

PRACTICAL MECHANICS

PUBLISHED MONTHLY

★

VOLUME 11

October, 1943, to September 1944

(Nos. 121 to 132)

★

EDITOR :

F. J. CAMM

Editor of "Practical Engineering," "Practical Wireless," Etc., Etc.

Author of "Screw Thread Manual," "Wireless Transmission," "Radio Training Manual," "Newnes' Engineer's Manual," "Workshop Calculations, Tables and Formulæ," "Practical Mechanics Handbook," "Radio Engineer's Vest Pocket Book," "Diesel Vehicles: Operation, Maintenance and Repair," "Motor Car Principles and Practice," "Practical Wireless Circuits," "Dictionary of Metals and Alloys," "Practical Wireless Encyclopædia," "The Superhet Manual," "Practical Wireless Service Manual," "Newnes' Short-wave Manual," "Watches: Adjustment and Repair," "Practical Motorist's Encyclopædia," "Engineer's Vest Pocket Book," "Everyman's Wireless Book," "Newnes' Television Manual," "Wireless Coils, Chokes and Transformers," "Wire and Wire Gauges," "Mathematical Tables," "Screw Thread Tables," "Gears and Gear Cutting," "Refresher Course in Mathematics," "The Slide Rule Manual," "Valve Data Book," "Mastering Morse," Etc., Etc.

LONDON :

GEORGE NEWNES, LTD., TOWER HOUSE, SOUTHAMPTON STREET,
STRAND, W.C.2

INDEX

A

Accumulators, Varley motor-cycle, 103
 Acids, ascertaining strength of, 321
 Acetyl chloride, preparing, 213
 Acetylene gas, 176
 Advertisement tubes, 24
 Aero-engine fuels, 193
 Aeroplanes, to heat, 351
 Air and fuel ratio, 177
 Air compressors, design of, 54
 Aircraft engines, types of, 270
 —, first stainless steel, 118
 — flying controls, 188
 —, hand-powered, 6
 —, lift-increasing devices, 155
 — on active service, 13, 85, 119, 204, 381, 412
 —, pilotless, 366, 401
 —, possibilities of heavier armament for, 274
 —, possibilities of multi-engines, 114
 — undercarriages, 46
 —, unorthodox, 4
 Air-icing problem, solving, 118
 Air liners, ocean, 118
 Airscrews, 6
 —, contra-rotating, 12
 Airship development, 116
 —, use of, in post-war years, 116
 Alarm clock, electric, 194
 —, repairing, 5, 30, 60
 Alkali trade, advent of the, 195
 Alkaloids, about the, 276
 Allison, 243
 Alloys, extracting silver and gold from, 249
 Ammeter readings, 355
 Ammonia: chemical action on metals, 139
 "Anglo-Helvitium," 285
 Animal studies, photographing, 169
 Anti-gas filter for shelter, 394
 Anti-vibration seat, 24
 Aquarium, heating small, 211
 Arc welding set, 393
 Archer, Frederick Scott, 383

Armour, modern, 24
 Armstrong, Sir William, 16
 Artillery through the ages, 14
 Asbestos cement, 212
 Aske, Henry, 98
 Atlas, Circular, 425
 Atmosphere, electrical polarity of, 105
 Attic garden, 168
 Automatic cigarette machine, 11
 Auto-pilot, U.S., 88
 Aviation, the future of, 329
 —, the world of, 12

B

Bags, glass cloth, 198
 Bakeland, Dr., 383
 Balaclava, anti-gas, 131
 Balloon "scaffolding," 118
 Banks and house financing, 8
 Battery plates and electrolyte, 249
 Bearings and bushings, 203
 Bell Airacobra, 119
 Bench grinder and circular saw, combined, 269
 Blanket, electric, 430
 Bomb and shell cases, 24
 Bombards, 14
 Bombing through Cloud, 165
 Bomford, Colonel, 14
 Books received, 58, 194, 263, 307
 Boomerang fighter 'plane, 88
 Boyle, Robert, 126
 Bread cutter, 236
 Brewster, Sir David, 162
 Bricks, ideal, 198
 Brickwork, "floriation" in, 393
 Briquettes, making coal, 69
 Bristol Beaufighter, 85
 — "Hercules" engine, 389
 Brugnatelli, Professor, 65
 Brush, durable hearth, 425
 Building societies and house financing, 9
 Buses, producer-gas, 90
 Butane and propane, use of, in motor cars, 175

