age.

rhythmical sound which results from the regularity of vibration, it will be an indication that the collets either require moving a little further to the left, or that the spring of the jockey wheel needs a little more pressure. In finally determining whether or not these adjustments have been properly made, it will be well to punch a series of center holes in a piece of slip and run

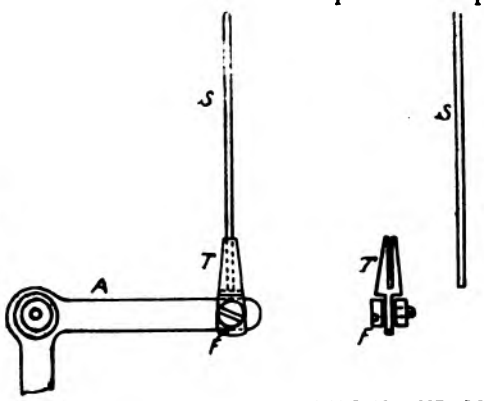

FIG. 23—TRANSMITTER NEEDLES AND SOCKETS.

it through the transmitter. If the regulation of the latter is correct the vertical bar will not stir so long as the paper is passing, and will remain indifferently on either of the contact stops when placed there by finger. Should, however, the lever oscillate under these conditions, both collets will have to be moved so as to increase their

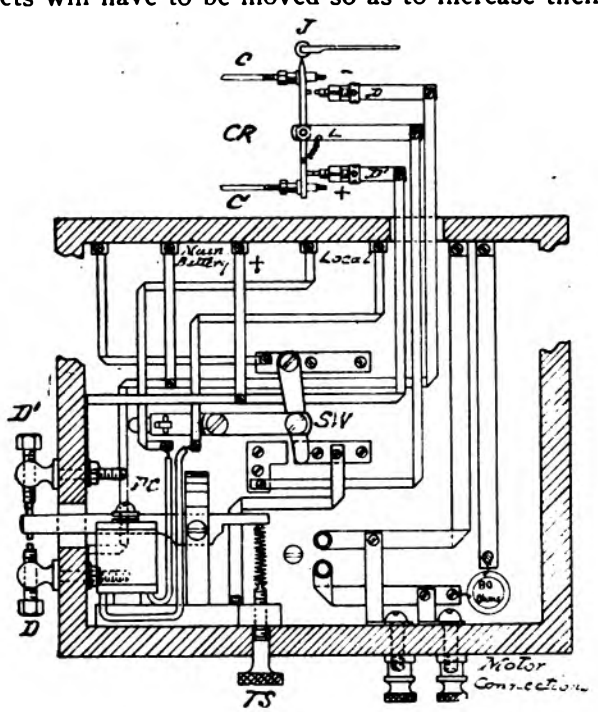

FIG. 25—WIRING ARRANGEMENT IN BASE OF TRANSMITTER.

distance from the lever; or, in case the latter simply tends to remain firmly upon any one particular stop, the collet producing this result must be turned further away from the lever.

It occasionally happens that irregularities of this nature are developed by the shortening of the upright needles M and S, a result brought about by the gradual wearing of their upper ends through continual contact with the paper ribbon. In such an event the play of the collet rod—or rods, as the case may be—will not be limited sufficiently to prevent the lever becoming actuated when it ought to remain stationary.

The tendency of the needles to shorten is

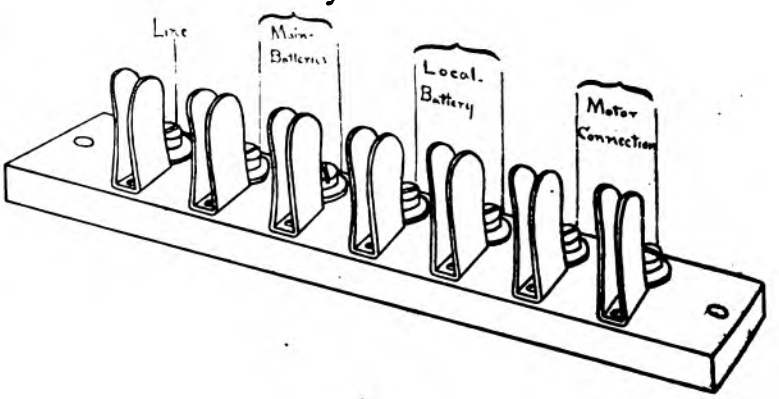

FIG. 24—TRANSMITTER CLIP.

minimized by a device which admits of their being hardened at the top, and in this way to make them last longer. This was found impracticable under the old arrangement, where needles were hinged directly to the rocking levers, and had frequently to be cut at their upper extremities in order to accommodate the variety of transmitters in use, which did not admit of a standard size of needle being employed.

The device referred to is shown in Figure 23, where T represents a conical shaped steel tube or socket into which the needle S is inserted after being cut to the required length at its lower or annealed end, as well as rounded off and hardened at its upper extremity. The

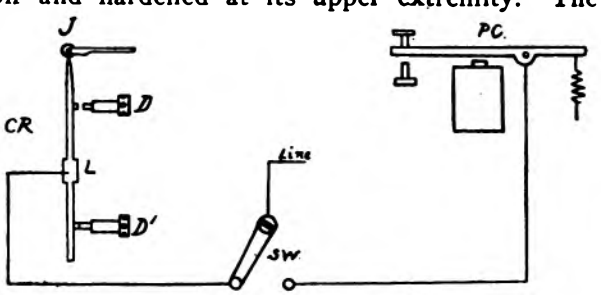

FIG. 26—THEORETICAL SWITCH ARRANGEMENT IN BASE OF TRANSMITTER.

socket, which is hinged on the horizontal arm A by means of the shouldered screw F, is split down the center, as shown in the figure, so as to impart flexibility to the holder, and thus enable the needle to be tightly gripped and securely held in position.

Another convenient and useful device is one for obviating the use of binding posts on the transmitters. This device consists of a series of stout brass pins fixed inside the base of the transmitter and which fit into a corresponding row of brass clips (Fig. 24) permanently fastened to the table. The brass pins which constitute the terminals of the various main and local features

inside the transmitter, form a junction with their external line and dynamo connections through the medium of the metallic clips to which the said connections are made. In this way it is possible to change a faulty transmitter with great convenience and rapidity, as all that is necessary is to lift the defective instrument from off the clips and drop a good one in its place, without the loss of time or trouble involved in effecting the change in the customary way. The same principle has also been applied to the various receivers and galvanometers with advantageous results.

The polechanger, P.C. (Fig. 25), which is used for hand signaling, is placed almost entirely inside the base of the transmitter, the remote end of its armature and polar contacts alone being exposed through the side of the instrument. The wiring arrangement in the base of the transmitter is illustrated in the figure, stout brass strips being employed to make the various connections.

The switching device for transferring the main line from the hand polechanger, P.C., to the automatic current reverser, CR, or vice versa, is also shown, but will perhaps be more readily understood by reference to the theoretical sketch, Fig. 26, in which S.W. represents a switch that is thrown into the position shown upon "starting" the transmitter, and into the opposite position upon "stopping" it. By the former of these movements, it will be seen, the automatic portion of the apparatus is connected directly to line, while by the latter movement connection is established between the line and polechanger P.C.

Adjustments of the latter instrument are made by means of the thumbscrew, T.S. (Fig. 25), or by slight alterations in the positions of the battery posts, D, D'.

(To be continued.)

Personal.

Mr. David S. Anderson, one of the best known of old-time telegraphers in Chicago, and manager of the Western Union office on the Board of Trade, that city, accompanied by his wife, has been making an extended vacation trip through Canada, his itinerary taking him to Montreal and Quebec and the famous Saguenay River.

Brigadier General James Allen, chief of the Signal Corps, is in France, sailing therefor on September 5. His mission is to represent the United States at the conference at Marseilles, called to consider wireless telegraphy, wireless telephony and aeronautics. Commander Chapin, of the navy, is an associate delegate with General Allen.

Mr. S. Edwards, superintendent of the government telephone system in Alberta, Dominion of Canada, has resigned on account of ill health. He will make his future residence at Winnipeg, Man. Mr. Edwards was formerly a superintendent of the Canadian Pacific Railway Company's Telegraph at Calgary, a position he resigned in March 1907, to accept that from which he has now retired.

The friends of Francis W. Jones, of New York, formerly electrical engineer of the Postal Telegraph-Cable Company, will rejoice to learn that he is rapidly recovering from an operation performed at the Roosevelt Hospital, on August 26, overcoming a trouble believed to have been the outcome of an attack of grippe sustained by him last December.

Mr. George M. Myers, capitalist and a well-known business man of Kansas City, Mo., has been appointed a fire and water commissioner of that place, under the new charter. Mr. Myers is a public-spirited citizen and prior to this appointment served with much credit on the utilities commission. He was formerly in the telegraph business, in which he had a brilliant and successful career. He is a native of New York, and is now nearing his fifty-third birthday.

The Cable.

A German cable company capitalized at between $6,000,000 and $7,000,000, and guaranteed by the imperial government, has been organized for the purpose of laying a cable between Germany and South America.

The French Cable Company has been fined $5,000,000 by Venezuela, for alleged complicity in the Matos rebellion in that country. It is declared that the company must also pay a further sum to the Venezuelan government, an amount to be assessed later by experts.

The new submarine telegraph cable, recently laid by Messrs. Siemens Brothers and Company, between Sebastopol and Varna, is reported to be working perfectly. The first messages exchanged over the cable were cordially-worded telegrams between the Czar and Prince Ferdinand.

Mr. George Gray Ward, vice-president and general manager of the Commercial Cable Company, New York, who went abroad April 15 for the purpose of attending the International Telegraph Conference at Lisbon, will sail for home from England September 17, on the Baltic.

Daniel Morrison, for the past five years located at the Midway Island station of the Commercial Pacific Cable Company, and who has been on a leave of absence for the past three months, dividing his time between this country, England and Scotland, left New York, September 4, for Honolulu.

Cable communication was interrupted September 12 with:

Venezuela	Jan. 12, 1906
Madura Island (Dutch East Indies)	Feb. 3, 1908
Lanzorote (Canaries)	May 18, 1908
Messages go by steamer from Las Palmas.	
Macao	Aug. 29. 1908
Messages are mailed from Hongkong.	

Western Union Telegraph Company.

EXECUTIVE OFFICES.

Mr. Thomas F. Clark, vice-president of the company, is absent on a vacation, seeking rest and recreation in the Adirondacks.

Vice-President George W. E. Atkins, who has been a sojourner at Seabright, N. J., during the summer, going out and in to business every day, is again domiciled in his city home.

Mr. John C. Willever, chief clerk to the president and general manager, who is again at his desk, spent his vacation in the Adirondacks.

Mr. Emory Cobb, a forty-niner of the telegraph and a retired banker of Kankakee, Ill., was a recent visitor, calling on Colonel R. C. Clowry, who is an old personal friend.

Reports to the auditors of the company show that, while business is not what it was in comparative years, it is improved over recent months. The company was never in better physical condition than at present, and its employes are more satisfied. The company, while it has eliminated considerable material and labor, has maintained its efficiency.

Earnings of this company for the September quarter, estimated in part, show marked improvement over the actual figures for the same time last year and in 1906, net revenue amounting to $1,700,000, compared with a deficit of $311,493 in 1907, and the surplus after charges and interest amounting to $769,149, compared with a deficit of $1,961,580 in the same time a year ago. The actual returns for the June quarter show a surplus of $649,052, against a deficit in the June quarter last year of $68,324. A quarterly dividend of one-half of one per cent. has been declared, payable October 15.

Postal Telegraph-Cable Company.

EXECUTIVE OFFICES.

With the exception of Minor M. Davis, electrical engineer, who is away on his vacation, all of the executive officers are again at their desks, refreshed from their summer outings. A general atmosphere of close business application is observed on all sides, indicative of an increased efficiency in the telegraph service, if that be possible.

This company is constructing new lines in Nevada and California. Work is already well advanced on the section between Goldfield and Tonopah, and will be carried further to Reno, Nev. From the latter point it will be extended over the mountains to Sacramento and San Francisco. A line will also be built via Ely from Goldfield to Salt Lake City.

Mr. William J. Camp, electrical engineer of the Canadian Pacific Railway Company's Telegraphs, was an executive office visitor on September 9, coming to New York on business connected with the service.

RESIGNATIONS AND APPOINTMENTS.

In the district presided over by Mr. C. B. Arrington, superintendent at Nashville, Tenn., the following changes are recorded:

J. J. Cooper has been appointed manager at Henderson, Ky., vice W. B. Harriss, transferred to Paducah, Ky. Mr. Cooper has been manager at various small offices in the South for this company for several years, namely at Fernandina, Fla., Douglas, Ga., and Marietta, Ga. Mr. Harriss has been manager at Henderson for the past four years, and this change is one of promotion.

J. B. Allen, manager at Paducah, goes to Knoxville, Tenn., vice W. R. Hurst, transferred. Mr. Allen has been manager at Paducah for the past eight years, and his transfer is also in the line of promotion. Mr. Hurst has been appointed chief clerk in the Nashville office, succeeding J. F. Livingston, who has resigned to enter other business. Mr. Hurst was manager at Knoxville for four years, and prior to that time had seen service in Cuba with the United States government.

Another appointment is that of M. J. Hyland, who has been made manager at Bradford, Pa., vice H. F. Kelleher, resigned.

William J. Fish, formerly with the Chicago and Northwestern Railway Company, at Escanaba, Mich., has been appointed manager of the Postal office at Calumet, Mich., vice I. J. Roedel, resigned to go with a broker.

A Gigantic Telegraph System.

An English cable expert who has evidently made a careful study of his subject, sends us the following, which by means of comparison, conveys an idea of the extent and magnitude of the business handled by the Western Union Telegraph Company, facts which, as a rule, are not readily grasped or comprehended by the average European:

"The latest (1906) official telegraph statistics relating to European countries disclose the fact that the combined public systems of France, Germany, Russia, Austria-Hungary, Italy, Belgium and Portugal were exceeded in extent by that of the Western Union Telegraph Company, which at the close of its financial year, 1906-7, was operating 1,321,199 miles of wire.

"In the preceding twelve months 65,052 miles were added to this gigantic system. This addition of mileage alone exceeds the established systems of Holland, Switzerland, Sweden and Denmark.

"The number of telegrams sent by the company during the same period were sufficient, if distributed among the inhabitants of the United States to enable nearly every man, woman and child in the Republic to receive one.

"If the blanks used by the senders of these telegrams could be placed one upon another a tower nearly twelve miles in height would be the result."

John Brant—In Memoriam.

BY WALTER C. BURTON.

The late John Brant was employed for nearly forty years in the service of the Western Union Telegraph Company at New York. He cheerfully rendered to his employers the best that was in him, and only when failing health compelled it did he surrender his place at the key. And now he is gone, and every man and woman who enjoyed his friendship is conscious of the fact that a strong arm has fallen, that a great spirit has found rest, and that the world has perceptibly narrowed becaused a tried and true friend has passed out of it.

There was no interest of the telegraph fraternity that did not command the active and hearty support of John Brant. He was for many years a member of the Telegraphers' Mutual Benefit Association, and always urged its claim upon the consideration of eligible operators. He was an active and helpful force in the development of the New York Telegraphers' Aid Society. He was a director of the Serial Building, Loan and Savings Institution, which has done so much to develop habits of thrift and economy among telegraphers, and was for some years its vice-president. It was as an associate on the board of directors of that organization that the writer came to a full knowledge of the exalted ideals of business and personal integrity, which were the law of Mr. Brant's life. In the panic times of 1893, when the building association was about to mature its first series of shares, involving the payment of a large sum of money, and anxious thought was being given by the board of directors, Mr. Brant's voice and vote were invariably on the side of conservative care for the interest of all the holders of later series of stock, though self-interest, had he considered it for a moment, would have dictated otherwise. His free will service to this great organization over many years contributed not a little to its success and its present strong and permanent condition.

When the question of pensions for aged telegraphers was being discussed some years ago, he was deeply interested and earnestly desired that some plan might be devised which would be just and equitable to employer and employe.

For many years he was a regular attendant at the dinners of the Magnetic Club, and always participated with keen enjoyment in such social affairs. But notwithstanding his long period of service in the New York office, and his active interest in all the beneficent organizations of telegraphers, Mr. Brant will be best remembered as the secretary of the Old Time Telegraphers' and Historical Association. It was in this capacity that the energies of his riper years found expression, and the social and fraternal character of the reunions appealed most strongly to his warm and friendly nature. His untiring zeal in procuring transportation added greatly to the attendance at the annual reunions, and no old timer, even from the remotest corner of our great country, was denied the means of getting to the reunion. The legal restriction against the issue of railroad passes was almost coincident with Mr. Brant's physical disability. Whatever the future may have in store for the Old-Time Telegraphers' Association under the altered conditions affecting transportation, there are hundreds who will hold in grateful remembrance the unselfish labor of John Brant which rendered possible their participation in many of the Old Timers' reunions.

