

NEW BOOKS, ETC.

ECONOMIC GEOLOGY OF THE UNITED STATES. By Heinrich Ries, A.M., Ph.D. New York: The Macmillan Company, Ltd., 1905. 12mo.; pp. 435. Price, \$4.60 net.

The present work is designed as a text book for use in colleges. In the preparation of the manuscript, all available sources of information have been freely drawn upon. The mode of arrangement is markedly different from that found in other books on the same subject, in that the non-metallic minerals are discussed first, and the metallic minerals last. The maps, sections, and illustrations are numerous and well-executed.

THE OYSTER. A Popular Summary of a Scientific Study. By William K. Brooks, Ph.D., LL.D. Baltimore: Johns Hopkins Press, 1905. 12mo.; pp. 225. Price, \$1 net.

This book was written for the information of all who care for oysters—no matter whether their point of view be that of providers or consumers—for the oyster man, the money-maker, the housekeeper, the editor, or the student of natural history. So well is the book written that many parts of it are as fascinating as a story. The author of this volume is well known in all scientific circles as an accurate, clear-sighted, and trustworthy observer.

RADIO-ACTIVITY. By E. Rutherford, D.Sc., F.R.S., F.R.Sc. Cambridge (England) University Press, 1905. 8vo.; pp. 580. Price, \$3.50.

The author has endeavored in this work to give a complete and connected account from a physical standpoint of the properties possessed by the natural radio-active bodies. Although the subject is comparatively a new one, our knowledge of the properties of radio-active substance has advanced with great rapidity and there is now a very large amount of information on the subject scattered through the various scientific journals. The phenomena exhibited by the radio-active bodies are extremely complicated, and some form of theory is essential in order to connect, in an intelligible manner, the mass of experimental facts which have now been gathered. Prof. Rutherford has advanced the theory that the atoms of the radio-active bodies are undergoing spontaneous disintegration.

So rapid has been the advance in the literature on radio-activity that a second edition of this work has been called for. The book is a serious discussion of a most interesting physical phenomenon.

CHIMICA DELLE SOSTANZE COLORANTI. Teoria ed Applicazione alla Tintura delle Fibre Tessili. Dal Dott. Arturo Pellizza. Milan: Ulrico Hoepli, 1905. 32mo.; pp. 480.

SUBJECT LIST OF WORKS ON AGRICULTURE, RURAL ECONOMY, AND ALLIED SCIENCES. In the Library of the Patent Office. London: Published at the Patent Office, 1905. 16mo.; pp. 424.

ELECTROMAGNET THEORY OF LIGHT. Part I. By C. E. Curry, Ph.D. London: The Macmillan Company, 1905. 12mo.; pp. 400. Price, \$4.

In the present work Prof. Curry treats of the more familiar phenomena explained by Maxwell's theory, and has reserved for Part II those phenomena which this theory fails to satisfactorily explain. Particular stress is laid on the development of the fundamental laws of optics, rather than on the many secondary laws derived therefrom, which have little to do with our conception of the nature of light. The beginning of each chapter presents a brief historical sketch of the subject-matter treated, and as far as possible each chapter is developed independently of the preceding ones. To the end of each chapter examples pertaining to matter treated in the text have been added, and should be found very useful to the reader.

THREE-COLOR PHOTOGRAPHY. By Arthur Freiherrn von Hübl. Translated by Henry Oscar Klein. London: A. W. Penrose & Co., 1904. 8vo.; pp. 144. Price, \$3.50.

This book was originally published in German, in 1897, and represented the first work which entered into all details concerning three-color photography. The English edition, translated by Mr. Henry O. Klein, has been completely revised and brought up to date. Special attention is given to photographic color decomposition, and the color scale which is attached will enable anyone to adjust his own filters. Part II of the book is devoted to the theory and practice of three-color printing, its several chapters thoroughly explaining the art of three-color printing, the sensitizing of photographic plates, use of light filters, selection of printing inks, etc. The book contains much valuable information.

THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC AND PHOTOGRAPHERS' DAILY COMPANION. Edited by George E. Browne, F.I.C. London: Henry Greenwood & Co.; New York, G. Genert. 1906. 16mo.; pp. 1,134.