C

Cabentou, Joseph, 277
 Calcium carbide, 430
 Calendar, a perpetual, 130
 "Calor" gas, running cars on, 138, 175
 Camera lucida, 43
 —, more uses for your, 244
 —, obscure, 43
 Canard, the, 5
 Cannon, record of invention, 14
 Car-radio, conversion to mains, 317
 — starter as A.C. motor, 140, 356
 —, the post-war, 39
 Carbide tipped tools, 18
 Cargo ships, building our new, 23
 Carlisle, Sir Anthony, 65
 Casein glue, 320
 Casts of footprints, 357
 Catapulta, the, 14
 Cayley, Sir George, 283
 Celluloid solution, 68
 — varnish, 394
 Cement, slow-setting, 69
 Cerium, 140
 Chalks, coloured, 69
 Chamberlain, R. J., A two-way cycle lamp, 157
 Charging plant, water-driven, 225
 Cheadle, Marcus R., divers jobs, 52
 Chemical discovery, the story of, 17, 64, 126, 166, 195, 242, 276, 382
 Chemistry course, 211
 Chessmen, cheap, 241
 Children want after the war, what, 298
 Christmas subjects, photographing, 102
 Cigarette machine, automatic, 11
 Cine projector, building a home, 40
 Circular saw and bench grinder combined, 269
 Clock, an improved striking mechanism, 164
 —, battery-operated master, 68
 —, building a synchronous electric, 184, 230
 —, electric alarm, 194
 —, —, conversion, 209
 — mechanism, a simplified, 27
 —, "P.M." battery, 250
 —, talking, 351

Clockmaking, precision, 341, 387, (correction, 415), 413
 "Clocking-in" cards, 425
 Codeine, 68
 Columbiad, the, 14
 Combustion, the chemistry of, 126
 Compass bearings, "picture" signals of, 91
 Concrete "mixes," 285
 Condensation in shelter, 320
 Condenser capacity for magnets, 357
 Confractor, the, 122
 Consolidated catalina, the, 13
 Converter details, 250
 Converting car starter to A.C. motor, 105
 Copper plating, 211
 ——— on steel, 395
 ——— solution, 139
 Coventry in the making, the new, 379
 Craft, novel sea-going, 80
 Cream substitute, 63
 Crookes, Sir William, 18
 Cultivators for farms, 298
 Curie, Madame, 246
 Cushion comfort, 168
 Cyanides, 357
 Cycle crank attachment, 16, 210
 ——— fork, new, 345
 ———, front wheel of your, 56
 ——— gear, an epicyclic, 278
 ——— lamp, a two-way, 157
 ——— lighting, acetylene gas, 212
 ——— unit, 209
 Cyclogiro, the, 4

D

Daguerre, Louis, 382
 Daguerreotype, restoring, 250
 Damp detectors, 211
 da Vinci, Leonardo, 126
 Davy, Sir Humphry, 65, 128
 Day, D. J. H., aero-engine fuels, 193
 D.C. supply, 177
 Deacon, Henry, 196
 Dead-centres, about, 247
 de la Rive, 65
 Delivery, long range, 12
 Demagnetiser for small tools, 33
 Demarcay, E., 17
 Designs and patents, 104
 Detonation, 14
 Diesel engine, 177
 ——— or petrol? 137
 Dish washer, 241
 Distress signal, 131
 Divers jobs, 52
 ———, work done by naval deep sea, 52
 Doll's furniture, 351
 ——— heads, making, 177
 ———, making, 249
 Dowling, C. C., the production of gold leaf, 306

Drawing pins superseded, 345
 Drill, converting a D.C. electric, 356
 Drill, rewinding electric, 33
 Driving arrangement for use in clocks, 27
 Dry rot, the danger of, 25
 ———, treatment of, 394
 "Ducks" 8th Army, get through, 378
 Duralumin, hardening, 68
 Dustbins, long life for, 81
 Dust collector, improved, 85
 Dynamo markings, 177
 ———, output of shunt wound, 177
 ——— polarity, 33
 ———, slow-speed, 69, 285
 ———, winding magneto, 320