To have lived to three score years, rendering unto every man that which was his due, discharging with scrupulous fidelity every obligation of ethics and of friendship; rendering an unqualified service to every beneficent organization of telegraphers; enduring a long illness with courage and uncomplaining cheerfulness, and leaving behind a veritable army of men and women who mourn because his friendly handshake, his cordial greeting, and his cheerful smile abide with them no more, is to have lived a successful life. Judged by the highest and most enduring standards, John Brant's life was a successful life.

Loyal comrade, faithful friend, farewell and farewell!

Death of George H. Corse.

George H. Corse, of Ogden, Utah, a well-known telegrapher, and for many years actively engaged in the railroad service, died August 26. He was a native of Berlin, Germany, where he was born August 4, 1847. He came to this country early in life, and when but sixteen years of age became a telegraph operator at Fort Madison, Iowa, in the service of the Burlington road. Promotions were rapid and he held many different positions. He became agent of the Union Pacific railroad at Ogden in 1890, at a time when the importance of that place as a railroad center became very generally recognized. Mr. Corse continued to hold this position until 1904, when, owing to a transfer of interests, and ill health, he retired from business. For the past four years he had been confined to his bed and during the last two years was totally blind and helpless. In 1902 he was president of the Old Time Telegraphers' and Historical Association, the year in which its reunion was held at Salt Lake City. Mr. Corse was a prominent Mason, also belonging to the Order of Elks.

Obituary Notes.

Robert G. Davidson, aged sixty years, a Western Union telegraph operator at Chicago, well and favorably known in that city, and a southerner by birth, committed suicide August 20.

R. S. Quigley, a former telegrapher, aged forty-three years, and until recently superintendent of the Hocking Valley Railway, a position from which he was forced to retire in May last because of ill health, died at Columbus, O., August 17.

George W. Uber, a Philadelphia Western

Union operator, died suddenly of heart failure in his home, September 8. He had been an operator for nearly thirty years, and was considered one of the most expert of baseball telegraphers. For a number of years past he has been taking the weather bureau signals in this city.

George H. Albee, aged sixty-nine years, a well-known old-time telegrapher, and a member of the Old-Time Telegraphers' and Historical Association, died at Windsor, Conn., on August 26. He was born at Hallowell, Me., learned telegraphy in 1855, and subsequently filled numerous important positions, in his native state, at Boston, and at Norwich, New Haven and Hartford, Conn. For many years he was a justice of the peace in Hartford County.

Radio-Telegraphy.

It is stated that work has been begun on a wireless station in the Vatican gardens, Rome, and that its effective range will be 400 miles.

A powerful "wireless" station has recently been opened at Emden, Germany (the most important submarine telegraph center on the Continent of Europe), for the training and examination of operators in wireless telegraphy desirous of obtaining employment on liners flying the German flag.

The Amalgamated Company's station at Knock Roe, near Tralee (Ireland), is nearing completion, and Hubert Malpas, joint managing director of the company, states that the Canadian government has granted the company a license for a site at Cape Canso, N. S., where transatlantic transmission will be attempted with a power which Mr. Malpas estimates at one-fourth that employed by the Marconi system.

A patent, No. 896,130, for a receiver for wireless telegraphy, has been granted to Guglielmo Marconi, of London, England. In a receiving apparatus for wireless telegraphy, the combination with an oscillatory circuit, of an oscillation valve, an induction coil and a condenser, said valve, condenser and the primary winding of the induction coil being connected in series and operatively connected with said oscillatory circuit, and a detecting device connected with the secondary winding of said induction coil.

It has been proposed by Mr. Hunt, the Australian Commonwealth meteorologist, that, in addition to the wireless receiving stations to be established by the government on the coast which can obtain weather reports from ships in the Indian and Southern oceans, a sending and receiving station should be built on Amsterdam Island, situated about midway between the west coast of Australia and the southern extremity of Africa. The island is in an almost direct line between Tasmania and Cape Town, in the midst of a vast oceanic space where weather systems are formed and storms are generated.

Lieutenants Colin, Jeance and Mercieri, the inventors of the wireless telephone apparatus which recent tests have shown to accomplish remarkable results, achieved a notable success with their new instruments on August 15, at Paris. Communication was established between Paris and Raz de Sein, Department of Finisterre, a distance of about three hundred and ten miles. The transmitted words were faint, but could be plainly distinguished. The officers are confident that they can make improvements in the apparatus enabling the exchange of conversation up to six hundred or seven hundred miles.

On his arrival in Germany, Dr. P. J. H. Poli, director of the Aix-la-Chapelle Meteorological Observatory, announced an interesting feat in connection with weather reports by wireless messages from aboard the Hamburg-American steamship Auguste Victoria on her last voyage from New York. Speaking of what he had accomplished, Dr. Poli said: "I succeeded in taking wireless weather reports a distance of 800 miles from the American and 1,200 miles from the European coast, and with the assistance of wireless reports from passing vessels, I was enabled to draw up correct weather maps for a distance of 800 miles ahead."

Early Marine News Gathering in Boston.

In these days of wireless telegraphy, when marine news is transmitted to land from vessels far out at sea, it is hard to realize the great diligence and ingenuity once required to learn anything at all about incoming ships.

Samuel Topliff of Boston, says the Boston Globe, established the first real regular marine service in Boston. He gathered a good deal of his information by the employment of a telescope stationed at the top of his house at 32 Washington Square, Fort Hill, that location being then a hill in more than name.

The story of Mr. Topliff's career and of the newsroom which he conducted in the old State House, sheds interesting light upon local history in the first half of the last century.

He was born April 25, 1789, in the two-story wooden building owned by his father, near Hollis street, on what was then Orange street, but now bears the name of our first President. In his early youth he was an alto singer in the Hollis street church, which stood on the site of the present theater of that name, and in 1800 he had a share in a memorial funeral in honor of Washington.

He was a supercargo in the employment of William Gray, then Boston's most prominent merchant, and he had gone on several voyages to the West Indies and South America before he became, in 1811, a clerk in the employ of Samuel Gilbert, of Boston, the proprietor and originator of the first commercial news room in this country. Topliff's salary in this capacity was $700 a year, pretty good pay in those days for a young man of twenty-two.

The office of the Commercial newsroom, for whose marine intelligence young Topliff had now assumed the responsibility, was then in the Ex-

change coffee house, which had been built three years before, with special reference to the wants of the merchant princes. Its reading room aimed to give the earliest European news, and also news of the arrival of any vessel, coastwise or foreign, not only to its owner, but to the other merchants.

As this was the only means Boston then afforded of obtaining such news, it was necessary for the merchants to subscribe to the room's support in order to know how to buy stocks.

Mr. Topliff's accuracy became so well known that his name was frequently forged at the end of dispatches with the hope of enhancing the price of certain commodities and inflating stock values.

One example of such a forgery appears in the following letter relative to the war of 1812:

Exchange Coffee House,
Boston, Dec. 7, 1813—9 o'clock evening.

To the Editor of the Salem Gazette—I hasten to inform you of the arrival late this eve of the Russian ship Catherine, 68 days from Archangel, bringing the highly important intelligence that our ministers had been received at St. Petersburg by a British minister from England & that it was expected that peace would immediately take place. This is all I can obtain tonight. I have just seen the Captain. We are all in confusion here & those that have dealt largely in speculation are crazy crazy!! The Postmaster has been kind enough to open the mail for this—I have sent to New York. Yours, (Signed) Sam Topliff.

This letter was never published, however, as it was recognized to be spurious. The Salem Gazette for December 10, 1813, rebuked thus sarcastically the unauthorized use of Mr. Topliff's name:

The witty and adroit gentleman, who on Tuesday evening, under the respectable name of Mr. Topliff, attempted to impose upon us his own silly inventions as the news of the day, is informed that he succeeded in robbing us of the postage of his letter, but that in other respects his awkward hoax failed of its intended effect.

We mention this occurrence merely to protest against the practice of trifling with the feelings of the public and exciting false hopes, for the purposes of speculation or to gratify thoughtless or malicious wit.

The meritorious exertions of Mr. Topliff, the very reputable journalist of the Boston Exchange Coffee House, to furnish the public with early and correct intelligence, entitle him to general confidence, support and gratitude. On his diligence and correctness the public, in great measure, rely for true reports of the news of the day. The person, then, who uses his name to procure success to a speculating project or to give currency to a mere joke, acts a part highly culpable and injurious.

With very grateful acknowledgment we mention our obligations to Mr. Topliff, to whose obliging communications our paper owes much of what interest it may possess.

A man thus indorsed would not, of course, long remain in another's pay. The following year Mr. Topliff became himself proprietor of the reading room and by his marked ability in its conduct developed a business very satisfactory to the merchants and very remunerative to himself. Under him headquarters were soon removed to the Merchants Hall building, on the corner of Congress and Water streets, an admirable site for the reason that the postoffice was then in that same building.

Examination of the old newspaper files of the period shows that from this time on it was quite the custom to head items of foreign intelligence "from Mr. Topliff's correspondent" at Gibraltar or Smyrna, or some other distant point. Apparently a large part of the foreign news came through his correspondents. He may thus be said to have been the forerunner of The Associated Press in New England.

The nearest approach to the telegraph that the times permitted was introduced by Mr. Topliff for the improvement of his service. The Columbian Sentinel of August 5, 1820, thus chronicles this forward step:

The subscribers are informed that a signal staff has been erected on the east head of Long island, the expense of which has been defrayed out of the funds of this establishment. The site is judged to be the best for the purpose of any in the harbor.

Balls have been substituted for flags. They are all painted black, and are six feet in diameter. The staff is 92 feet from the ground to the head of the topmast, and the yard from which the balls will be suspended is 30 feet in length and is 62 feet from the ground.

Mr. Lawrence, the keeper of the lighthouse, is employed to attend to the staff, which is now in operation. Mr. Lawrence, on being furnished a duplicate of the private signals of shipowners in this place, will display them on the approach of their vessels into the bay for a small fee, and he has authorized the subscriber to make arrangements with such gentlemen as wish to have their signals so displayed. The topmast is reserved for the present for that purpose.

Samuel Topliff.

Topliff's newsroom was a kind of club as well as an information bureau. It was the headquarters for the merchants who dropped in regularly in the morning before proceeding to their counting rooms and offices. Besides the "telegraph" it maintained two boats, from which Mr. Topliff or his assistant boarded incoming vessels in quest of the latest marine news. The facts thus obtained were recorded for the benefit of subscribers in one of seven books, each devoted to some branch of the subject.

Because he had been obliged to support his mother and young brothers, Mr. Topliff did not marry until he was forty, and it is to the period of his early married life that the house formerly on Fort Hill, with its telescope and its stuffed animal room, belongs. By the time he came to live there the newsroom was in the old State House, where it remained until Topliff's connection with it ceased.

A telegraph system will shortly be completed in the French African colonies, enabling communication to be established with the most distant posts. The government of French West Africa is erecting a line connecting Timbuctoo with Zinder, thus putting the basins of the Niger and Tchad in communication with the coast. That government, in conjunction with that of Algeria, has, it is stated, under consideration a line connecting North and Central Africa, which will, in effect, duplicate the submarine cable from Brest to Daken.

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REMITTANCES to Telegraph Age should be made invariably by draft on New York, postal or express money-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.

SEPTEMBER 16, 1908.

The Book Department of TELEGRAPH AGE has always been a prominent and carefully conducted feature of this journal. The desire has been and is to furnish our readers and buyers everywhere the readiest means possible of securing such technical books as they may require. Aiding buyers in their selection with advance information, which at all times is cheerfully furnished; promptness in sending books, filling all orders on the same day of their receipt, has brought to this department a generous clientage. Catalogues fully covering the range of books treating on the telegraph, wireless telegraphy, the telephone, as well as those on the general subject of electricity, together with the principal cable codes, will be sent to any one asking for the same.

An Important Question Considered.

A correspondent writes to Telegraph Age as follows:

As a reader, interested as he thinks one should be, will you kindly allow me to comment upon some of the remarks made by some who have advanced from positions as third-class operators, to those of responsibility.

The general opinion among officials is that the common, every-day operator does not use that effort so essential to promotion. But how they arrive at such conclusions is beyond the comprehension of many of us. To take the stand that any one, or even fifty per cent. of the men in the ranks, can, if he makes proper effort, become a first-class operator, to say nothing of rising to positions of responsibility, is incorrect, for by lining up this class of men on any organized or unorganized road we readily see that not one-half of them can ever be anything but very poor senders or receivers, or both. I think it hardly probable become sufficiently expert to attract favorable attention from superiors, regardless of other qualifications, educational and otherwise.

As this is only a personal letter between you and me, please let me refer to my own situation as an index to the (supposed) condition of others. My experience has been too brief to speak as I am, perhaps. I did not commence the work at the age of fifteen or sixteen, as all of the really successful operators are supposed to have done. My father and mother taught all their lives in two, three or four-room village schools, so I, when eighteen, with some special training but not even a high school education, began teaching in country schools. After two years of such work I was selected as principal of a six-room city school. For three years, until I was twenty-one, this course was followed, all spare hours in winter being spent in study, and summer months at state normal school, which qualified me amply to draw the magnificent salary of sixty dollars per month. I had a fair knowledge of bookkeeping, and at different times taught penmanship in a business college.

At this time, my health having failed, I tried telegraphy for my health, and secured a position as agent-operator after nine months' close application. Putting it modestly, one might say my sending is merely bad, though my receiving is above the average, experience considered.

How is such an operator to reach a place where he will be interested in quads, volts, et cetera, is the all-important question? And I've tried to improve, too. Seventy-five per cent. of our men are no better than I am, some being better senders but even poorer in other work. I've held agencies that paid $85, and can easily hold such a position, but my desire is to become a first-class operator, and in that way finally get a college education.

It's up to us. Can we still be optimistic? I think not—there is nothing to promote such a mental condition.

A man endowed with the evident intelligence and possessing the experience our correspondent claims to have had, should be able to take a broader gauged view of the subject and situation which engages his attention. He does not appear to have allowed himself to get into proper relationship with the problem of life with which individually he is confronted. He has permitted his mind to become jaundiced, hence does not see clearly, and in consequence does not reason properly. He should cultivate a spirit of optimism which he is inclined to regard as impossible under the circumstances; he should get out of the ruts. Yet for our correspondent, who in varying shade and degree is representative of a type which he himself admits exists in the telegraph service (and they abound in every walk of life), we have abundant sympathy, because so many fail to grasp, either through lack of force of character, or, strangely enough, because of careless indifference, the vital necessities incident to their positions.

The Bible says that men are rewarded according to their talents. This being so, not all engaged in the telegraph service will rise to the office of president. But it should not be forgotten that there are plenty of minor positions, attended by responsibility and carrying fair salary compensation, that are open to and within the reach of any qualified and aspiring individual. Our information is that it is difficult to find men to fill these places. The reason may readily be

found; men have not demonstrated their competency to fill them. This proves the "general opinion among officials" complained of by our correspondent, that the average operator does not exert proper effort to fit himself for promotion. The business of a great telegraph company, as of any other, is not and cannot successfully be conducted other than on strict business principles. It becomes absolutely essential that individuals in the telegraph service if they desire promotion must fit themselves for it. There is no dodging this proposition; in its application it is a steadfast and eternal rule as old as mankind itself; involved in it is the very essence of civilization and because of it the race has lifted itself out of barbarism and reached the estate it now holds. This is a fact so self-evident that it is marvelous that men are to be found who do not recognize it, or refuse to accept its personal application.

It is not every man who possesses the innate qualities enabling him to become a first-class operator and sequentially a first-class chief, and so on; or who possesses executive abilities sufficient to fill positions calling for the exercise of such attributes. One deficient in these respects has made a mistake in entering the telegraph service, and is committing a worse one by remaining in it. We suspect that our correspondent became identified with telegraphy too late in life to ever permit him to become a really efficient operator. For it is a fact that first-class operating talent is evolved and developed only out of the formulative period of youth. It may be laid down as a rule that a man who has passed the age of twenty or twenty-five years can but seldom successfully learn telegraphy. At the latter age he should, indeed, if he be ambitious, be prepared rather to quit the dots and dashes for something higher up, either in the telegraph service or out of it. It should be the aim, as it is the duty, of every man who possesses discriminating intelligence, to conscientiously determine, sooner or later as it may be possible, what is the best course in life for him to pursue. This should be his guiding principle early in life, helped by observation, study and painstaking effort, while free from the responsibilities of family cares. On general principles, if the factor of health remains unimpaired, we affirm that every person—at least those who show themselves sufficiently intelligent to enter the field of telegraphy, can better their worldly condition to some extent. Not only this, but also as a rule, responsibility for position rests wholly with the individual. Let none delude themselves with the idea that telegraph officials are not constantly on the lookout for competent men to fill the higher position in that business. They are; and it is a false, weak and silly theory to hold to the contrary. The age in which we live, as never before, demands men with technical education. In some degree, at least, in whatever field of endeavor one may be placed, a practical—a technical knowledge of the business is essential to success.