The British Journal Photographic Almanac comes to us this year if anything a little more portly than usual. The old established arrangement has been revised so far as seemed necessary to make every bit of the text more easy of reference. The contents include a calen-

dar, directory of photographic societies, obituary notices, and contributed articles. Under the heading "Epitome of Progress" appear chapters on apparatus and equipment, photographing various subjects, negative processes, printing processes and color photography. The formulæ for the principal photographic processes are features to be found in most photographic almanacs, but in the case of the volume before us they are particularly noteworthy because of their excellent arrangement. In the end of the book will be found a very good set of tables for the use of photographers.

THE PRACTICAL ENGINEER ELECTRICAL POCKETBOOK FOR 1906. Manchester, England: Technical Publishing Company, Ltd. No date. 24mo.; pp. 440. Price, 60 cents.

The Practical Engineer Electrical Pocket-book is always a welcome visitor. It is very compact, far more so than American pocket-books, which are apt to be just too large to go in the pocket. There is little utility in this form of book unless it can be readily carried in the pocket, and we always have the dual penalty of both fine type and bulkiness. The present issue contains all the valuable matter of the preceding issues with additional tables and formulæ as well. It is an excellent book.

LABORATORY EXPERIMENTS TO ACCOMPANY OUTLINES OF INORGANIC CHEMISTRY. By Frank Austin Gooch and Claude Frederic Walker. New York: The Macmillan Company, 1905. 8vo.; pp. 104. Price, 50 cents.

AIR AND GAS COMPRESSING MACHINERY. London: Worthington Pump Company, Ltd., 1905. 12mo.; pp. 175.

It is seldom that we review a catalogue, but the one before us contains so much useful information, that we feel like departing from our general rule. It is illustrated with very clear diagrams, showing the actual operation of the mechanism employed. The subjects of air lifts, pneumatic hoists, etc., are also treated. There is published considerable information relative to compressed air.

RADIUM AND RADIO-ACTIVE SUBSTANCES. By Charles Baskerville, Ph.D. Philadelphia: Williams, Brown & Earle, 1905. 12mo.; pp. 164; 67 illustrations. Price, \$1.

This book is written to fill the demand for non-mathematical work on the subject of radium. Excellent treatises have recently appeared on radio-activity as viewed from the standpoint of the physicist, and other books as viewed from the standpoint of the chemist; but the present work relates particularly to the subject as applied to medicine, and aims to present a fairly clear conception of our present knowledge of these phenomena in a simple manner, such as will be valuable to physicians who have neither time nor opportunity to study larger works.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending March 6, 1906. AND EACH BEARING THAT DATE

[See note at end of list about copies of these patents.]