E

Earth's heat, 32
 Ecclesiastical interiors, photographing, 51
 Education, post-war technical, 183
 Edwards, 383
 Ehrlich, Paul, 120
 Eighth Army "ducks" get through, 378
 Electric gong, 285
 ——— heating for plant bed, 393
 ——— light plant, 394
 ——— motor for model loco, 32
 ——— motors and dynamos, by H. Sanders, 59, 92
 ——— polishing, 69
 ——— table lamp, 421
 ——— welding, 430
 Electricity and re-planning, 3
 ———, chemistry of, 64
 ———, rationed, 133
 ——— supply and distribution, 221
 Electrolyte for condensers, 176
 Electrolysis, 65
 Electron microscope, 33, 138
 Element holders for electric fires, 139
 Elements, tracing and missing, 242
 Emery wheels, making, 177
 Engine, new Rolls-Royce fighter, 62
 Engines, how many? By Nemo, 114
 English or metric? 257
 Epicyclic cycle gear, 278
 Epidiascope or Episcopes? 357
 Erden resonators, 321
 Escapement of alarm clocks, principles of the, 30, 60
 Etchings, fillings for, 285
 Evans, Oliver, 205
 Experimental engineering, 365

F

Fair comment, 3, 39, 77, 111, 147, 183, 221, 257, 293, 329, 365, 401
 Fairey Barracuda, 380

Faraday, Michael, 65
 Faure, Camille, 65
 Feathers, dyeing, 68
 Fencing, electrified, 320, 428
 Fighter-bomber, new mosquito, 118
 ——— 'plane, jet-propelled, 165
 Fighter, new U.S., 12
 Fighting eight miles up, 236
 Figures, "developing" erased metal, 10
 Film negative, dissolving, 138
 ——— sound tracks, circuits for reproducing, 19
 Films, the structure of thin, 315
 Financing, house, 8
 Fire and flame, underlying features of, 126
 ———, electric, 33
 ———, smokeless, 165
 Fireproofing cotton fabric, 32
 ——— solution, 320
 Fires and boilers, domestic, 103
 Fixing pencil drawings, 32
 Fizeau, M., 382
 "Flash" paper, 140
 Flash powder, igniting, 32
 Fleming, Professor Alexander, 121
 Flettner rotor, 6
 Flexible bearings and bushings, 203
 Floating runway, 131
 "Floriation" in brickwork, 393
 Flying boat, the consolidated Catalina, 13
 ———, 67-ton, 62
 ——— Fortress, improved, 165
 ——— high, 12
 ——— power station, 88
 Foaming agent, 286
 Focke-Wulf, F. W., 190, 412
 Footwear, conductive, 24
 Forsyth, Alexander, 14
 Freezing mixtures, 212
 Frost, keeping out the, 170
 ———, to frustrate, 173
 ——— predictor, 197
 Fuel, new process for making aviation, 88
 ———, Aero-engine, 193
 Fur, to clean, 97
 Furnace, new blast, 165

G

Galvani, Luigi, 64
 Galvanometer, a moving-coil, 406
 Gas lighter, automatic, 282
 Gay-Lussac, 277
 Gelatine for mould making, 104
 Gems, artificial, 236
 Generator, model, 429
 ———, Inductor-type, 33
 Gesso powder, 239
 "Gigant" transport 'plane, 135
 Glass bending, 68
 ——— blowing, modern, 20

Glass bottles, testing, 16
 —, polaroid, 32
 Glider, the "Horsa," 7
 Gloves, electrically heated, 104, 175
 Glucose from potatoes, making, 105
 Glyceryl mono stearate, 393
 Goddard, 382
 Gold leaf, the production of, 306
 Gossage, William, 195
 Graham, George, 98
 Graphite, moulding, 429
 Greenwich Observatory to move, 197
 Grinder made from cycle wheel hub, 84
 Grinding and crushing machinery, 202
 Gun firer, pneumatic, 241
 — loader, 97
 Guns, Navy's big, 404

H

Hair, extracting oil from, 249
 Half-inch or three-o-three ? 274
 Handle for cups, 131
 Handley Page Halifax, 204
 Hand loom, a miniature, 238, 281
 Hand-powered aircraft, 6,
 Hardwoods, 61
 Harmonograph, a pendulum, 55, 248
 Hart, G. W., about dead-centres, 247
 Heater, electric, for brooder, 357
 —, electric water, 320
 — elements, electrical, 250
 Heating, electric, for plant bed, 393
 — elements, 105
 —, radio-frequency, 299
 Heels, repairing rubber, 425
 Helmet attachment, 131
 Herschel, Sir, John, 382
 Home cine projector, building, 40
 Hooke, Dr. Robert, 98, 126
 Hopkins, 17
 Hopkins, Professor Smith, 243
 Horology, a pioneer of, 418
 "Horsa" glider, 7
 Houses of the future, engineer-built, 8, 48,
 86, 123, 159, 235, 264, 302, 376, 416
 Howard, Luke, 277
 Howitzer, the, 14
 How many engines ? 114
 Hulubei, H., 243
 Human torpedo and the midget submarine,
 294
 Humber armoured car, 88
 Hydrogen gas, 177