Two-Dollar Subscription Rate Commended.

We are in receipt of a number of letters commending our course in advancing the subscription price of Telegraph Age from $1.50 to $2.00 a year. We select from the correspondence a communication received from George W. Deetz, manager of the Western Union office at Atlantic City, N. J., who writes in this complimentary vein:

"These are busy days at the "Greatest Resort in the World," yet time is taken nevertheless to at least glance through the columns of your valuable paper. I have never said a good or kind word to you direct, but let me assure you of my appreciation of the many valuable points Telegraph Age has brought me. I have only one objection to your announcement and that is your article on the price to be of Telegraph Age is entirely too long. You could say it all in a few words. Here's a standing order: Continue Telegraph Age to me without questioning at any price not exceeding $5.00 per year. If you exceed this amount, I will consider the matter further."

Telegraphic Visiting Cards.

The Roumanian telegraph administration is congratulating itself on the financial success of a new scheme, the so-called telegraphic visiting cards. These are inland telegrams which contain the address, the name of the sender and nothing else. They take the place of the congratulatory cards that are obligatory on New Year's Day and similar festive occasions. They are accounted good form and have the additional merit of being exceedingly simple, the sender not having to think about the phrasing suitable to the rank and condition of the receiver. How popular telegraphic visiting cards have become may be gauged by the fact that during the fiscal year just expired no fewer than 322,000 of these messages have passed over the Roumanian state telegraph system.

The International Technical Congress, which has the support of the telegraph and telephone engineers of Europe, will hold its first session on September 21, meeting at Budapest, Hungary. Governmental delegates, so far as announced, will be present from England, France, Germany, Bavaria, Austria, Italy, Belgium, Holland, Denmark, Sweden, Roumania, Bulgaria and Servia. Information may be obtained from Endre Kolossvary, chief of the technical department, Direction Générale des Postes et des Télégraphes, II. Albrecht ut 3, Budapest, Hungary.

To-morrow will be the yesterday of the day before—do it now.

It doesn't make any difference to the general public whether you win or lose. Therefore, it is up to you!

The Military Telegrapher in the Civil War.

PART EIGHT.

The campaign in Missouri early in the Civil War afforded many opportunities for the nice exercise of the abilities of the military telegrapher. Here, as elsewhere, he contributed to the general welfare not only in professional services rendered, but exhibited evidences of patriotism and soldier-like qualities by instances of personal bravery, sharing the lot under fire, of the rank and file of the army in the defense of his country. Missouri being a border state, with a population having affiliations with both the North and South, its territory, particularly in the southern portion, became the scene of almost constant skirmish and guerrilla warfare until the line of battle was pushed further south. With neighbor oftentimes arrayed against neighbor, a spirit of personal bitterness, always the most vindicative under such circumstances, frequently characterized the operations of the opposing forces. The city of Springfield, situated in Greene County, in the southwestern part of the state, a point of strategical importance, became an established headquarters of the Union army. It was a center about which much desultory fighting, besides several heavy engagements, took place, and where the cutting of telegraph wires was of constant occurrence.

W. H. Woodring, an engraving of whom appears elsewhere in this issue, a telegraph operator, at that time twenty years of age, was an actor in the military events of 1861-63, transpiring in the vicinity of Springfield and other sections of the state, and subsequently elsewhere. In a letter addressed to Colonel William R. Plum, the historian of the military telegraphers, written from Kansas City, Mo., in October, 1878, he refers to the incidents of his career as a military telegrapher, in substance as follows:

"When the war broke out in the spring of 1861, I was the single operator in charge of the Rock Island, Ill., telegraph office. There was but one wire at that time, and over this all of the railroad and commercial business was transmitted, besides what press reports there were for the two daily papers. On May 3 I resigned and enlisted as a private soldier. The fact, however, that I was a telegraph operator caused much of the official telegraphing to be entrusted to me. Our regiment was soon sent to Rolla, Missouri, the then terminus of the Pacific railroad, along which no telegraph line had been built. In October we started on a long march to join General John C. Fremont's forces at Springfield, the line of march following the old Stebbins telegraph line, which before the war was operated via Sedalia, and southward along the old stage road to Springfield. The retreating rebels had pulled the wire down in many places and carried away the instruments from all the offices. Only a Grove battery was left at Springfield. Returning to Rolla the following month the regiment went into camp at that point for the winter. In the meantime the Government had built a telegraph wire to Rolla, at which place a Mr. Rugg was in charge of the office. I was able to be of considerable assistance to him because of my knowledge of batteries. I was urged to join the military telegraph corps by the chief operator, J. C. ("Yankee") Sullivan, who was stationed at St. Louis, for the reason that the Government had need of my services as an operator.

"Finally, through the influence of a letter, dated at Chicago, January 29, 1862, written by my old superintendent, E. D. L. Sweet, and to Thomas T. Eckert, superintendent of military telegraph at Washington, backed by the subsequent request of Captain George H. Smith, superintendent of military telegraph of the department in which I then was, conveyed through my regimental captain to Major-General Halleck, commanding the department, I was detailed for transfer to the telegraph corps. My first order from Captain Smith was to take charge of the telegraph office at Lebanon, Mo. The telegraph wire from Lebanon to Springfield was in bad shape, and needed constant repair, entailing much hard work on the part of the repairers. Not long after reaching Lebanon, and at a time when all of the repairers were absent, engaged at the southward in construction work, I essayed to mend a break myself about three miles out. The wire had parted at the insulator, which was fastened to a tree. I had no tools and no wire, but finally, under circumstances the most adverse, I managed to make a splice which, if not artistic, at any rate served for the time being. A few weeks later the foreman of repairs passing that way cut out the splice and brought it with him to the office, exhibiting it as a curiosity. I mention this incident to illustrate the conditions under which frequently we were obliged to labor. After a short leave of absence in May, 1862, I reported at St. Louis for duty. I was ordered to proceed to Springfield, Mo., and there take charge of the telegraph office. I made the journey from Rolla on horseback, and when nearing Springfield, in company with some repairers whom I had overtaken, and in whose wagon I was riding, leading my horse, we had a narrow escape from capture, a party of bushwackers, so we were informed, crossing the road at a point around a bend almost immediately after we had passed along.

"Shortly after my arrival in Springfield, Brigadier General E. B. Brown was assigned to the command of the post, and opened his headquarters in a private house, the property of a secessionist, and gave me part of a large room on the first floor for my office. The work here was pretty heavy, and often required us to keep open late at night. General Brown granted me many favors, detailing operators from regiments stationed there to assist me; also furnishing me daily with a mounted orderly to deliver my telegrams. J. B. Morgan was my first assistant. He was a member of the Fourth Iowa Infantry, wounded at the Battle of

Pea Ridge, and at that time a convalescent. He had helped my predecessor (George H. Peck), and remained with me until near the close of June, when he was ordered to take charge of the Waynesville, Mo., office. There were no other soldier operators available for some time, so Captain Smith sent Cassius M. Barnes, a young civilian, to help me. In the fall of 1862, General Schofield made Springfield his headquarters for some time, while concentrating troops for a forward movement. One of the members of his staff, Lucien E. Barnes, brother to Cassius, also an operator, would frequently help me a little. Charles A. Paxson accompanied General Schofield on this expedition as his private operator. Of Charley it may be said that he had his pocket relay, and pocket —— something else, always with him ready for use. Just before the departure of General Schofield with his force, I learned that there was a pretty fair operator named Harry G. Briggs in the Ninety-ninth Illinois Infantry, then stationed at Springfield. General Brown detailed him to assist me, and Barnes went back to St. Louis. Briggs was a steady man and a pleasant companion.

"On January 7, 1863, we got word early in the day that a force of about 3,000 rebels under General Marmaduke were marching on Springfield, from the southwest, and would reach there probably next morning. Our cavalry skirmished with them that night to delay their approach, as we were very poorly prepared to receive them, all the spare troops having accompanied General Herron a short time before. However, we made ready as best we could to meet the attack. Early in the evening my communication on the wire was suddenly interrupted both east and south. The rebel scouts had cut the wires both sides of us to prevent our communicating with outside forces. The night was clear, with a bright moon shining, and, realizing the great necessity of re-establishing the circuit before the attack, I called up my two repairers and had them mount that night, go forth and try and mend the break. Owen Monday, a splendid man, with plenty of real Irish pluck in him, mounted his big "Claybank" and went east, and "Bob" Bates, on a spirited little mare, went south. Monday found and repaired the line where the rebels had cut it, about seven miles east, and returned without being discovered before daylight. Bates had to go a longer distance, and did not find the break until near morning. Stopping at a farm house to rest and get some breakfast, he did not return until after the rebels had begun their attack. Bates did not know anything of their presence until he rode right into a squad of them at the outskirts of the town. As he was dressed in citizens' clothes, no attempt was made to molest him, yet as soon as he comprehended the situation he put spurs to his little mare, making directly for a cover of trees and brush that skirted the road. The rebels fired a volley after him, but fortunately without effect, and he made his way through the brush into the city.

"Our communication being thus re-established, we were enabled to keep the department headquarters informed of how it fared with us during that entire day, my wire being connected by a loop from the general office at St. Louis with department headquarters. I could not remain idle in my office, however, while the fighting was going on within a couple of squares of it. Briggs and myself had each provided ourselves with a good Enfield rifle and plenty of ammunition. He took his place among the volunteer skirmishers and I wherever I could be of service, part of the time as aid to General Brown, and part of the time firing from behind whatever shelter I could find. At one time while looking over the parapet of our little fort for a shot, I drew the fire of a number of concealed rebels, their balls cutting very close to my ears. At intervals of about one hour I would run to my office and report to St. Louis how the battle was going. The side of the house where my office was received a number of bullet holes that afternoon, and just after dark, as I was lighting my lamp to report that our general was severely wounded, there came a sudden crash, and the room was filled with flying splinters and powdered plastering. Before I could comprehend what was the matter, I saw a dark ball rolling on the floor right at my feet. It was a shell just from the enemy's artillery. Greatly startled, I jumped back and crouched down in a corner, awaiting its expected explosion. Happily for me, the fuse had not ignited and the explosion did not occur. The shell had passed through a wooden church and through three partitions of our building before reaching my office, and then struck the brick chimney and fell to the floor. I hurriedly cut out, taking my relay with me, and went to a building facing Market Square, where my office had originally been before moving into General Brown's headquarters, and where my main battery was still located. There I connected my relay and made my report to St. Louis. This house had been pierced full of loop holes for defensive purposes, and the wind was blowing through it very cold. We only had one stove and around this was gathered a crowd of shivering soldiers. The firing uptown ceased about eight o'clock at night, and all was quiet until about one o'clock, when our gunners threw a few shells to feel the enemy's position. It created considerable excitement in my office retreat, for we supposed the fight was being renewed. I reported the firing to St. Louis, and then my wire was cut again east, the rebels having quietly withdrawn and retreated along the Rolla road, cutting the wire in many places and stringing it across the road behind them. I had not heard a word from Briggs since about two o'clock on the 8th inst., so I sallied forth early the next morning to search for him. Soon I met an officer, who informed me that poor Briggs had been killed, and told me where his body lay. Sorrowfully I hurried to the place, not far from my office, and there, on the back porch of a house, lay his body, a bullet having pierced one of his eyes."

(To be continued.)

A Telegrapher's View of the Telegraph.

EDITOR TELEGRAPH AGE:

I approve of the view expressed by Telegraph Age respecting the question of placing the filing time on all telegraph messages. If the sender of a telegram desires the time of its filing to be incorporated in a message, in my judgment, he should pay for it. I fail to see the justice of imposing the trouble and expense of such inclusion on the telegraph company.

I observe the communication by Romyn Hitchcock in the August 16 number of Telegraph Age, on the "Filing Time on Messages." I take issue with your correspondent, for what he writes is, unfortunately, much in line with other arguments of that nature, the tendency of which is to convey a wrong idea. Certainly Mr. Hitchcock must be aware that out of at least one dozen messages, for instance, handled daily between New York and Philadelphia, of which number there are a few that will show five minutes service, while in those that do not the delay can readily be explained.

I recently met a first class telegraph operator whom you know. He insisted on demonstrating to me that out of every twenty-five-cent message sent the telegraph companies realized a profit of eighteen cents. It was not my business to correct him; in fact, I did not have the time to bother with him; to argue with a man who should have known better to advance such a statement was a needless waste of time. I instance the case, however, to illustrate the too frequent and entirely erroneous criticism one is apt to hear nowadays respecting the telegraph.

As an old telegraph man, one having practical knowledge of the general subject of telegraphy, I believe the companies are wholly justified in viewing the filing time question as they do, and that Telegraph Age has also taken the right stand in this matter. Not only this, but I believe that the address and signature in all messages should be included among the counted words and paid for by the sender. This is in accordance with justice, for as a matter of fact, the telegraph companies cannot afford to transmit messages at the present low rates of toll. Some action is necessary to increase present revenues. Despite what criticism may instance, I affirm that at least ninety per cent. of the business handled shows that the telegraph is rendering a prompt and reliable service. Why should the telegraph companies get a revenue only from the "words in the body of the message?" There is no more reason why a charge should not be made for everything written on a blank than that the butcher should not charge for the bone in the steak. The telegraph and those that work conscientiously for its interests have nothing to keep from the public.

We see it stated that employes of many different lines of railroad are interesting themselves in acquainting business men with the fact that if the rates on freight are not increased wages of employes must be reduced. The telegraph companies are in a like position; the expense of labor remains about the same, while all kinds of material has advanced in price more than fifty per cent., without any corresponding increase in revenue.

No more fitting word can be employed to express my meaning than to say that the "laborer is worthy of his hire," and surely the telegraph is a laborer in behalf of the people. Few understand the real conditions under which the telegraph is administered.

A TELEGRAPHER.

Detroit, Mich., August 22, 1908.

Wire Direct from Crude Copper.

By the invention of Sherard Cowper-Coles it has become possible to produce copper wire in one operation from crude copper, such as Bessemerized copper bars. The copper is deposited electrically on a revolving mandrel or drum rotated at a critical speed which gives the most dense, tough and smooth deposit. This speed may be found experimentally by rotating a cone-shaped cathode for a time while the electro-deposition of the copper is going on and then determining the region of the finest deposit.

An explanation of the process is that each molecule of copper as deposited is burnished by the friction of the electrolyte. This would be expected to insure a very homogeneous metal, and it is declared that the result obtained is actually more regular than can be obtained by applying great pressure to a large mass in the way of rolling, drawing or hammering.

As the copper so deposited crystallizes at right angles to the surface upon which it is formed, a spiral V-shaped scratch is made on the mandrel, along which the crystals form a weak line of cleavage. No line of cleavage is produced if the base of the scratch is rounded, as the crystals would then form radially. It is said that four or five miles of wire may be made on a single mandrel. The strip has only to be unwound, separating along its natural line of cleavage and passed through a set of dies which remove the burr or fin and form a round section.

The copper produced by this method is explained to be very dense and to possess a considerably higher tensile strength than possible with the usual methods of annealing and drawing or rolling.—Western Electrician.

Mr. W. M. Martin, manager of the Western Union Telegraph Company, at Burlington, Vt., evidently has abundant faith in Telegraph Age, considering it to be a good proposition in which to invest. His subscription to this publication is paid in advance to cover the years up to and including 1916, a date far in advance of any other paid up subscription.

The Reunion of the Old-Time Telegraphers' and Historical Association and of the Society of the United States Military Telegraph Corps.

It was a distinct disappointment to the membership that the regular annual joint reunion of the Old Time Telegraphers' and Historical Association and the Society of the United States Military Telegraph Corps, announced to meet last year at Niagara Falls, N. Y., was not held. The then prevailing disquiet in telegraphic circles made omission of the meeting a necessity under the circumstances. The reunion this year, however, the twenty-seventh in the series, at the same place, to be held on Wednesday, Thursday and Friday, September 16, 17 and 18, with headquarters to be established at the Cataract and International Hotels, a superior hostelry conducted under a single management, promises to be a fine affair. This will be true, particularly in regard to the military telegraphers, who aim to make this an especially notable event, for it is announced that among those to be present are Colonel Robert C. Clowry, president and general manager of the Western Union Telegraph Company; Colonel William R. Plum, the historian of the military

HARVEY D. REYNOLDS, BUFFALO, N. Y.
President, Old Time Telegraphers' and Historical Association.