I

I.M.E. exams in prisoner-of-war camps, 118
 Incendiary materials, 351
 Induction motor, rewinding, 104
 —, squirrel-cage, 173

Inn names, some notes about, 305
 Interiors, ecclesiastical, photographing, 51
 Invasion ships off Normandy coast, 332
 Inventions of interest, 63, 97, 131, 168,
 198, 241, 282, 351, 425
 Inventors, our busy, 24
 —, wanted—a square deal for, 111
 Invisible ink, 177
 Iodine liberator, 282
 Iron, colloidal suspension of, 393
 — ware, enamelling, 285
 Items of interest, 286, 298, 345, 424
 It's a small world ! by "Motilus," 28

J

Jet induction augmentor, 339
 — propelled cars ? 365
 — propulsion, 147
 —, the development of, 222
 Joystick button, 282

K

Kaleidoscope, the creator of the, 162
 Kettle, removing fur in a, 356
 Klapproth, Martin Henry, 17
 Krupp, Friedrich, 15

L

Lacquer for domestic utensils, 320
 — paint, 32
 —, to clean, 286
 Lamp, an electric table, 421
 Lathe, dividing apparatus for small, 32
 — treadle-wheel, 231
 Launch, steel welded, 165
 Lavoisier, Antoine, 127
 Leaf skeletonising, 212
 Leaves, dyeing, 321
 Leblanc, Nicholas, 195
 Leclanché, 65
 Lecoq de Boisbaudran, 17, 242
 Leigh-Smith, Mrs. Alice, 246
 Letters from readers, 138, 175, 209, 248,
 281, 355, 428
 Lever, extensible hand, 351
 Lifebuoy de luxe, 168
 Life-saving at sea, modern developments
 in, 368, 422
 Lister, Lord, 120
 Little ships, men of the, 424
 Loco, failure of model electric, 321
 "Long John Silver," relics of, 207
 Luppö-Cramer, Dr., 384

M

Machinery, safety devices for, 262
 Maddox, Richard Leach Maddox, 383

Magazine for 'planes, 198
 Magnesium from sea water, 32
 Magnetic coils, 140
 Map, earth and sky, 425
 —, magnetised, 97
 "Mars" maiden trip, 197
 Masters of mechanics: Sir Benjamin
 Thompson—Count Rumford, 57, 98,
 134, 162, 205, 283, 339, 418
 Maxim, Sir Hiram, 134
 May, E. R. W., 148
 Mayow, John, 126
 Mechanics, masters of, 57, 98, 134, 162,
 205, 283, 339, 418
 Meister, Lucius and Bruning, 384
 Mendeléeff, Dmitrii, 242, 246
 Metallurgy, books on, 393
 Metals, radio detection of, 429
 —, rare earth, 17
 Methylated spirit, 68
 Microfilm saves paper, 62
 Miles M28, 12
 Mill, model of, 28
 Minder, Dr. Walter, 246
 Minerals, testing, for precious metals, 394
 Mitchell, Margaret. What children want
 after the war, 298
 Model and Experimental Engineers, Society
 of, 365
 Models, the world of, 28, 66, 100, 132, 172,
 245, 279, 318, 352, 426
 Mond, Ludwig, 197
 Montreal in 11¼ hours, from, 232
 Morse instructor, 54
 Mortars, 14
 Mosander, C. G., 17
 Moseley, H. C. J., 18, 242
 Mosquito aircraft made in Australia, 424
 Motor-cars and aircraft, instruments for,
 258, 308, 355, 390, 407
 Motor, converting a universal, 249
 —, making a 10-watt electric, 78
 Moving-coil galvanometer, 406
 "Moving pictures," 63
 Murphy, 243
 Muspratt, James, 195
 Myford parting-off attachment, 16
 Mystery explained, a, 174, 281

N

Nail pickers, magnetic, 165
 Name, what's in a ? 305
 Narcotic drugs, 176
 Naval bombardment, by J. A. Spar, 402
 Navy's big guns, 404
 Negatives, better prints from your, 192
 Nicholson, William, 65
 Nickel-iron cells, 356
 —plating, 68
 Niemann, 277