G. A. BURNETT, BUFFALO, N. Y.
Vice-President, Old Time Telegraphers' and Historical Association.

I. McMICHAEL, TORONTO, ONT.
Vice-President, Old Time Telegraphers' and Historical Association.

GEORGE F. MACDONALD, OTTAWA, ONT.
Vice-President, Old Time Telegraphers' and Historical Association.

telegraphers; Charles A. Tinker, formerly general superintendent of the Eastern division of the Western Union; Colonel William B. Wilson, president of the society; David Homer Bates, the secretary, and Colonel Albert B. Chandler, chairman of the board of directors of the Postal Telegraph-Cable Company. All of those named had enviable war records, holding positions of much responsibility, the character of which is well known to readers of Telegraph Age. Their meeting together on so auspicious an occasion as that of the reunion, when it is hoped many others, who also served with conspicuous fidelity and ability in promoting the cause of the Union in the department of its field telegraphy, will be present to meet these leaders in social fraternization.

ANDREW CARNEGIE, NEW YORK.
Founder of the United States Military Telegraph Corps.

COL. WM. B. WILSON, HOLMESBURG, PHILADELPHIA.
President of the Society of the United States Military Telegraph Corps.

DAVID HOMER BATES, NEW YORK.
Secretary and Treasurer of the Society of the United States Military Telegraph Corps.

JAMES E. PETTIT, CHICAGO, ILL.
Secretary-Treasurer for twenty-six years, until 1908, of the United States Military Telegraph Corps.

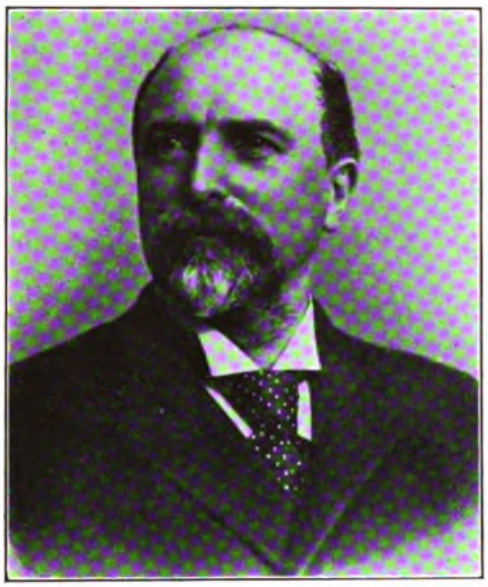
Profound regret will be felt at the death of John Brant, for many years the secretary and treasurer of the Old Time Telegraphers' and Historical Association, who passed away at his home in Brooklyn, August 26, after a lingering illness. He was indefatigable in his efforts to promote the welfare of the association, and as a man and officer was held in high esteem.

Another death, that of William Hamilton Young, of Washington, which occurred June 19, at Chicago, and under whose presidency the Old Timers met at Washington, in October, 1906, the highly enjoyable and well remembered last meeting held, marks another sad break in the telegraphic ranks.

Still another is to be added to the death roll this year. George H. Corse, of Ogden, Utah,

who was president of the Old Time Telegraphers' and Historical Association in 1902, when the reunion was held at Salt Lake City, died after a long and severe illness on August 26.

From official rank in the military corps,



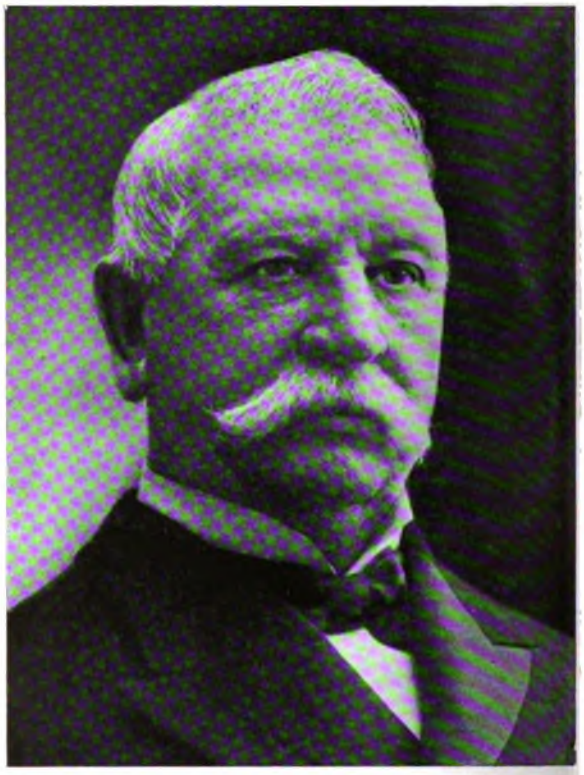
COL. ROBERT C. CLOWRY, NEW YORK.
Member Executive Committee of the Society of the United States Military Telegraph Corps.

James E. Pettit, of Chicago, has retired because of failing health, which rendered it necessary for him to seek rest, relieved from all business cares. His position of secretary and treasurer, honorably filled for twenty-

WILLIAM L. IVES, NEW YORK.
Vice-President of the Society of the United States Military Telegraph Corps.

six years, has been conferred upon David Homer Bates, of New York, one of the best known of former telegraphers in the United States.

It is planned this year to carry out the program originally contemplated for last year's entertainment. This, in brief, for the dates of Wednesday and Thursday, the order for Friday not yet being announced, provides for the holding of a business meeting of the United States Military Telegraph



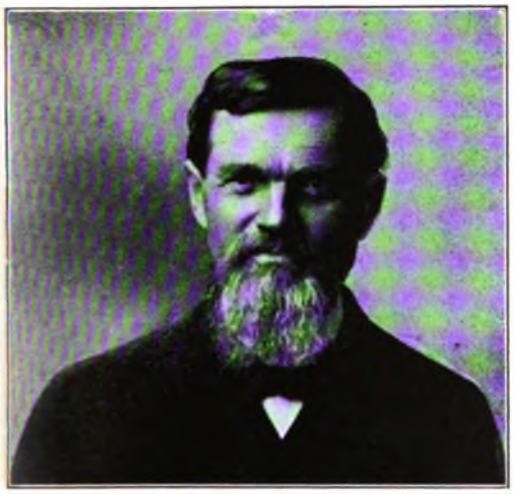
GEN. THOMAS T. ECKERT, NEW YORK.
Dean of the Society of the United States Military Telegraph Corps.

Corps at the hotel headquarters at ten o'clock on the morning of Wednesday, Sept. 16, to be followed at one o'clock by a similar meeting of the Old Time

WILLIAM R. PLUM, LOMBARD, ILL.
Historian of the Society of the United States Military Telegraph Corps.

Telegraphers. In the afternoon the noted power plant at Niagara Falls will be inspected, and a visit made to the manufactory of the Natural Food Company, where a "demonstrative" lunch will be served. In the evening a reception will be held in the ballroom of the hotel. On Thurs-

Well Known Military Telegraphers Sketches of Most of Whom Have Appeared Previously in Telegraph Age.



JOHN F. LUDWIG,
Putenney, Ariz.

GEORGE F. THODE,
Blakesburg, Iowa.

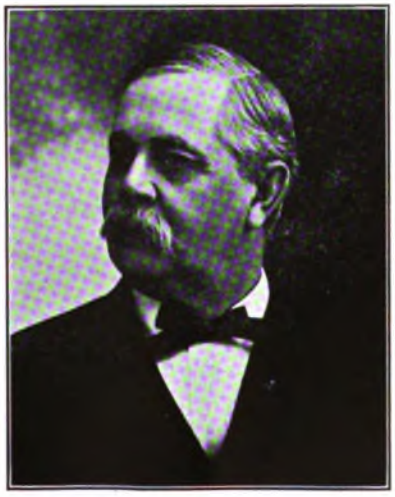
STEPHEN E. BARTON,
Boston, Mass.

JOSHUA M. SPENCER,
Rising Sun, Ind.

JOHN E. JAYNE,
De Witt, Mich.

ALBERT W. ORTON,
Rome, N. Y.

THOMAS E. CLARKE,
Scranton, Pa.

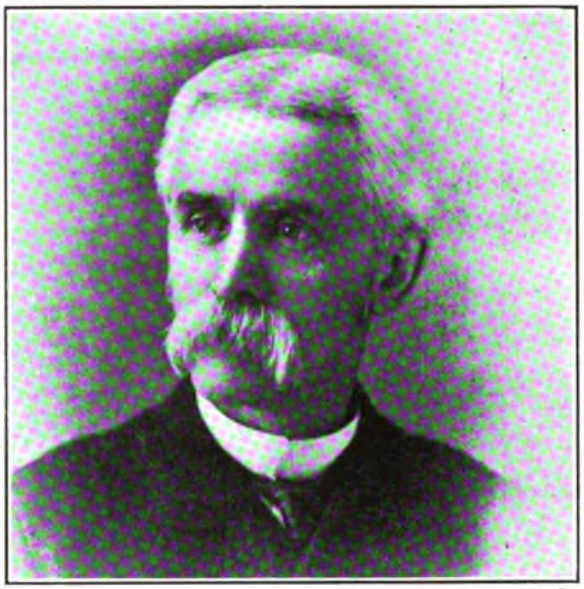


L. A. ROSE,
Davenport, Iowa.

JOSEPH H. LAFAYE,
New Orleans, La.

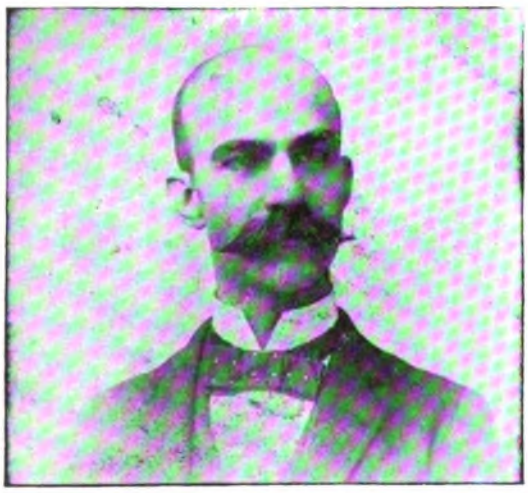
Well Known Military Telegraphers Sketches of Most of Whom Have Appeared Previously in Telegraph Age.

W. S. FORSEY,
Pinole, Calif.



MADISON BUELL,
Buffalo, N. Y.

CHARLES H. GRIFFITH.
Modesto, Calif.



RUDOLPH H. BOHLE,
St. Louis, Mo.

W. T. LEWIS,
Racine, Wis.

COL. M. D. CRAIN,
St. Louis, Mo.

day morning, the 17th inst., the visitors will take a trip over the Niagara Gorge belt line, for which special cars will be provided. This trip will be supplemented in the afternoon by an automobile ride around Goat and Three Sister islands and through the State Reservation Park, while in the evening a banquet will be held at the Cataract

GEORGE C. MAYNARD,
Washington, D. C.
Member United States Military Telegraph Corps.

DANIEL COLESTOCK,
Titusville, Pa.
Member United States Military Telegraph Corps.

WILLIAM J. DEALY,
New York.
Member United States Military Telegraph Corps.

Hotel. Around this board it is expected many people distinguished in telegraph, railroad and other closely allied circles, will assemble. The price has been fixed at one dollar a plate for all attending who are guests of the hotel, the charge for others being two dollars.

The officers of the Society of the United States Military Telegraph Corps are: Colonel William Bender Wilson, Holmesburg, Philadelphia, president; William L. Ives, New York, vice-president; David Homer Bates, 658 Broadway, New York, secretary and treasurer. The executive committee is made up as follows: Colonel Robert C. Clowry, New York; William R. Plum, Lombard, Ill.; Colonel Albert B. Chandler, Colonel Levi C. Weir and David Homer Bates, New York; Charles A. Tinker, Brooklyn; O. M. Shepard, New Haven, Conn.; John Wintrup, Philadelphia, and Marion H. Kerner, New York.

A special committee appointed by President Wilson to act in conjunction with the president and committee of arrangements of the Old Time Telegraphers' and Historical Association, whose headquarters are at Buffalo, are: George A. Burnett, chairman; Joseph Anderson, Madison Buell, and Thomas A. Laird, Buffalo, N. Y.; James K. Parsons and Harry L. Gregg, Roches-

RICHARD O'BRIEN,
Scranton, Pa.
Member United States Military Telegraph Corps.

JOHN R. DIXON,
Chicago, Ill.
Member United States Military Telegraph Corps.

WILLIAM H. WOODRING,
Council Bluffs, Iowa.
Member United States Military Telegraph Corps.

ter, N. Y.; Joseph Schnell, Binghamton, N. Y.; George J. Goalding, Erie, Pa., and I. McMichael, Toronto, Ont.

The officers of the Old Time Telegraphers' and Historical Association are: H. D. Reynolds, president, Buffalo; George A. Burnett, vice-president, Buffalo; I. McMichael, vice-president, Toronto, Ont.; George F. Macdonald, vice-president, Ottowa, Ont.; the office of secretary and treasurer being vacant caused by the death of John Brant, of New York.

CHARLES A. TINKER, NEW YORK.
Member Executive Committee of the Society of the United States Military Telegraph Corps.

The names that jointly appear in committees of these two telegraphic organizations show how closely allied both are in their personnel.

Like the Society of the Cincinnati, established in 1783 to perpetuate the friendship of the surviving officers of the Revolutionary Army, the Society of the United States Military Telegraph Corps, has provided means for perpetuating the latter organization by an amendment to the constitution which makes sons and male descendants of original members of the corps eligible to membership. The United States Military Telegraph Corps of the Civil War was organized into a society in 1882, its first reunion taking place at Niagara Falls, in September of that year.

The value of the telegraph as a concrete factor in warfare received full recognition in the War of the Rebellion. The Mexican War was almost contemporary with the first introduction of the telegraph itself, hence in that struggle the telegraph played no part. The Civil War, however, being the first conflict in which this government, or, indeed, any other, became engaged following the confirmed establishment of the telegraph as a means of transmitting intelligence, its utility in such service was conclusively determined. Germany alone of all the nations, had previously acknowledged the worth of the telegraph by adopting it in its military establishment, but its practical use as an auxiliary aid in army movements remained to be decided by the actual test afforded in the vast and active operations extended over the wide area covered by the

J. HERVEY NICHOLS, DENVER, COL.
Member United States Military Telegraph Corps.

MARION H. KERNER, NEW YORK.
Member Executive Committee of the Society of the United States Military Telegraph Corps.

EDWARD W. McKENNA, CHICAGO, ILL.
Member United States Military Telegraph Corps.

conduct of the internal strife in our own country. And yet with all its potentialities of usefulness its extended adoption was at first slow, and many months passed before an adequate system of military telegraph service to meet the exigencies of the situation was effectively organized. However important, all things considered, this delay

COL. A. B. CHANDLER, NEW YORK.
Member Executive Committee of the Society of the United States Military Telegraph Corps.

COL. JAMES R. GILMORE, CHAMBERSBURG, PA.
Member United States Military Telegraph Corps.

DR. J. EMMETT O'BRIEN, SCRANTON, PA.
Member United States Military Telegraph Corps.

GEORGE J. GOALDING, ERIE, PA.
Member United States Military Telegraph Corps.

may not be strange, for it was owing doubtless to the fact that the government itself at the outset failed utterly to realize the extent and gravity of the war, just then beginning, it had on its hands.

In order to gain a true conception of its network, it is well to fix in the mind to what extent the telegraph had developed and what territory it covered, both in the North and South, at the time the war broke out in the spring of 1861. William R. Plum, in his admirable history, "The Military Telegraph in the Civil War," thus refers to the systems of the telegraph as they existed at the period referred to:

"At the outbreak of the war there were three great private telegraph corporations, two at least vying for supremacy. These three, the American Telegraph Company, the Western Union Telegraph Company and the Southwestern Telegraph Company, unitedly, connected all of the cities, and a great number of towns of the Union, except in the Far West, and even there the Western Union people were busily at work,

so that before the winter of 1861-62 communication was perfected overland to San Francisco, Cal. The American company's lines occupied that entire region lying east of the Hudson River, and the whole seaboard country along the Atlantic and Gulf, from the island of Newfoundland to New Orleans, with branches extending

H. H. ATWATER, BROOKLYN, N. Y.
Member United States Military Telegraph Corps.

interiorly in the northern states to Albany, N. Y., Pittsburg and Philadelphia, Pa., and Cincinnati, Ohio, at each of which points it met the Western Union company's lines, which occupied chiefly the remaining territory and had its eastern terminus in Rochester, N. Y. In the Southern states, the American company met the Southwestern lines at Chattanooga, Tenn.; Mobile,

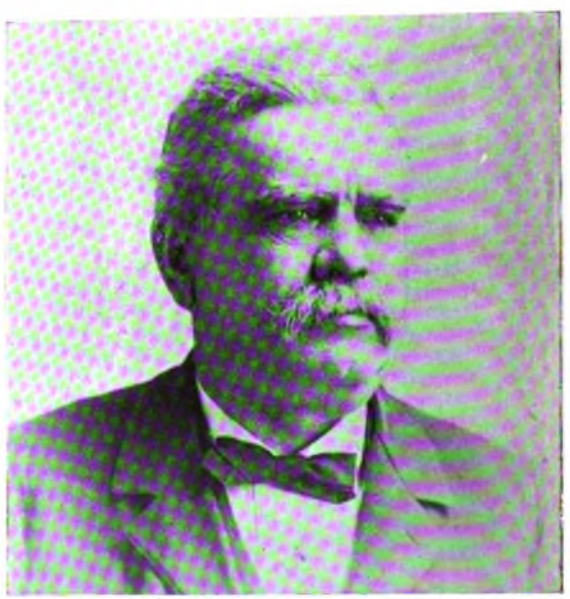
THEODORE E. MORELAND, PITTSBURG, PA.
Member United States Military Telegraph Corps.