Niepee, St. Victor, 382
 Nilson, 242
 Nitrogen iodide, 139
 Nitrous oxide, 69
 Noddack, 243
 Normandy coast, invasion ships off, 332
 Notatin, 122
 Notes and News, 81

O

Oil and petrol from coal, 293
 —, cleaning used, 140
 —, emulsifying, 286
 — from hair, extracting, 249
 —, geophysical methods of finding, 94
 Orange peel, 176
 Orchid spores, 394
 Ordnance, record of invention, 14
 Orleans, Duke of, 195
 Ornithopters, 4

P

Paints, weathering properties of, 356
 Palladised barium sulphate, 177
 Pantagraph, making a, 240
 Paper-making process, 198
 Papier-mâché, 249
 Parkes, Alexander, 65
 Parting-off attachment, Myford, 16
 Pascoe, A. S., refrigeration applications, 273
 Paste, making, 105
 Pasteur, Louis, 120
 Patents and designs, 104
 Pedal switch, 269
 Pelletier, Peter Joseph, 276, 277
 Pelton wheel and dynamo, 176
 Pencil drawings, fixing, 32
 Pendulum design, 5
 Penicillin, the new germ killer, 120
 "Peregrine," the front wheel of your cycle, 56
 Perkin, William, 276
 Petrol and oil from coal, 293
 — tanks for fighter 'planes, 282
 Phase-shifting transformer, 430
 Phono-fiddle, making a, 44
 Photo-cell base connections, 154
 Photographic printing paper, 69
 Photography, a brief history of, 354
 —, chemical basis of, 382
 —, making a success of your, 22, 51, 102, 136, 169, 192, 244
 'Plane, the "Gigant" transport, 135
 Plant hormones, 166
 Planté, Gaston, 65
 Plants, chemical life of, 176
 Plaster casts, 32
 —, elastic sticking, 282
 — of Paris moulds, 320

Plastics, books on, 286
 — from acetylene, 385
 Plating formulæ, 140
 Plywood, to strengthen, 241
 P.O. bridge details, 430
 Pocket, safety, 241
 Poisons from plants, 276
 Polarity indicator, 393
 Polaroid glass, 32
 Polishing, electrical, 69
 — powder, 286
 Polish, shoe and furniture, 177
 —, wax, 286
 Pope, Sir William, 384
 Portraits and groups, photographing, 22
 Pottery making, 212
 Power systems, thermionic valves in, 300
 Precision clockmaking, 341, 387, 415, 413
 Priestley, Rev. Joseph, 127
 Printer-enlarger, a, 148, 241
 Prints, better, from your negatives, 192
 —, removing stains from, 105
 Probes and problems, 128 (solutions, 135); 158 (solutions, 173); 201 (solutions 206); 234 (solutions, 246); 261 (letter); 309 (solutions, 321); 326 (solutions, 357)
 Proctor IV, 233
 Producer-gas buses, 90
 Pterodactyl, the, 5
 Pump, electrically driven, 176
 Pyrophonic iron powder, 251

Q

Queries and enquiries, 32, 68, 104, 139, 176, 211, 249, 285, 320, 356, 393, 429

R

Racks, accessible, 282
 R.A.F. make a runway, 232
 Railway, cut-out for model, 286
 — electrically driven model, 138
 Rake and hoe combined, 345
 Rare earth models, 17
 Reaction motor propellant feed, 420
 Reade, Rev. J. B., 382
 Refrigeration applications, 273
 Refrigerator, insulating medium for, 139
 Repairing alarm clocks, 30, 60
 Repair van, mobile, 171
 Republic P47 Thunderbolt, 381
 Resistance, regulating, 286
 Rifle with periscope, 63
 Rifling cannon and small arms, 14
 Roads to be, 332
 Rocket propulsion, 330, 374, 410
 — target, 197
 Rodman, General, 14
 Rolla, Professor, 243
 Rolling over the sea, 80

Roofing material from rags, 118
 Rope, buoyant, 131
 Ropes, to control, 282
 Rotary converter, 33
 Rotation of a motor, direction of, 429
 Rubber, dissolving, 176
 — from wild trees, 118
 — latex, 139
 — plant, synthetic, 62
 —, softening, 105
 — stamps, making, 343
 Rumford, Count (Sir Benjamin Thompson), 57
 Running 50-volt motor on A.C., 356
 Runway, R.A.F. make a, 232
 Rustic garden woodwork, 344