Ala., and New Orleans, La., leaving the Southwestern company mainly to occupy the rest of the South and Southwest, including the states of Texas and Arkansas, beyond the Mississippi River. Louisville, Ky., was the headquarters of this company and its most northwesterly point. There were other companies extensive enough for great good, but incapable of long separate existence among such leviathans."

It is interesting to note, as a matter of information, that the government, during the war, undertook in many instances to construct its own lines of telegraph when needed, eventually building and operating, according to Colonel Plum, 15,389 miles of telegraph, which in 1866, after the close of hostilities, was disposed of by sale.

JESSE H. ROBINSON, WASHINGTON, D. C.
Member United States Military Telegraph Corps.

While, as has been said, the importance of the telegraph as an aid to army operations in the field had early received a tentative recognition in mili-



CHARLES W. HAMMOND, ST. LOUIS, MO.
Member United States Military Telegraph Corps.

tary circles, its practical adaptation to war needs was slow in gaining general acceptance. Nevertheless, Simon Cameron, the Secretary of War, was early convinced of its inherent possibilities in the conduct of field operations, and as the railroad obviously was also destined to play a most important part in the transportation of troops, it was natural that he should call to his assistance the most conspicuous railroad man of the day, Colonel Thomas A. Scott, of the Penn-

sylvania Railroad. In turn Colonel Scott summoned to his aid Andrew Carnegie, a practical telegrapher, and who at that time was the superintendent of the Pittsburg division of the Pennsylvania Railroad. He was placed in charge of the military railroads and telegraphs. The nucleus of the military telegraphers, operators pure and simple, were David Strouse, David Homer Bates, Samuel M. Brown, Richard O'Brien and William B. Wilson, the honored president of the Society of the United States Military Telegraph Corps, a quintette likewise contributed by the Pennsylvania Railroad, and drawn from its telegraph department on telegraphic instructions sent from Washington by Mr. Carnegie.

It would be an interesting recital to trace in full the story of how Thomas T. Eckert, who left the service as a brigadier general, in response to a call from Colonel Scott, became a military telegrapher, first as manager of the telegraph office at General McClellan's headquarters in the

LOUIS H. KORTY, OMAHA, NEB.

fall of 1861; how he became chief of the War Department telegraph staff and superintendent of telegraph lines in the Army of the Potomac, and eventually Assistant Secretary of War; how Mr. Bates was stationed at the War Department, first as operator and later succeeding Mr. Wilson as manager, remaining in the War Department after the close of the war; how subsequently and remaining closely connected throughout the war as cipher operators were associated the "Sacred Three," as they have been familiarly known, Messrs. Bates, Tinker and Chandler; how the famous cipher telegraph system, adopted by the Government, originated by General Anson Stager, received most effective aid in its development and final perfectment by General Eckert, Messrs. Chandler, Bates and Tinker; how the important services rendered by such men as Colonels Robert C. Clowry, John C. Van Duzer, S. G. Lynch, W. L. Gross, James R. Gilmore, Captain Samuel Bruch, and many others of whom it is impossible to mention within the necessarily narrow limits of this article, but of whom it may be said each contributed services of personal valor and value.

The detail of such a history would be replete with charm and delight, but space sufficient cannot be found in these columns. Enough has been stated, even though in brief outline, to afford an appropriate introduction and setting to this special edition devoted in part so largely to the military telegraphers whose meeting in fraternal reunion with the Old Time Telegraphers at Niagara Falls promises to be such a happy event. It is a fortunate circumstance that so many of the actors in the military telegraph are still alive and will contribute by their presence so much to the pleasure of a meeting bound to be memorable.

No body of telegraphers are held in higher esteem than those who in their professional capacity served army interests actively in the field during the Civil War. Their deeds were influenced by motives of patriotism, and furnish many fine examples of intelligent performance, self-abnegation and heroic devotion to the cause in which they were enlisted.

It is unfortunate that the Government has never acknowledged the validity of the claims of the military telegraphers upon the recognition and bounty of this country, so freely bestowed upon the soldier, by whose side the telegrapher acted in a common cause, sharing all perils. The body of the military telegraph corps constituted a secret service, so to speak. It furnished the information frequently that enabled the army to win the battle; its warnings oftentimes averted disaster. This meeting at Niagara Falls will be impressive in all that it represents and stands for.

The various joint committees appointed for the occasion by the Old Time Telegraphers' and Historical Association and the Society of United States Military Telegraph Corps, in addition to a special reception committee to the war veteran telegraphers previously named and specially appointed by President Wilson, are:

Reception Committee.—George A. Burnett, chairman, Great North Western Telegraph Company, Buffalo, N. Y.; Nathaniel Hucker, J. W. Sullivan, John B. Slocum, William A. Sawyer, George F. Macdonald, E. W. Collins, J. W. Tillinghast, John A. Pferd, John Lapey, C. H. Newman, I. McMichael, Charles H. Chevee, Louis J. Reynolds, W. J. Martan, William H. Slacer, H. J. Kinnucan, L. M. More, S. E. Houck, Madison Buell, Thomas A. Laird, Thomas E. Sullivan and Joseph Anderson.

Ladies' Committee.—Mrs. H. D. Reynolds, chairman, Buffalo, N. Y.; Mrs. L. M. More, Mrs. Joseph Anderson, Mrs. C. H. Newman, Miss Carrie D. Reynolds, Mrs. W. A. Sawyer, Mrs. W. L. Stow, Mrs. John A. Pferd, Miss Nellie Kearns, Mrs. George A. Burnett, Mrs. John Lapey and Miss Lillis Harper.

MILITARY TELEGRAPHERS

Sketches of Whom Have Not Previously Appeared in Telegraph Age.

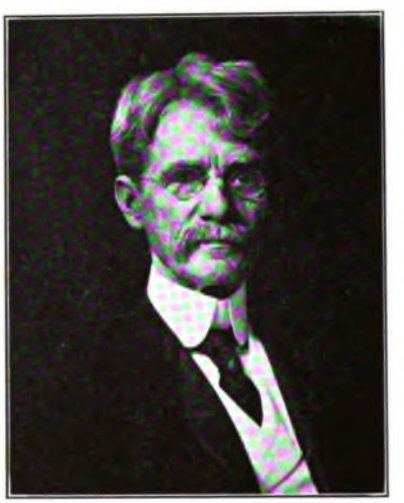
Frank B. Knight.

Frank B. Knight, special agent of the Southwestern Telegraph and Telephone Company, at Dallas, Tex., is a well known former telegrapher. He was born at Canandaigua, N. Y., December 23, 1848, and entered the telegraph service as messenger at Geneva, N. Y., in 1862. In 1863 he entered the United States military telegraphs, finding service first on the Orange and Alexandria Railroad, Virginia, and afterward at Newport News. Sometime before the close of the war he was stationed at Fortress Monroe, as operator for the chief quartermaster of the Army of the James. When the war closed, young Knight found employment with the Western Union Telegraph Company at Rochester, N. Y. Early in 1870 he was appointed chief operator of telegraphs of the Union Pacific Railroad at Omaha, resigning, in 1872, to accept the position of chief operator for the Western Union Telegraph Company at its Omaha office, of which in 1877 he became manager. In May, 1880, he retired to accept the special agency of the American Bell Telephone Company, first in the West and afterward in the Southwest. His present position he has held since 1905.

FRANK B. KNIGHT,
Dallas, Tex.

William Dunlap Sargent.

W. D. Sargent, vice-president and general manager of the New York and New Jersey Telephone Company, Brooklyn, N. Y., is a graduate from the telegraph service. He is a Pennsylvanian, having been born at Ligonier, that state, July 2, 1845. His entry into the telegraph was at Harrisburg, in April, 1860, in the service of the Pennsylvania Railroad Company, afterward becoming manager of the Western Union office at that point. He became an operator in the United States military telegraphs and was stationed at General Burnside's headquarters in Cincinnati. In 1871 he held the position of assistant electrician in the Western Union Telegraph Company at Chicago, subsequently accepting the superintendency of the District Telegraph Company in Philadelphia. This was in 1873. In the fall of 1877, he became identified with the telephone, filling the position of general superintendent at Philadelphia of the Bell Telephone Company. This he held until 1882, when he accepted his present office at Brooklyn.



WILLIAM D. SARGENT,
Brooklyn, N. Y.

Charles William Jaques.

Charles W. Jaques, now engaged in the insurance business and that of dealing in bonds and stocks at Ashtabula, O., is a native of Mansfield, O., where he was born February 9, 1845. It was at this point in July, 1859, that he first entered the telegraph service. His record as a United States military operator dates from May 15, 1861, entering the service at Chain Bridge, above Washington, D. C. He opened the first military telegraph office on Confederate soil at Alexandria, Va., on May 24, 1861. At the time of the first battle of Bull Run he was located at Springfield Station on the Orange and Alexandria Railroad. During all of the time that Generals McClellan and Burnside were in command of the Army of the Potomac, Mr. Jaques was an operator at headquarters in Washington and in the field. When Morgan made his famous raid through Ohio, he served as a cipher operator at General Burnside's headquarters in Cincinnati, and was subsequently at Knoxville during the siege of that place. At this point he was wounded. Later he acted as cipher operator at General Sherman's headquarters at Nash-

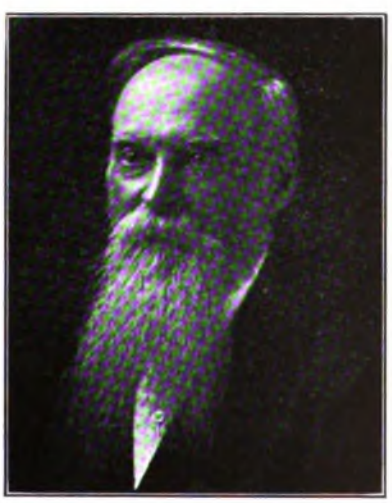
ville, Tenn., and afterward served in the same capacity under Generals McPherson, Logan and Howard in the Atlanta campaign. Mr. Jaques spent four years in the military telegraph service, and when the war closed entered the Western

CHARLES W. JAQUES,
Ashtabula, O.

Union employ for three years at St. Louis, Mobile, Ala., New York and other places, when he left commercial for railroad work, finally quitting that after serving nine years as train despatcher for the Pennsylvania Railroad, and three years as chief train despatcher at Chicago of the Chicago and Northwestern Railroad. He retired from the telegraph service twenty-four years ago.

John Lonergan.

John Lonergan, now a resident of Denver, Colo., had a notable career in the military tele-



JOHN LONERGAN,
Denver, Colo.

graph service. This was referred to at length recently in one of the series of articles now running in Telegraph Age, entitled "The Military Telegrapher in the Civil War." A note from Mr. Lonergan refers to his participation in that service as "one who has traversed the country during the Civil War from the Ohio river to Savannah; from Savannah to the Potomac, and who has seen considerable of what General Sherman termed h—."

Mr. Lonergan was born at Cashel, Ireland, February 14, 1843, and entered the telegraph at Milwaukee, April 10, 1857, as a messenger in the Wisconsin State Telegraph Company. Subsequently he became an operator in the railway service until 1862, when he served as a volunteer in a brief campaign against the Sioux Indians in Minnesota. Entering the military telegraphs in February, 1863, he was engaged for several months in active duty in the Army of the Cumberland. He was with Sheridan's division during the Chickamauga campaign; from October, 1863, to March, 1864, with General Crook, and with the 15th Army Corps until May, 1864. He saw active field service during the Atlanta campaign; from October 10, 1864, until the surrender of General Johnson, he served under General O. O. Howard in the Army of the Tennessee. Following nearly a year's employment by the Western Union Telegraph Company, Mr. Lonergan from May, 1866, to June 30, 1869, had charge of the cipher telegraph for the Department of Tennessee. The next three years was passed in Western Union employ at Nashville, Tenn. From May, 1872, to September, 1899, he acted as the joint agent for the Union Pacific and other roads, and for express interests at Marysville, Kan. At the latter date Mr. Lonergan's health failed him and he was obliged to relinquish all work.

George Washington Standifer.

The subject of this sketch, a military and commercial telegrapher and a farmer withal, died on August 6, 1908, at his home in Athens, Tenn. He

GEORGE W. STANDIFER,
Athens, Tenn.

was a member of the United States Military Telegraph Corps, of which he was justly proud, keeping the framed certificate of membership hanging in his room. His wife, loyal to his memory, sends us the following facts relative to his life.

George W. Standifer was born in Bledsoe County, Tenn., June 5, 1833. He learned telegraphy when sixteen years of age, and entered the telegraph service at Athens. The family were Union adherents when the Civil War broke out, but the father was conscripted by the Confederate authorities and died in Mississippi in 1862. The subject of this sketch served the Union forces as an expert telegraph operator during the war under General Burnside and other officers, principally in East Tennessee.

After the close of the war Mr. Standifer became an operator for the Western Union Telegraph Company, yet finding much time to devote to the care of his farm. He was a man held in high esteem in the community in which he dwelt, and his passing away aroused many old time war memories and elicited numerous testimonials as to his character.

Thomas H. Brooke.

T. H. Brooke is in the real estate and insurance business at El Reno, Okla. His telegraphic career was a diversified and picturesque one. He was born in 1844, in Preston County, W. Va. During the years 1861-62 he was in the railroad service in his native state, and afterward in Ohio. In March, 1863, he entered the United States Military Telegraph service under Captain Samuel Bruch. He was stationed at Columbia, Ky., until routed by the Morgan raid in July, 1863, when he was transferred to a position under Colonel J. C. Van Duzer. He was captured at Fostersville, Tenn., in November, 1863, by General Joe Wheeler, who paroled him as a prisoner of war. Returning to West Virginia he was engaged in special service at various points of attack on the line of the Baltimore and Ohio Railway, and was in battle with Generals Crook, Averell and Lew Wallace. Six months prior to the close of the war he was employed first in the Baltimore office and then in Washington under Assistant Manager W. H. Young, of pleasant memory and lately deceased. The war over Mr. Brooke went to Denver, Colo., but returning to Nebraska entered the railway telegraph service in which he remained there and in Oklahoma Territory until 1898, when he engaged in the furniture business at Anadarko, Okla., which he conducted for five years, when he was burned out.

THOMAS H. BROOKE,
El Reno, Okla.

Robert Moses Talbot.

R. M. Talbot, now living in retirement at Cleveland, O., has had a fine record as a commercial railroad and military telegrapher. He is a native of Claridon, O., his date of birth being March 5, 1841. He became identified with the telegraph in the railroad service at Willoughby, O., in 1852.

Mr. Talbot began his war services in June of 1861. At that time he served at Major General McDowell's headquarters at Arlington House after the first battle of Bull Run. He was with Major General Wright during the Morgan raid, and with Major General Buell in the operations in Kentucky. He also sent despatches for several months for Major General W. S. Rosecrans, commanding the Army of the Cumberland. It was when he was with Rosecrans that he was assigned to Sherman's army in its march to the sea, but was prevented from further service by sudden sickness. He was sent home, where he recovered from his dangerous illness, but he has never known a well day during his life since. For the past ten years he has been paralyzed.

R. M. TALBOT,
Cleveland, O.

During his career Mr. Talbot served as an operator of the Western Union and Pacific and Atlantic telegraph companies, and manager of the Duquesne way oil office at Pittsburg, and manager of the Central Pacific and Atlantic and Pacific companies at Stockton, Cal.

John Willard Freeland.

John W. Freeland, who is now engaged as a traveling salesman for a wallpaper manufacturing concern in Chicago, was born in Virginia in 1846, and entered the telegraph service at Mannington, W. Va., in 1860. He early became iden-

tified with the United States Military Telegraph first with General Kelley in West Virginia and later in Virginia and in Maryland. During this period Mr. Freeland says that he was paid part of the time by the United States, another part of the time by the Baltimore and Ohio Railroad Company, and frequently not at all. He rendered telegraphic assistance in running Indiana soldiers dressed in gray, over the Baltimore and Ohio Railroad and in cars that had previously been used for the transportation of cattle and hogs. When under General Burnside in Ohio, Mr. Freeland was captured at Loveland, that state, by General John Morgan at the time of his raid, but made his escape on the same day. While serving in Missouri he was captured in Platt County, that state, by the notorious guerrilla chieftain Anderson, but managed to escape and found his way back to military telegraph headquarters at Winthrop that same night. It was at this point that Mr. Freeland took charge of the military

JOHN W. FREELAND,
Marion, O.

telegraph office on April 2, 1865, subject to the orders of Captain R. C. Clowry, a post that he retained until the close of the war. While in the military telegraph service in the cold winter of 1863-64 he had his ears, nose and other portions of his face, as well as his feet, frozen, while going from Sandy Hook, Md., to Harper's Ferry, Va.

George Albree Low, Sr.

George A. Low, Sr., retired, of Wilkinsburg, Pa., a former telegrapher, is a native of Pittsburg, in which city he was born October 22, 1844. Having learned to telegraph, his first employment as an operator was in the service of the United States Military Telegraph Corps, his entry thereto being September 5, 1861. He was associated all through the war with the "Sacred Three" at the War Department office, Washington, retiring therefrom December 6, 1865. In 1866 he entered the employ of the United States Telegraph Company at Pittsburg. The early subsequent consolidation of this company with the Western Union carried Mr. Low as an asset, but he remained but a short time in the employ of the latter, leaving it to accept the position as passenger conductor on the Pittsburg division of

GEORGE A. LOW, SR.,
Wilkinsburg, Pa.

the Pennsylvania Railroad, which he held for fourteen years. Afterwards as a trusted employe in the Edgar Thomson Steel Works, and with Carnegie Brothers and Company, he passed the following twenty years, thus completing his business career.

William Spinner.

William Spinner, manager of the Western Union Telegraph Company at Eureka, Nev., and who also holds the office of recorder as well as that of ex-officio auditor at that point, of Eureka County, political positions he has filled continuously for the past sixteen years, began his telegraphic career fifty-three years ago as a messenger boy at Paris, Ont. He was born at Utica, N. Y., in October, 1842. In the fall of 1855 he did some work as an operator at Galt, Ont., and

WILLIAM SPINNER,
Eureka, Nev.

later at Komoka, Niagara and St. Catharines. In connection with this early experience, Mr. Spinner refers with evident pride and affection to the now venerable H. P. Dwight, president of

the Great North Western Telegraph Company. In 1859 young Spinner entered the railway telegraph service at London, Ont., and afterwards at Detroit, thence returning to London. In September, 1861, he joined the United States Military Telegraph Corps and was assigned to service first in Missouri and later in Kansas under the supervision of Colonel R. C. Clowry and others. Resigning from army work in 1863, he went further west, but returned east in 1865 and found employment in the telegraph at Cincinnati and Memphis. In May, 1870, he went to Sacramento, California, and later in the same year to Nevada. He opened a repeating office at Elko, that state, in the spring of 1871, and in October following was transferred to Eureka, at that time but a camp. Here for eighteen years Mr. Spinner remained as the manager of the Western Union Telegraph Company, when he resigned to enter the railroad service at Palisade, Nev. His election in 1892 to political office caused him to return to Eureka, the county seat, and where, in 1895, he was reappointed to his former position of manager of the Western Union interests at that point.

Charles Exera Brown.

C. Exera Brown, of Chicago, a former telegrapher, who was actively engaged as a military

C. EXERA BROWN,
Chicago, Ill.

telegrapher during the Civil War, was born October 28, 1839, in Bloomfield township, Huron County, Ohio. In 1858, at Adrian, Mich, after a boyish experience as a candy and apple peddler, and newsboy on the railroads, he commenced the study of telegraphy, in the meantime filling numerous railroad positions. An apt student of the dots and dashes he soon acquired the ability to send and receive good Morse, and was given charge of a railroad station. In 1863 he went to Nashville, Tenn., to engage as a military telegrapher, which he did under Colonel J. C. Van Duzer, serving until the close of the war, mostly in Tennessee and Alabama, and with a devotion to duty for which he received a number of letters of commendation. After a brief return to the railroad service as agent and operator at Osgood, Ind., he embarked at Adrian and Saginaw, Mich., in the business of publishing trade circulars, city directories and railroad gazetteers, his business operations gradually extending to include sixteen states and territories. Other business employments have also engaged his attention. Mr. Brown had personal acquaintance with many well-known public people of whom he relates numerous interesting stories.

Clinton Wallace Gulick.

Clinton W. Gulick, well known as a constructor of telegraph lines, was born in Pennsylvania

C. W. GULICK,
White River Junction, Vt.

March 26, 1839. In 1861 he first entered the telegraph service, engaging in construction work in the employ of the Atlantic and Great Western Railroad. In 1864 he joined the United States Military Telegraph Corps in the Army of the Potomac, under Dennis Doren, later being transferred to the Army of the James as Chief of Construction under John H. Emerick. It fell to Mr. Gulick's lot to run the first wire into Richmond after the evacuation of that city. Sent to the Department of the South, under Colonel James R. Gilmore, he there remained until 1866, when he again entered upon railroad telegraph construction work in the Middle States. In 1870 he entered the Western Union telegraph service in New York, as general foreman of construction, once again coming under the direction of Dennis Doren. In 1874 he became superintendent of construction at Chicago of the Atlantic and Pacific Telegraph Company, and in 1878 transferred his services to the American Union Telegraph Company and was detailed for work in the Middle, South and Southwestern states. In 1881 he returned to the employ of the Western Union as superintendent of construction at Minneapolis, a position he retained until 1892, when he accepted the appointment by the Postal

Telegraph Company as Right of Way agent, at Chicago. In 1894 he again enlisted in the service of the Western Union as general foreman, being stationed at White River Junction, Vt. After ten years in this position he retired, having completed forty-three years of active work constructing telegraph lines, distributed over thirty-five states. Mr. Gulick continues to make his home at White River Junction.

Orry Mortimer Shepard.

O. M. Shepard, of New Haven, Conn., general assistant of the New York, New Haven and Hartford Railroad Company, a former telegrapher and a member of the executive committee of the Society of the United States Military Telegraph Corps, is an Ohioan, his native place being

ORRY MORTIMER SHEPARD,
New Haven, Conn.

Cleveland, where he was born November 9, 1842. He became identified with the telegraph service at Honnoye Falls, N. Y., in 1857. In 1863 he entered the military telegraph and railroad services of the government, where he remained until the close of the war. Going west in 1865, he became train despatcher of the Gilman, Clinton and Springfield Railroad, now embraced in the system of the Illinois Central, in which service he rose through various grades, reaching that of superintendent of telegraph, master of transportation and assistant superintendent. From 1874 to 1880 he held the post of assistant general superintendent of the St. Louis and Southeastern Railroad. In 1880 Mr. Shepard accepted the superintendency of the old New York and New England Railroad, now merged with that of the New Haven, with the latter of which, in 1882, he became a division superintendent, afterwards serving as assistant to the president. From March, 1886, to March, 1890, Mr. Shepard was general superintendent of the New Haven, and on the latter date was transferred as superintendent ot the New York division, where he remained until June 1, 1903, when he was appointed general superintendent, with headquarters at New Haven.

Seeking rest, Mr. Shepard retired from this responsible position and its arduous labors, on October 1, 1907, and accepted that of general assistant, in which he now serves the New Haven system in an advisory capacity. Mr. Shepard is held in high esteem in railroad circles as a man of superior executive abilities and of high character, respected also alike for his kindly manner.

Spencer B. Rumsey.

Spencer B. Rumsey, a member of the United States Military Telegraph Corps, a former railroad and commercial telegrapher, now retired and living at Oakmont, Pa., is a native of Fitchville, Huron County, O., where he was born March 12, 1846. He commenced the study of telegraphy April 7, 1862, in the office of the Milwaukee and St. Paul Railway Company at Hartford, Wis., a year later, March 23, 1863, receiving his appointment as an operator in the same interests at Sparta. On September 1 of that year he was transferred to the superintendent's office at Milwaukee. From September 1, 1864, to October 31, 1865, young Rumsey saw active duty in the mili-

SPENCER B. RUMSEY,
Oakmont, Pa.

tary telegraph. Returning to civil life he entered the service of the Milwaukee and Minnesota Railroad Company as superintendent's clerk and telegraph operator. On January 1, 1868 he accepted the managership of the Pacific and Atlantic Telegraph Company at Philadelphia, his promotion to be superintendent of the eastern division of that company following on May 10, 1873. He was appointed special agent of the Oil Creek and Allegheny River, and Buffalo, Corry and Pittsburg railway companies, April 1, 1875, receiving the further appointment on September 1, to a like office in the service of the Allegheny Valley Railroad Company, acting jointly with the two roads first mentioned until September 1, 1878, when he continued in the capacity of special agent for the latter road alone. On January 14, 1887, he was promoted to the superintendency of the Low Grade division of the Allegheny Valley Railroad Company, filling this position until July 31, 1900, when he retired from all active business.

OLD-TIME TELEGRAPHERS

Sketches of Whom Have Not Previously Appeared in Telegraph Age.

Edward Dickinson.

Edward Dickinson, who is now vice-president and general manager of the Kansas City, Mexico and Orient Railway Company, at Kansas City, Mo., illustrates in his career inherent possibilities, in some degree possessed by every man, and which may be enhanced by close attention to duty, observation and study, that may result in elevating one to high position in the struggle of life. Mr. Dickinson was born in Cumberland, Md., and became connected with the telegraph at Cleveland, O., in May, 1865, serving the Atlantic and Great Western Railway as a telegraph operator from that date to 1869, subsequently serving during 1870-71 as assistant train despatcher and train baggagemaster. From 1872 to 1902, inclusive, in the Union Pacific service at Omaha, Mr. Dickinson rose through the successive grades of telegraph operator, trainmaster, division superintendent, general superintendent,

EDWARD DICKINSON, KANSAS CITY, MO.
Vice-President and General Manager, Kansas City, Mexico and Orient Railway.

assistant general manager, and general manager, covering the last eleven years with that company. His proved capacity as a railroad executive led to his being called to his present position, which he has filled with increasing ability since 1903.

Alfred Weller.

Alfred Weller, who at the age of seventy-three is still actively employed in the Western Union Telegraph Company at Chicago, was born in Lewis, England, April 10, 1835. He commenced his telegraph career as a messenger at Marshall, Mich., in 1847, succeeding to the position of an operator in 1848. In the fall of that year he took the election returns which placed General Zachary Taylor in the Presidency. He read by sound and such was the suspicion directed against that method at that time, that he was threatened with dismissal. A period spent at school was followed by a return to the telegraph, this time at White Pigeon, Mich. In 1857 Mr. Weller was appointed manager of the Western

ALFRED WELLER, LA PORTE, IND.

Union office at Milwaukee, Wis., a position he held continuously for forty years, until 1898, during which long period he rendered most efficient service.

Dr. William R. Andrews.

Dr. William R. Andrews, a practicing physician of Mannington, W. Va., is a graduate from the field of telegraphy to that of medicine. The doctor hails from Michigan, where he was born October 1, 1861, in Thornapple township, Barry County. Owing to the death of his father the lad was early thrown upon his own resources, and on January 8, 1876, he became a messenger at Washington, D. C., for the Western Union Telegraph Company. Although his education in early years had been somewhat neglected, the boy endeavored by hard study at odd times to overcome this objection, and to acquire the art of telegraphy. This he was able to do and in his nineteenth year became an operator in the main office. In 1881 he transferred his services to the Mutual Union Telegraph Company, and the year following was sent to Dayton, O., as the special agent of Superintendent E. A. Leslie to straighten out a local tangle and to improve the service at that point, all of which he accomplished. Returning to Washington he became night manager of his company, until consolidation with the Western Union was effected, when he became night manager for the American Rapid Telegraph Company, also at Washington. Following the strike of 1883, in

which he participated, although opposed thereto, he found employment in brokers' offices until the advent of the Postal at Washington, when he was

DR. W. R. ANDREWS, MANNINGTON, W. VA.

appointed night manager of the newly established office, afterward becoming chief operator. During this time, Mr. Andrews studied medicine, which he continued at Philadelphia while serving on the Postal night force at the time when Charles C. Adams, now second vice-president of the company, was superintendent. Graduating in 1892, second in a class of sixty-five, Dr. Andrews established himself first at Rockville, Md., removing after eleven years of successful practice to his present place of residence.

Franklin Pierce Ainsworth.

Franklin P. Ainsworth, president of the First Bank of Glenwood, at Glenwood, Wis., a former

F. P. AINSWORTH, GLENWOOD, WIS.

telegraph operator, was born at Littleton, N. H., May 9, 1852. He learned telegraphy while yet a boy, and before reaching his fifteenth year, namely, in March, 1867, became an operator at Bath, N. H. Going west he found employment as an operator, and eventually received the appointment as manager of the telegraph office at St. Peter, Minn. For twenty-five years he was an operator and station agent for the Omaha Railway, resigning which to enter the banking business. Mr. Ainsworth is a frequent attendant at the reunion of the Old Time Telegraphers and Historical Association. He stands high in Masonic circles, having occupied the position of Grand Junior Warden of the Grand Lodge of Wisconsin. He was also honored by having been elected Grand High Priest of the Grand Chapter of Royal Arch Masons for the year 1904-5.

William A. Robb.

W. A. Robb, chief operator of the Western Union Telegraph Company, at Portland, Ore., was born at Montreal, Canada, February 27, 1870. His entry into the telegraph service dates from June, 1884, in connection with the Great North Western Telegraph Company, in his native town, first as counter clerk, from which he was advanced to the operating department. Later

W. A. ROBB, PORTLAND, ORE.

he became an agent for the Canadian Pacific Railroad on the Pacific division, afterward becoming an operator in the commercial service of that company at Vancouver, B. C. He then accepted a position as an operator for the Western Union at Portland, Ore. Here his promotion has been steady, reaching in turn the positions of traffic chief, day and night, night chief, and now chief operator.

Mr. Robb is fond of athletic sports, and for a number of years has been a director in the Portland Rowing Club, serving also as its vice-president and president. He is secretary of the Oregon Yacht Club; secretary and treasurer of the North Pacific Association of Oarsmen, and Secretary of the Multnomah Athletic Club, all of Portland. He is president of the Western Association of Old Time Telegraphers, organized several years ago, and which has a membership of over two hundred of those who have been in the telegraph business over fifteen years.

David S. Anderson.

David S. Anderson, the Western Union manager at the Board of Trade, Chicago, is a well-known member of the telegraphic fraternity, by which he is highly regarded. He was born at Mansfield, O., in August, 1847, at which place, in 1863, he became connected with the telegraph as a messenger. He was afterwards employed as an operator, in which avocation he became expert, at Fort Wayne, Ind., Crestline, Alliance, Orrville and Mansfield, Ohio, and at Oil City and Titusville, Pa. He made an effort near the close of the Civil War to enter the military telegraph service, both in the Army of the Potomac and at Nashville, Tenn., but without success, as there were no vacancies at the time. He then returned to Western Union employ, first at Cleveland, afterwards at Sandusky, and then at Chicago, reaching the latter place in July, 1867. His fine qualifications as an operator brought him recognition, for he subsequently reached the positions

DAVID S. ANDERSON, CHICAGO, ILL.

of wire chief and assistant manager of the main office. In 1889 he received the appointment of manager of the Board of Trade office, a place of much responsibility, which he has since continued to fill with credit.

Henry Lester Gregg.

Henry L. Gregg, a well-known telegrapher, who comes of a meritorious New England ancestry, was born at Albion, N. Y., September 26, 1834. With the advent of telegraphy he became interested in the art, and when a youth learned to master the dots and dashes, and became expert as an operator. His first employment as such dates from March 1, 1857, in the office at Buffalo, N. Y. During the Civil War Mr. Gregg served in the United States Military Telegraph Corps from November 7, 1861, to January 31, 1862, under General Joseph Hooker, Army of the Potomac; and from September 1, 1864, to October 31, of that year at Petersburg, Va. In the fall of 1864 he entered the telegraph office at Rochester, N. Y., where he served as an operator continuously for thirty-two years. His acquaintance in Rochester, the initial city of the Western Union Telegraph Company, was extensive and incidents of telegraph history, at the point where many of them

HENRY L. GREGG, ROCHESTER, N. Y.
Member United States Military Telegraph Corps.

originated, store his mind. Subsequent to his long Western Union experience he served as ticket agent for the Wagner Palace Car Company.