S

Safety devices for machinery, 232
 Salvage in wartime, 346
 Sanders, H., electric motors and dynamos 59, 92
 Save life at sea, to, 97
 Saving life at sea, 165
 Scheele, Carl William, 276
 Science notes of the month, 62, 88, 118, 165, 197
 Scientific research in post-war Britain, 77
 Screw thread cutting, 248
 "Sealing liquids," 212
 Seasoning, timber, 61, 175
 Seat, anti-vibration, 24
 Sea-water, chemicals from, 211
 Seaweed extraction, 199
 Sertürner, Friedrich Wilhelm, 276
 Shave, a close, 425
 Shaw, Joshua, 14
 Shelter, condensation in, 320
 Sheppard, S. E., 384
 Ships, building our new cargo, 23
 —, steering gear for, 93
 Shoe-repairing tip, a, 97
 Short-Mayo composite, 6
 Shrapnel, General, 14
 Silver and chrome plating, 394
 — and gold from alloys, extracting, 249
 — plating, 211
 Single-phasing, protection against, 393
 Skins, curing rabbit, 68, 140
 Small wind-power plants, 112, 153, 186, 228, 267
 Smoke bomb formulæ, 429
 Smokeless fire, 165
 Soap, making liquid, 104
 Softwoods, 61
 Soldering iron, electric, 249
 — lead, 177
 Solenoid windings, 357
 Soles, good, 168
 Solvay, Ernest, 196

Sound-box pick-up, 355
 — control, recent developments in, by Donald W. Aldous, 335
 — on-film amplifier designs, by Donald W. Aldous, 19, 154
 Space rockets, 139, 210, 248
 Speech, transmitting by light ray, 197
 Speeds for turning, 139
 Spitfire Mark XII, 314
 Stable equipment, safety, 351
 "Startamotor," re-winding a, 429
 Steel skeleton framed walls, 8
 Steering gear for ships, 93
 Stephenson, George, 128
 Stereoscopic and colour television, 401
 Striking mechanism, an improved, 164
 Submarine lifeboat, 63
 —, midget, and the human torpedo, 294
 Sun lamp, 33
 Sunlight recording instruments, 357, 428.
 Sun-ray lamp, carbon-arc, 250
 Sunshine recorder, 357, 428

T

Tacke, 243
 Tailors, standard pattern garments, 63
 Tailstock, improved lathe, 428
 Talbot, W. H. Fox, 382
 Talkie projector, 176
 Tandem, why it can be most easily ridden uphill by solo rider, 174
 Tank buster, 12
 "Tank busting!" 226
 Taxation, effect of, on car design, 365
 Taylorcraft Auster 3 plane, 62
 Television aids navigation at sea, 91
 Thermionic valves in power systems, 300
 Thermostat, Toluene, 69
 Thompson, Sir Benjamin (Count Rumford), 57
 Timber selection chart, 61
 Tobacco, substitute for, 320

Tompion, Thomas, 98
 Torch, twin-light, 81
 Torpedo, magnetically guided, 62
 Tractor, jungle-crashing, 165
 Transformer for spot welding, 393
 —s, principles and design of, 260, 313, 337, 372
 Transport 'plane, Britain's new, 197
 Treadle-wheel lathe, 231
 Trevithick, Richard, 205
 Trimethylene, 321
 Trivet attachment, 63
 Typhoon fighter-bomber, 392
 Typhoons in the making, 272, 409

U

Unloading, easy, 241
 Unorthodox aircraft, by T. E. G. Bowden, 4
 Urbain, Georges, 17
 Urea-formaldehyde cement, 394

V

Vacuum, a perfect, 32
 — cleaner maintenance, 129
 Valentine, H. H., cycle crank attachment, 16
 Varnish, semi-matt, 212
 Veitch, James, 162
 Ventilators for model launch, making, 211
 Victory ships, fast, 197
 — —, new, 118
 Villiers auto-cycle unit, 333
 Vogel, the riches of the, 310
 "Volkswagen," the, 150, 190
 Volta, Alexandre, 64
 Voltage of circuit, reducing, 33
 Volta's pile, 64
 Von Welsbäch, Dr. Carl Auer, 17, 18, 242