Charles J. Heath.

Charles J. Heath, manager of the Western Union Telegraph Company at Fort Worth, Texas, hails from Iowa, having been born in that state at Clinton, December 11, 1871. When fourteen years of age he entered the Western

C. J. HEATH, FORT WORTH, TEX.

Union telegraph office in his native place, as a messenger. He soon acquired the ability to telegraph, and was promoted to be an operator, afterwards serving in this capacity in the Chicago office, with frequent assignments to act temporarily as manager at various points in

Illinois and Iowa. In 1896 he went to Houston, Tex., during the yellow fever scare at that point to help out during the then prevailing rush. Satisfied with general conditions as he found them, he remained in the South, where his abilities found quick recognition in managerial appointments in the Western Union service, first at Monroe, La., then at Texarkana, Ark., and finally at Fort Worth, where he is now located.

T. J. Farrell.

T. J. Farrell, manager of the office of the Western Union Telegraph Company at Bridgeport, Conn., is a bright member of the younger element in the telegraph service. He was born at Newark, N. J., May 20, 1884. In September, 1898, he became a telegraph messenger in his native city. Diligent and attentive to duty he received the appointment as manager of a branch office, soon

T. J. FARRELL, BRIDGEPORT, CONN.

thereafter becoming a clerk and an operator in the main office. From Newark he was transferred to a clerkship in the office of the superintendent at New York. From thence he was sent to Hartford, Conn., there to take the position of audit clerk in the superintendent's office in that city, subsequently being made estimate clerk, from which he was promoted to the cashiership of the office. His all around acquaintance with the telegraph business and proved executive qualities, secured him the appointment as manager at Bridgeport.

James M. Maddox.

James M. Maddox, superintendent of the American District Telegraph Company, at San Francisco, was born on a farm in Putnam County, Ind., October 16, 1860. He became a messenger at Crawfordsville, Ind., October 1, 1877. His first position as an operator was secured one year later when he was appointed assistant to a railroad agent at a salary of $5 a month and board and lodging. After subsequent service in railroad work Mr. Maddox entered the Western Union employ in 1881 as an operator at Indianapolis, Ind. Later at Peoria, Ill., he was with the Mutual Union, thence transferring his services to the Western Union, first at St. Louis, then at Kansas City and Omaha, where he also entered the railroad service, returning to the Western Union at Kansas City. June 1,

JAMES M. MADDOX, SAN FRANCISCO, CAL.

1884, he was appointed manager of the Pacific Mutual Telegraph Company at Atchison, Kansas, from which place he was transferred in the same capacity to Omaha. After this at Sedalia, Mo., and Little Rock, Ark., he was again in the railroad service. From the summer of 1887 to January 1890, he was a Western Union operator at St. Louis, when he was appointed manager of the time service. In November, 1892, the burglar alarm and night watch service of the Commercial Telegraph Company engaged his services. From the fall of 1894, to June, 1902, the was manager of the Missouri District Telegraph Company. In May 1903 Mr. Maddox was appointed manager of the American District Telegraph Company at San Francisco, from which he received promotion August 1, 1908 to the position of superintendent of the signal department of the company for the Pacific division.

Otto Strubel.

Otto Strubel, a well-known electrician and submarine cable engineer, of whom, unfortunately, a picture is lacking, is a German, the year of his birth in that country being 1852. He became identified with the telegraph in 1881, entering the employ of Siemans Brothers and Company, the cable manufacturers, at Woolwich, England. In this service during the nine years following, which proved a valuable school of instruction, he gained extensive practical experience in the construction and laying of several Atlantic cables, a field of endeavor in which he became expert. He also assisted in the laying of the Halifax

and Bermuda cable, in the laying and subsequent repairing of the French cable, later, again, returning to the service of the French Cable Company. He aided the United States government in the laying of the cables in the Philippine archipeligo, and has since been engaged with the Central and South American Telegraph Company.

Walter Wentworth Massie.

Walter W. Massie was born in Providence, R. I., December 15, 1874. He was educated in the public schools of that city and studied mechanical and civil engineering at Tuft's College and Brown University. In 1896 he entered the city engineer's office of Providence, where he won rapid promotion. Ever since childhood Mr. Massie has been interested in electricity and made it a hobby. Having read about discoveries in wireless telegraphy, in the winter of 1896-7 he commenced systematic investigations in the art which resulted in his invention of the Massie wireless telegraph system of to-day. In April, 1905, he organized the Massie Wireless Telegraph Company, holding the position of general manager. Through his personal efforts, the Massie company, in 1906, obtained control of The Marine Transmission Company, the latter operating numerous steamers and land stations equipped with the Massie system, and the Bureau of Marine Intelligence was organized. During the same year Mr. Massie was elected president of each of these three companies, which positions he has held ever since; his positions with the two former companies being president and general manager. It is noteworthy that Mr. Massie's name has never been associated with any of the sensational stock-jobbing wireless deals. He has kept the records of his companies clean, and has set an example of how a wireless business may be conducted on a paying basis by adhering to strictly legitimate business methods. Mr. Massie is the joint author with Charles R. Underhill of the new volume entitled "Wireless Telegraphy and Telephony."

WALTER W. MASSIE, PROVIDENCE, R. I.
Inventor Massie Wireless Telegraph System.

Charles Reginald Underhill.

Charles R. Underhill was born in Chappaqua, N. Y., November 2, 1874. He attended the public schools, practicing telegraphy in a telegraph office evenings. In 1891 he entered the employ of the Western Electric Company, New York, in the inspection department. This position gave him an excellent opportunity for the study of telegraph and telephone apparatus, and while gaining a practical knowledge of applied electricity he also acquired a technical education by diligent evening study, which secured his promotion to the charge of the electrical testing and inspection in this department. In 1900 Mr. Underhill accepted the position of chief electrical engineer of the Varley Duplex Magnet Company. Realizing the lack of published data regarding electromagnets and solenoids to perform a given duty, he devoted several years to the careful study of this branch of design. Since 1904 Mr. Underhill has been engaged in consulting electrical engineering in New York. He is the author of a book entitled "The Electromagnet," and has contributed numerous articles to the technical press, describing the results of his experimental research. He is also the inventor of an instrument for printing in English characters wireless messages sent in either the Morse or Continental codes, which has given excellent results over distances usually coverede by the ordinary ink recorder. Mr. Underhill is the joint author with Walter W. Massie of the new volume entitled "Wireless Telegraphy and Telephony."

CHARLES R. UNDERHILL, NEW YORK.
Inventor and Electrical Expert.

Eternal vigilance is not only the price of liberty, but of every other good thing.

Jesse Wright Crouse.

Jesse W. Crouse, now retired, and a resident of Philadelphia, Pa., was born at Cassville, Pa., August 8, 1838, and entered the telegraph service in June, 1855, at Lewiston Junction, Pa., afterwards becoming a telegraph operator of the Pennsylvania Railroad, at Philadelphia. Mr. Crouse built the first line of telegraph in the extreme northwestern part of the then territory of Minnesota, running down

JESSE W. CROUSE, PHILADELPHIA, PA.

the Red River of the North from Fargo to Pembina. He was ordered to Washington in the latter part of April, 1861, by Colonel Thomas A. Scott, afterwards Assistant Secretary of War, as an emergency operator, serving from that date until the following September, and taking with him William Tinney and H. C. Snyder. From service at the War Department he was placed in charge of the telegraph office of the old Baltimore and Ohio Railroad depot, afterward being sent to Fortress Monroe, by David Strouse, there to construct a cable through the fortress to connect with a line of wire to Newport News. Mr. Crouse was assistant superintendent of the Mississippi Valley Telegraph Company, at Dubuque and Chicago, and afterwards assistant superintendent of the Northwestern Telegraph Company at St. Paul, Minn. Returning East he entered the railroad service as special agent of the auditor's department of passenger receipts of the Pennsylvania Railroad at Philadelphia, later becoming chief clerk to the auditor, a position he continued to hold until retired because of the age limit of seventy years, on August 31, 1908.

The chief Australian commonwealth electrical engineer (John Hesketh) estimates that to meet public requirements in connection with telephone and telegraphic works in that country during the next three years, £2,100,000 will be required.

CATARACT AND INTERNATIONAL HOTELS, NIAGARA FALLS, N. Y.
Reunion Headquarters of Old Time and Military Telegraphers.

J. ORTON KERBEY, WASHINGTON, D. C.
Member United States Military Telegraph Corps.

JOHN F. GUTHRIDGE, WASHINGTON, D. C.
Member United States Military Telegraph Corps.

The Railroad.

The Erie Railroad will establish telephone train despatching circuits over two of its main line divisions at once, as follows: Delaware division, Port Jervis, N. Y., to Susquehanna, Pa., one hundred and four miles, and the Meadville division, Meadville, Pa., to Corry, Pa., forty-one miles. This work will be executed under the supervision of E. P. Griffith, superintendent of telegraph.

Train Despatching by Telephone.

The subject of train despatching by telephone is receiving so much thoughtful consideration at the present time, that the matter in its every phase of development and application has become vested with special interest. In the desire to acquaint themselves relative to means and methods the railroad telegraph superintendents are seeking every available avenue of information. One question frequently asked is that relative to which particular portion of the pole is the best to locate the telephone despatching circuits. A well-known authority, in answering this query, also discussed the general proposition at length in the following informing manner:

"The best location for telephone despatching circuits on poles is on the top arm and the pole pins. In this position they are free from interference caused by broken wires falling across the circuit or by pieces of wire which may be thrown across the wires on the pole. The importance of keeping these circuits free from interference is obvious, and the construction used should be of the highest grade. In addition to this, the lines should be maintained in first-class condition if a superior degree of telephone service is expected, and I think you will agree with me that the best service is necessary for so important a use. It is my belief that every influence should be used to induce the railroad companies to adopt a high standard of transmission. By this is not only meant the volume of transmission, but the quality of transmission. As you are probably aware, it is possible to have a large volume of sound on a circuit, but have a quality so poor that words and letters are misunderstood. These two characteristics of telephone transmission, namely, volume and quality, are affected by the apparatus used as well as the kind, size and resistance of the wire in the circuit. It must also be remembered that service will be affected by the inductive disturbances caused by adjacent circuits, and steps should be taken to reduce this interference to a minimum. It is not safe to assume that transpositions every half mile will remove inductive disturbances from a circuit, as, in many cases, it will be found that the conditions along the line vary, some cases being much more severe than others, and for this reason sections of a line will require more transpositions per mile than others. When constructing new telephone lines it is much easier and cheaper to provide for transpositions than after the line has been constructed, and for this reason it is advisable to make a study of the inductive disturbances before construction work is started, thus enabling the construction crew to make the necessary transpositions along the line at the start and with the minimum expense.

"Another thing to be remembered is that even with a properly constructed line equipped with the best type of telephone apparatus, the service can be seriously affected by employes not using the telephone in the proper manner. I had occasion recently to observe the service on a number of despatching circuits, and have found, in many cases, that the operators, although instructed to do so, do not speak into the transmitter, or, if they do speak into it, have their lips several inches away from the mouthpiece. The effect of this is not apparent to the operator, but is very noticeable to the despatcher, as it greatly reduces the volume and quality of transmission over the circuit. Instructions should be issued covering the use of the apparatus, and employes should be supervised to see that these instructions are followed if the best service is expected.

"In connection with the maintenance of the service, it should be remembered that at busy stations the battery maintenance will be higher than at stations where the telephone is used less frequently. Regular inspections should be made to determine the condition of the batteries at the various stations. Inspectors should be provided with suitable measuring instruments to insure accurate information being obtained by these inspections."

A Tantalum Wave Detector, and Its Application in Wireless Telegraphy and Telephony.

It has been known for some years that the metal mercury lends itself well to the purpose of constructing a detector of electric oscillations which is capable of spontaneously returning to its initial or sensitive condition, or, in other words, is spontaneously decohering. The two elements which have hitherto been known to show this property when used in conjunction with mercury are iron (steel) and carbon. Both of these have been employed, singly and together, in the Italian navy coherer, otherwise known as the Castelli, also the Solari coherer. The use of carbon is, however, very undesirable for reasons which are well known, while iron is a very unsuitable metal for use in places where there is any considerable amount of moisture in the air; at the best it is only a question as to how long rusting can be deferred.

These considerations had, as early as 1902, led the author to consider means for utilizing a noble metal in combination with mercury. It was at that time found impossible to make use of platinum without the employment of some liquid dielectric—in this case pure water—interposed between the mercury and the platinum, and then only when the platinum wire was glass-sheathed. Such an arrangement required, in addition, to be mechanically restored to the sensitive state. The recent trend of work in wireless telegraphy has all been in the direction of the employment — at least for general use — of telephonic or aural reception, and hence coherers have mostly fallen into disuse, especially as the only reliable and durable ones were those which required mechanical restoration. The advent of the tantalum lamp, which appeared to promise that this hitherto unobtainable metal would soon be commercially available, seemed to hold out some possibility of successfully overcoming the previous difficulties in the way of finding a suitable noble metal. For the fact that tantalum is a noble metal in so far as its chemical behavior is concerned; that it is indifferent to atmospheric influences; that it has great strength and ductility; and, finally, that it is absolutely indifferent to mercury, seemed to bear out this view.—L. H. Walter, M. A., in The London Electrician.

Kiebitz's Directive Arrangement for Electric Waves.

The Electrical Review, of New York, gives a brief description of a directive system for electric waves which has recently been patented in Germany by Dr. F. Kiebitz. In the arrangements hitherto proposed for this purpose use has sometimes been made of some form of compound oscillator—that is, one in which an electric or open oscillator is combined with a closed oscillator. Dr. Kiebitz's device consists of a new arrangement of the compound oscillator. Although it has been tried over short distances only, sufficient data are given for an energy diagram to be plotted. In it the directed electromagnetic waves are excited by giving the radiating system such a shape that although the electric and magnetic systems generated in space have each an axis of symmetry, the two axes are in this case perpendicular or make an acute angle, while at the same time the direction of the magnetic force is inclined to that of the electric force. In this case the plane of the greatest magnetic force is inclined to the plane of the greatest electric force, the line bisecting the enclosed angle being in the direction of the greatest energy emission. The same device can be used at the receiving station, when it then absorbs chiefly those waves having the direction in which it is set. The arrangement consists of a solenoid with its ends connected to two metal surfaces. When such a system is excited inductively the electromagnetic field which it sets up consists of a magnetic doublet oscillating in the direction of the axis of the solenoid and an electric doublet oscillating in the direction connecting the two metal surfaces. The electromagnetic field thus has a minimum in the plane containing these two directions and a maximum at right angles to it. Nothing is changed when the earth is substituted for one of the metal surfaces, the direction of the maximum force then being along the earth. Experiments with this apparatus have been conducted both in the laboratory and in the open. The wave-length employed was twenty-two meters and the received energy was measured thermally. On revolving the transmitter in the laboratory a diagram of received energy was obtained having the form of a narrow lemniscate. In the open the ratio of maximum to minimum energy received was 70 to 1. A directive receiver gave the same results. With an electrolytic receiver at thirty meters, receiving distinct signals at zero degrees, rotation of the arrangement through thirty degrees caused the signals to cease. Before the practical value of the apparatus can be determined, experiments on a larger scale must be conducted.

Attempts were made at the Tegel manoevring grounds, near Berlin, on July 23, to telegraph from the wireless stations at Nauen and Norddeich, and from a portable station at Tegel, to two free balloons, which ascended from the latter place and which were equipped with receiving apparatus. It is stated that the results of the experiments were satisfactory. They were continued on the following day with the old military airship. A complete wireless station had been fitted in the car of the airship, which ascended and manoeuvred at a height of 800 feet, where it had to face a strong wind from over the Tegel proving ground. Several messages were sent to and received by the officer in command of the airship. The experiments are to be extended and endeavors made to exchange messages between the airship and the stations at Nauen and Norddeich.

Studying American Telegraph Systems for Chinese Adoption.

Henry K. Hudson, an Englishman, who is connected with the government telegraph lines in China, is in San Francisco studying the telegraph service of the Southern Pacific, Western Union and Postal companies. He is to make similar studies in the East and will then make an official report on the subject to the Chinese government.

"The Chinese," remarked Mr. Hudson in an interview, "are extending their telegraph system to every corner of the empire, and Pekin will soon be in communication with all of the principal cities of Mongolia, Turkestan and Tibet, as well as those of China proper.

"The wires are being erected and operated by Chinese. The telegraph system of the empire is under the direction of Mr. Long, a Yale graduate, who came over here with a commission of inquiry two or three years ago, and I believe he is chairman of the Yale Alumni Association of China.