W

Wanted—a square deal for inventors, 111
 Warn, to, and to wipe, 282
 Warring, R. H., "tank-busting!" 226.
 Waste utilised, 351
 Watch de-magnetiser, 237, 355
 Water-driven charging plant, 225
 — power installations, 82
 — softening material, 211
 Watt, James, 205
 Wave winding for rotors, 357
 War polish, 286
 Welding, electric, 430
 What's in a name? by W. J. Mill, 305
 Wheatstone, Sir Charles, 163
 Wheels, non-slip and spin, 298
 Whitworth, Sir Joseph, 16
 Wind and water power installations, 82
 Windmill pump, 428
 Windmills, 82
 Wind power plants, small, 112, 153, 186, 228, 267
 — Tunnel, 700 m.p.h., 12
 — Tunnels, by T. E. G. Bowden, 89
 Wings, telescopic, 4
 Winter photography, 136
 Wood, preserving worm-eaten, 139
 —, product from waste, 69
 —, selection, seasoning and preservation, 61
 Woodwork, rustic garden, 344
 Woolbridge, Dr. W. E., 14
 World of aviation, the, 12
 Wortley, 383
 Wratten and Wainwright, 383
 Wright, John, 65

Y

Yntema, 17, 243

CYCLIST SUPPLEMENT

A

Accidents, 11, 19, 43, 45, 59, 67, 91, 92
 Accommodation, seeking, 52
 Advertisements, 15, 21
 Advice, cycling, 18
 Angler-cyclist, 37
 Another raw deal? 73

Around the wheelworld, 3, 11, 19, 27, 35, 43, 51, 58, 67, 75, 82, 91
 Asphalt roads in wartime, 59

B

Bad riding, 18, 53
 Baker, Noel, M.P., 11, 19, 21, 89

Bale, Major Frank, O.B.E., 3
 Bank Holiday sights, 5
 Bartlett's Bicycle Book, 15, 19, 35, 91
 Battery Lamps, 39, 56
 Beharel, Sir George, 3, 35
 Bells, 59
 Bentley, A. H., 3
 Bowden, Sir Harold, 3

Brabazon of Tara, Lord, 3, 11, 19, 27
 Bradley, A. Percy, 3
 Bressey, Sir Charles, 19, 27
 Bricknell Gear, 82
 British Bicycle Manufacturers' Union, 27
 — League of Racing Cyclists, 35, 82
 Broom, Warwickshire, 72

C

Camm, F. J., 3
 — Sydney, 27
 Care of cycles, 4, 28
 Carrier, improved bag, 58
 Catering, 23
 Centenary Club, 68
 Chain wheels, tooth form cycle, 67
 Child cyclists, 57
 Club notes, 12, 18, 28, 34, 42, 50, 64, 74
 Comments of the month, 1, 9, 17, 25, 33, 41, 49, 57, 65, 73, 81, 89
 "Conkers," 29
 Cornwall, 39
 Cotswolds in spring, 45
 County characteristics, 5
 — dialects, 55
 — towns, 87
 "Craving for speed," 75
 Cycle and Motor Trades Benevolent Fund, 79
 — cleanliness, 55
 Cycling 100,000 miles, 91
 Cyclist at 83, 29
 — what is a real, 43, 51
 Cyclorama, 7, 15, 21, 29, 37, 45, 55, 63, 71, 79, 87, 95

D

Dairy Farm in London, 29
 "Danger," 39
 Dart board, lure of the, 45
 Dartmoor, 31
 Daymond, J. D., 3
 Dealer, oldest cycle, 87
 December, 21, 37
 "De-mobbed," training scheme for, 67
 Derbyshire, glories of, 29
 Design, 92
 Dog Problem, 72
 Donegall, Marquess of, 3
 Don't Hurry, 18
 Dover, 23, 31
 Dried-up rivers, 88
 Drought, 87
 "Drumming-up," 4
 "Dunlop Book," 7
 Dunlop rally, 37

E

Ealing T.T. course, 83
 Electoral blackmail, 49, 75

Ely, the Isle of, 47
 Enemies of cycling, 31

F

Farne Islands, 56
 Fishing, 15
 Folding bicycle, 84, 91
 Fool questions, 13
 Fountain C.C. 1944 officials, 43
 Four-speed gear, 28
 Future, what of the, 68

G

Glass, broken, on the road, 18, 21, 27, 35
 Good day, a, 18
 "Good old days," 7
 Goodwin, Herbert, 35
 Grey, C. G., 3, 11, 27
 Growth of cycling, 4

H

Haggis or spam? 37
 Halifax R.C.C., 58
 Harvest time, 20
 Herne Hill, August meeting, 83
 — Track, 58
 Highway, use of the, 35
 Hill thrills, 31
 Hogg, Leading-Aircraftman R. C., 27
 Holiday philosophy, 4
 Holidays at home, 5, 12, 15, 44, 72
 Holyhead road, 23
 Howard, P. W., special message to cyclists, 3