"He occupies a large building in Shanghai, with a force of forty or fifty clerks and operators, and has been directing the extension of the lines from there.

"It looks a little odd to see a Chinaman at a telegraph key, and people wonder how they are able to communicate by wire in their own language. But the process is very simple. They use a phonetic system based upon the Morse code and wire the syllables as they sound to the ear, without using an alphabet in the Chinese language.

"There has been a telegraph line from Darjeeling, India, to Lhassa, the capital of Tibet, ever since Colonel Younghusband, of the British army, led his expedition to that city in 1904, and English residents are now representing the Indian government of India there, who need it to communicate with the viceroy at Calcutta. But the line is not open to the public and the Chinese government needs a means of communication with Tibet very much, because it is engaged in the organization of that province. The nearest telegraph station to Lhassa on the Chinese side is at the city of La-Chien-lu, on the border between Szechuan and Tibet, and the wires will be extended from there."

Seeing at a Distance.

Mr. Jules Armengaud, a well-known engineer of Paris, has recently experimented with image transmission at a distance, and hopes, by means of his apparatus, to solve this very difficult problem. This refers naturally to what we call "seeing at a distance," and not to the sending of photographic views over a wire, as, in fact, the latter is now accomplished in a very satisfactory manner by Dr. Korn's apparatus. What Mr. Armengaud wishes to carry out is a method of direct vision by the use of a selenium cell and a rapidly moving apparatus which will cover all the parts of an image in a very short space of time and thus give a practically permanent impression of the whole image on the retina.

There are at present two generally recognized methods by which we may hope to solve the problem of "seeing at a distance." One of these is to decompose a photograph into a number of points, as we have in a half-tone plate, and to transmit each of the points in succession by means of a selenium-cell device. At the receiving station a permanent record would be made of each of the points in a suitable apparatus, so as to reproduce the image in the form of the original.

However, as the number of points is very great, even for a small image, such a method would require a considerable time to cover all the parts of the photograph, or a direct image projected by a camera, and for this reason inventors seek rather to solve the problem by the second method, which consists of covering all the points of the image by a rapidly moving device and to project the light from each on to a selenium-cell apparatus.

The receiving device would move synchronously with the former and would throw a moving spot of light upon a screen so as to reproduce all the parts of the image before the eye would have lost the impression. This would require the whole reproduction to be made within 0.1 second. In this case the disadvantage lies in the great speed which is needed, for a great number of impulses must be sent over the line within this time. The inertia of the selenium cell is another factor, and a leading one, which must be contended with in this solution. Nevertheless, the attention of inventors seems to be turned rather to this method, inasmuch as the other method is counted as almost impossible to carry out in practice. — O. de Courcy in the Western Electrician.

Mr. A. G. Saylor, assistant general superintendent, Western Union Telegraph Company, New York, in renewing his subscription, said: "Telegraph Age is undoubtedly exclusive in its value to those engaged in the telegraph service; not only on account of its complete news, but especially on account of the very instructive articles published in each issue relating to the various branches of the service."

The Washington-Alaska military and telegraph system has been extended to Cordova, Alaska, by the construction of a branch from the existing cable on the north side of Montague Island to Cordova. The work was completed by the cable ship Burnside and the office at Cordova was connected and opened for business on August 12.

LETTERS FROM OUR AGENTS.

The current information of any office will, if carefully chronicled, furnish a welcome digest of news that will be read with pleasure and satisfaction by thousands, and this limit should constitute the legitimate contents of all letters. And we wish that our correspondents would avoid the too frequent habit, at all times a bad one, of abbreviating words in writing. This is a peculiarity among telegraphers, we know, but what may be plain to the writer, and for local interpretation, is usually a mystery to the editor, and is apt to lead to an error in the printed statement.

DENVER, WESTERN UNION.

Business has been quite dull for the past six months with the exception of a few weeks this summer during the convention rush, which taxed the capacity of the office. During the convention proper one million seven hundred thousand words newspaper special was transmitted, besides the flood of individual telegrams. The manner in which the whole thing was handled was a credit to the local officials and the staff, as well as to Assistant General Superintendent McKisick, of Chicago, who was in Denver several weeks prior to the convention getting things lined up.

The nomination of Bryan took place about three o'clock on Friday morning. About a quarter of twelve that night several of the delegations, including Tammany, of New York, requested that the big Western Union electric clock in the main hall be stopped before twelve o'clock in order that Bryan should not be nominated on Friday (the bad luck day), as he had been twice previous. It was found no one had a key to unlock the clock, and a message was sent to the main office of the Western Union, and a key was hurried to the hall by a messenger boy on a wheel. The clock was stopped exactly three minutes to twelve, and so according to the clock Bryan was nominated on Thursday. Mr. R. P. Cowardin has the clock key for a souvenir, and says if Mr. Bryan goes to the White House he will present him with the same.

Manager J. F. Reade has just returned from a two weeks' vacation, spent on his ranch near Alamosa, Col. Assistant Manager George E. Lawton acted as manager during his absence.

SALT LAKE, POSTAL,

What Ogden was fifteen years ago Salt Lake City is to-day—the telegraphic gateway to that vast territory embracing the states of Utah, Nevada, Idaho, Montana, Washington and Oregon. The office is one of the best equipped and best appearing telegraph offices in the west. Mr. Donald McNicol is the manager.

The chief operator, R. D. Riley, has had long experience in the operating room, having worked at 195 Broadway, New York, for twenty years as a wire chief. Mr. Riley has just returned from a vacation spent in the mountains. The night chief operator, C. F. Bunnell, is an experienced commercial telegraph man, having previously worked as a chief operator at Omaha, Neb. George Denison is assistant chief and repeater rider, having charge of the fifth overland circuit worked duplex from Chicago to Seattle. Mr. Denison is an old timer in the west, having been one of the original Ogden experts, when twenty-five years ago they handled fifty messages an hour with a pen.

The Chicago bonus circuit is worked by L. O. Loudenber.

Other promising members of the operating force are D. H. Townsend and D. J. Homer.

Maintenance and repair of lines is in the hands of Delos Marsh, foreman. The clerical force consists of Miss B. Malin, cashier; Miss McPherson, bookkeeper, and Messrs. M. Bowers, A. W. Copfer and J. A. Phegley, clerks. The office maintains a district service which keeps eight messengers busy.

NEW YORK, WESTERN UNION.

Business on the various circuits reaching summer resorts remains comparatively heavy, for gayety on land and water at Newport, at Mt. Desert, at Long Branch, and other noted places, continues unabated, and attracts its hordes of participants.

Few changes are occuring now-a-days in this office, although the largest telegraph headquarters in the country, affairs moving with much regularity and evenness. This may possibly appear odd to outsiders, not acquainted with the situation as it exists here at present, but the ranks are full, apparently so with permanent holders, and the items hitherto so frequently current relative to resignations and appointments, find no place just now to disturb the tranquility of the operating department.

The Barclay department occupies a very busy section of the operating room on the seventh floor. An enormous amount of business is handled daily by this new printing telegraph system. The development in this method of transmitting telegrams during the past twelve months is nothing short of marvelous.

Miss M. L. Case, manager of the office at 296 Broadway, who has been ill and away in consequence on a leave of absence, has fully recovered her health, and is now able to take charge of her office again.

Miss Gertrude Marsh, daughter of William Marsh, for some time past employed in the commercial news department of this company, died at the residence of her brother-in-law, Peter McMillen, at Saratoga, N. Y., August 21. The remains were brought to New York and buried from the family residence at 879 Herkimer street, Brooklyn, on Sunday, August 23.

Miss Nellie Turner, formerly of this office, was married on August 18, to Mr. Matthew Tuohey, a cotton broker of this city.

Chief C. S. Pike, accompanied by his family, is spending two weeks at Lake Hopatcong, N. J.

Assistant Southern Wire Chief Maxwell Green is passing his vacation amid the Vermont mountains.

Miss Nora Conklin, who has charge of the neo-style, is spending a few weeks in the Catskills.

J. A. Kelly, formerly of this department, and lately located at Newport, R. I., died at that place September 9, of spinal meningitis.

E. T. Burrill, general traffic chief, was pleasantly surprised by a number of his friends on September 8, who reminded him that another milestone in the journey of life had been passed. On the same evening he was again honored with the notification of his election as a delegate to the senatorial convention of the Democratic party in Brooklyn.

OTHER NEW YORK ITEMS.

The annual meeting of the Telegraphers' Mutual Benefit Association will be held at 195 Broadway, New York, on November 18, at four P. M.

Telegraphers' Aid Society Statement.

The Telegraphers' Aid Society of New York makes the following statement for the quarter ended September 6, 1908:

Balance on hand June 6, 1908.....		$20,924.65
Receipts		1,336.50
Total		$22,261.15
Disbursements.		
Sick benefits	$749.67	
Death benefits	100.00	
Expenses	151.18	
		$1,000.85
Balance on hand Sept. 6, 1908....		21,260.30
Total		$22,261.15
Summary.		
Receipts		$1,336.50
Disbursements		1,000.85
Gain for quarter		$335.65
Relief Fund.		
Balance on hand June 6, 1908.....		$3,921.88
Receipts		.....
Disbursements		8.00
Balance on hand Sept. 6, 1908.....		3,913.88
Total		$3,921.88

Balances.			
Aid Society..	$21,260.30	On deposit..	$25,000.68
Relief fund..	3,913.88	Cash on hand	173.50
Total	$25,174.18	Total	$25,174.18

J. H. Driscoll, W. T. Rogers, F. J. Nurnberg, auditors.

The Associated Press.

Addison C. Thomas, superintendent of the central division of The Associated Press, who was in New York recently, has returned to his headquarters in Chicago.

The operators of the New York Bureau had as their guests recently the operators of the Albany and Schenectady offices. The meeting resulted in a baseball game being played, which ended in a victory for the New York men by the score of 13 to 10, after an uphill fight until the sixth inning was reached. Mr. Blake, of the New York office, was umpire. After the game, which took place in Homewood Park, Brooklyn, the visitors were taken to Coney Island, where they were shown the sights and ended up the day's fun by taking a plunge in the surf.

Mr. MacNider Asks Respecting Former Friends.

In a chatty letter received from Stanley MacNider, the well-known old-time telegrapher, who now lives down in Guatemala, Central America, he comments in a reminiscent vein on many of the personages whose faces and biographical sketches appear in Telegraphers of To-day, induced to such reflections by a study of the pages of that volume. He asks respecting a number whom he used to know, among them Benjamin F. Ely, Charles F. Wood, Henry H. Ward and Thomas P. Scully. We were obliged to answer him that the two first named had passed on to join the great majority; that Mr. Ward was engaged successfully in the banking business at East Orange, N. J., and that Mr. Scully, still young, though crowned in white, was living a quiet retired life in Brooklyn, finding his chief source of recreation in frequenting Prospect Park in the summer time and attending the Brooklyn Institute course of lectures, concerts, etc., during the winter. Mr. MacNider recalls the fact that Mr. Wood was superintendent of the Union line, having wires between New York and Boston, at a time, when he (MacNider) was an operator in the office then located at 23 Wall street. Mr. Ward, he says, was the operator mostly in attendance on the through wire at the Boston terminal, while the New York end was usually worked alternately by "Bill" Porter, "Sid" Fairchilds, Henry Hotham and MacNider himself. He remarks that the wire "was good for nine hours' continuous work daily."

Mr. MacNider's recollection of Mr. Ely is that the latter was located at 145 Broadway at the time of the Civil War during a short period when the former received the war news in that office from Washington, evenings. Of Mr. Scully he says: "I have the impression that he was on the Isthmus of Panama during my time." As Mr. Scully has been considerable of a traveler in his time, holding a number of different positions in the Americas to the southward, Mr. MacNider is quite right in his "impression." It is suggested that the right thing for Mr. MacNider to do would be to return to New York and employ a vacation in revisiting old scenes and looking up former friends, and adjusting himself generally to conditions and persons as they exist to-day. Where,

it may be asked, would Mr. MacNider himself fit in? The question is: Would he be more content to let memory with its softening influences satisfy his mind respecting the long ago rather than take the chance of suffering a possible rude shock such as a revisitation to this big city might produce after an absence of some forty years in South America and elsewhere. None the less, Mr. MacNider's friends here would be glad to see him.

It is interesting to note that Mr. MacNider began his telegraph career in Montreal in 1852 as a messenger in the service of the Montreal Telegraph Company, at the time when the now venerable Orrin S. Wood was at the head of that organization, and Harvey P. Dwight, now president of the Great North Western Telegraph Company, being an operator.

What a "Good" Trust Does for Manhood.

There are good trusts and bad trusts. Everybody says so, and everybody believes so. But, according to a recent statement, all the trusts are doing some good. Mr. John J. Carty, the chief engineer of the American Telephone and Telegraph Company, says that "it is a foot race between corporations to see which will get to the college first, and the concern that is a slow starter doesn't get any men at all." He finds that it is no longer a question whether a college graduate can get a job or not, and that it is absolutely impossible for some corporations to get the requisite number of men to learn their business, beginning at a salary of fifteen dollars a week. Mr. Carty adds: "It is the trusts that have brought this condition about, and put a premium on education. By a simple reactive process they have created schools, particularly technical education, within every boy's reach. The progress of industry and wealth has been so great that it has lifted the whole mass." The college graduates that are finding places with the great trusts, Mr. Carty says, are not aristocrats, but the sons of carpenters, machinists, small tradesmen, and thrifty workmen. They are not dudes or snobs, but they know what real work means, are amenable to discipline, obedient and responsible. In the old days, when our industries were private affairs in the hands of single owners, the latter would find places in the works for their relatives; but now, according to Mr. Carty, "there is no room for ornaments nor for relatives, unless they work their passage and a little better," for the great corporations are conducted by capitalists who seek to produce and who have no sentiment in their business. This is a view of the trust question that may not have occurred to the general public, and it is worthy of consideration.—Leslie's Weekly.

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Many expert code operators have examined the revised edition of this code, and all unite in pronouncing it perfect. Mr. George W. Conkling, who has won the championship for sending code in many tournaments, says:

"I have examined thoroughly the additions contained in the latest edition of Phillips Code and most heartily approve of them. Every operator who is familiar with the code should find no difficulty in mastering the new contractions as they 'fit in' smoothly and I think the ground has been entirely covered."

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Printing Telegraph Systems, Modern High Speed, J. C. Barclay ..... Nov. 1, 1904
Printing Telegraph Systems, Story of ..... Jan. 1, 1903
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Typewriting Telegraphs, L. S. Wells ..... Aug. 1, 1904
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What Constitutes a First-Class Operator ..... Oct. 1, 1904
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When is a Storage Battery Fully Charged..... Aug. 16, 1904
Wind Pressure on Telegraph Structures, F. W. Jones.... Dec. 16, 1903
Wire Tables—How to Remember Them, C. F. Scott..... Apl. 16, 1906
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Braun's New Method of Directing Wireless, A. Fred'k Collins ..... Apl. 1, 1906
Churcher Rectifier, J. P. McCabe ..... May 1, 1906
Electrolytic Wireless Receiver, D. L. Beardsley..... July 16, 1906
Fire Alarm Telegraphs, History of ..... Aug. 16, 1906
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Postal Telegraphy, Congressman Smith on..... Aug. 16, 1906
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Telegraph Tournament, International, at Boston, May 1-16, June 16, July 16, 1906
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Train Order Rules, Chas. Selden ..... Aug. 1, 1906
Wire, Hard Drawn Copper, History of, Thos. B. Doolittle, ... Jan. 1-16, 1906
Wheatstone Bridge, F. W. Jones ..... Nov. 16, 1906
Wright Keyboard Transmitter and Printer, R. Hitchcock.. Apl. 1, 1906

Directory of Annual Meetings.

Association of Railway Telegraph Superintendents meets at Detroit, Mich., June 23, 24, 25, 1909.

Commercial Cable Company meets the first Monday in March, at New York.

Gold and Stock Life Insurance Association meets the third Monday in January, at New York.

Great North Western Telegraph Company meets the fourth Thursday in September, at Toronto, Ont.

International Association of Municipal Electricians meets at Atlantic City, 1909, at a date to be named later.

Old Time Telegraphers' and Historical Association, will meet at Niagara Falls, N. Y., September 16, 17, 18.

Postal Telegraph-Cable Company meets the fourth Tuesday in February, at New York.

Telegraphers' Mutual Benefit Association meets the third Wednesday in November, at New York.

Train Despatchers Association meets in 1909 at Columbus, O., at a date to be determined upon.

The stockholders of the Western Union Telegraph Company meet the second Wednesday in October, at New York; election of officers occurs on the third Wednesday in October.