I

Iliff, Lord, 3
 Improvement of cycle design, 44
 Inn signs and names, 79, 87

J

James, W. G., 3
 Jarrott, Lieut.-Col. Charles, O.B.E., 3, 43

K

Keep fit, 28
 Kenilworth, 3
 Kent, the charm of, 15
 Kenward, H. L., 35

L

Lakeside roads, 88
 "Learning" to ride, 79
 Lighting, improved forward, 39
 — post-war street, 17
 — problem, cycle, 12
 Literary chatter, 45
 — landscapes, 79
 Lodore Falls, 47
 London Octopus, 64
 Lonsdale, the late Lord, 87
 Loughborough, Col. T. W., 3
 Low, Professor A. M., 3

M

Macintosh, Charles, 15
 Map, lure of the, 96
 Massed-start cycle races, 1, 9, 17, 33
 — N.C.U. Organiser, 67
 Masters, J. A., 3
 My point of view, 5, 13, 23, 31, 39, 47, 56, 64, 72, 80, 88, 96

N

National championships, 59, 67, 83
 Neilson-Terry, Julia, 75
 Norwood Paragon officials, 51
 Notes of a highwayman, 5, 13, 23, 31, 39, 47, 56, 64, 72, 80, 88, 96
 Nuffield, Lord, 87

O

O'Gorman, Lieut.-Col. Mervyn, 3, 11

P

Paid advocates, the, by F. J. C., 89
 Paragrams, 2, 10, 20, 26, 34, 42, 50, 59, 66, 74, 83, 90
 Pedals, Wooden, 7, 95
 Pen names, 75
 Pharos, the, Dover, 23
 Pickard, Lieut.-Col. J. A. A., D.S.O., 3
 Pickwick Bicycle Club, 87
 Post-war road policy, 65
 — surplus and its disposal, 57
 "Prettiest" village, the, 21
 Prices and values, 4
 Pumps, 12, 49, 79
 Punctures, 92

R

Raleigh Half-Century Club, 51
 Records, R.R.A., 25, 73

Registration of bicycles, 44
 Retiring, 21
 Riding with an object, 80
 Roadbuilding, early, 96
 Roadfarers' Club, 3, 11, 19, 21, 27, 75, 89
 Road Records Association, 25, 73
 —Time Trials Council, 43, 58, 91
 Roads in built-up areas, design and layout of, 81
 "Robin Hood" cycles, 29
 Room for cycles in new houses, 9
 Rootes, Sir William, 41
 Rubber after the war, 65
 Ryan, Harry, 87

S

Sartorial sense, 84
 Scotland, cycle tour, 4
 Scotto, "Bert," 51
 Shakespeare villages, 72
 Sit correctly, start to, 18
 Slade, G. O., K.C., 27
 Small man, the, 7
 Smoking, 92

Southern Road Records Association, 51
 Spares and Care, 28, 36
 Speed of cyclists, 3
 Stay-at-home holidays, 5
 Suffolk, 95
 Sutton Coldfield's Park, 79

T

Thieves, cycle, 7, 13, 27, 35, 37, 44
 Thomas, Sir Miles, 58
 Three tailors of Tooley Street, 25
 Timeworn cyclists, fellowship of, 91
 Touring, some figures, 13
 —straight or star-shaped? 13
 —to-day, 92
 Transport, Passenger and Goods, 41
 Travel, roundabout, 23
 Tricycles, children's, 29
 Tubes, synthetic rubber, 35
 Typographical error, that, 19
 Tyre economy, 15, 21, 27, 29, 37, 87
 —wartime cycle, 25, 56
 Tyres, synthetic rubber, 45, 55

U

U.S. soldiers awheel, 55

W

Wales, cycle tours, 5, 7, 13, 36, 76, 88
 Wanted—a plan, by F. J. C., 1
 Water and no water, 88
 Watling, Major H. R., O.B.E., J.P., 3
 —Street, 23
 Wayland's smithy, 39
 Wayside thoughts, 4, 12, 18, 28, 36, 44
 52, 60, 68, 76, 84, 92
 Wells, H. G., 27, 75
 West London Road Club, 27
 Wheelers, 43rd, annual, 35
 White stick symbol, 9
 Wilson, A. J., "Faed," 79
 Winchester, 56
 Winter beauty, 29
 —riding, 28
 Women's Land Army, 7
 Worcestershire, 88