Table listing inventions with patent numbers, including: Acids, making barbituric, O. Wolfes; Adhesive supplying mechanism, Tyberg & Mantle; Adjustable gage, J. E. Griffin; Advertising device, A. W. MacArthur; Air feeding device, E. Harcharick; Animal shears, H. S. Burley; Animal trap, G. M. Myers; Anthraquinone compound and making same, M. H. Isler; Automobile carriages, safety steering mechanism for, E. D. Calen; Axles, mechanism for transmitting power from car, D. E. Johnson; Bag, T. Manahan; Ball supporting device, M. Stransky; Bailing press, Tuttle & Cookson; Barrel, R. W. Hardie; Basting apparatus, A. G. R. Williams; Battery, See Storage battery; Bearing, spindle, F. Schulz; Bed, hospital or invalid's, W. J. Harris; Bed spring, F. L. Kunkel; Beer, etc., apparatus for drawing, F. Stieckel; Bell, alarm, A. J. Hamrock; Belt clamp plate, J. Stoll; Belt for conveyers, fabric, J. J. Voorhees; Bicycle lock, G. H. Fry; Binder, loose leaf, W. M. Wheelton; Binding agent and forming same, L. Weiss; Biscuit stamping and cutting machine, T. & J. Vicars; Bit stock head, W. A. Peck; Bit stock jaw, W. A. Peck; Blower, rotary, C. C. Davis; Boiler flue, S. F. Pierce; Boiler furnace, S. F. Pierce; Boiler furnace, J. Collis; Boilers, etc., furnace for steam, A. S. Goldie; Boilers, smoke-consuming apparatus for steam, E. Spohr; Bolt threading and tapering machine, R. Kienzl; Bottle holder, E. L. Drinkwater; Bottle holder, nursing, P. J. Timberlake; Bottle, non-refillable, M. Antes; Bottle, non-refillable, A. F. Gibson; Bottle, non-refillable, M. W. Palmer; Bottles, device to prevent refilling of, E. Mandonnet; Box machine, H. W. Sumner; Brake, H. L. Lynn; Brake, E. Beatty; Brake hanger, W. O. Webster; Breast, artificial, L. J. Wolfe; Brooder, F. C. Hare; Brush, tooth, M. Rosenstein; Bucket and trap, combined minnow, S. B. Saffell; Buggy valance, C. W. Fisher; Building block mold, transformable, H. A. Low; Butter cutting device, H. Moyer; Cake and cracker box and package stand, Rea & Pattison; Calculating machines, transfer and indicator mechanism for, C. C. Dungan; Can hanging machine, J. Brenzinger; Can machine carrier support, C. W. Graham; Canned fruit, H. W. Toler; Candle holders, resilient base for, F. Baumer; Candlestick, J. Kindelan; Candy or cracker sample case, Thilborger & Le Corgne; Car bolster, J. V. McAdams; Car coupling, S. F. Klohs; Car coupling appliance, P. W. Hogan; Car door, grain, J. J. Hahn; Car dump, G. C. King; Car dump, C. S. Lefterts; Car end brace, H. W. Wolff; Car guard rail, M. W. Rogers; Car handling apparatus, F. E. Woodford; Car heater, thermal, E. Klausman; Car ore, A. Christianson; Car seat, J. B. Kilburn; Car seat, E. G. Budd; Car, street, W. J. Herbert; Car wheel, skid, railway, W. H. Fletcher; Cars, combined grain door and loading and unloading platform for, J. S. Bender; Carbureter, R. M. Mick; Card holder, H. L. Franke; Card holding or display device, I. E. Weel; Cardboard box, F. W. Boynton; Cart, dumping, H. S. Long; Cartons, apparatus for the manufacture of moisture proof, H. G. Eckstein; Cartridges, spreader for shot, T. G. Bennett; Case, See Pocket case; Casein, precipitating and preserving, H. V. Dunham; Caster, stove leg, W. Peters; Castings, making patterns for metal, A. M. Helstein; Cement building wall mold, A. McCabon; Chandelier, gas light, M. Hirth; Check perforating and indicating apparatus, A. Marsh; Checkrein fastener, C. W. Barrett; Cheese making device, J. Harding; Chop grader, J. S. Jordan; Chuck actuating mechanism, B. M. W. Hanson; Chuck for metal working machines, B. M. W. Hanson; Churn, J. D. Forsyth; Churn, L. M. Kridelbaugh; Clasp, A. E. Bundsen; Clod crusher and harrow, E. C. Abraham; Clothes line, W. F. Biggs; Clothes rack, folding, G. Grainger; Clothing fastener, L. D. Pierce; Clutch, C. C. Keyser; Clutch mechanism, H. S. Hele-Shaw; Coal, etc., apparatus for handling, J. Campbell; Coal tipples, means for operating the gates of, L. E. Armentrout; Coated materials, machine for preparing, Brigham & Harvey; Coating, J. H. Bletney; Coffee boiler, J. Brunewitt; Coffee percolator, G. E. Savage; Coin tray, D. E. Waters; Coke-handling apparatus, E. N. Trump; Coke oven, Pierboni & Bufano; Collapsible tube, F. C. Holly; Collar holder or supporter, adjustable, T. Allsopp; Collar, horse, W. B. Estes; Compasses, H. Kern; Computing device, W. H. Watson; Concrete and other masonry supporting forms used in the construction of, M. W. Brown; Conduit clamp, J. Staples; Conduit, curb, J. C. Marriott; Container closure, J. R. Harbeck; Controller operating means, Perkins & Jackson; Controller switch, Perkins & Jackson; Conveyor attachment, pneumatic, C. J. Harris; Cooking machine, H. A. Higbee; Cooking utensil, A. Guffer; Cork extractor, J. Coomber; Cornet, Z. A. Meredith; Cradle, self-moving, F. Alroth; Crate, banana shipping, O. Granke; Crate, collapsible or knockdown, J. Ackerman; Crib, W. W. Grigsby; Cultivator, N. S. Barger; Cultivator, W. A. Martin; Cultivator, S. A. Spitz; Cultivator, wheel, J. K. Young; Cuspidor, Madden & Pfender; Cut off, rain spout, D. C. Johnson; Cutting device, rotary, T. B. Williams; Cutting tool, J. B. Hawley; Davenport, F. A. Jacob; Decanting apparatus, liquid, C. Sellenscheidt; Decoys, anchor for, H. H. Tartsch; Dehner, G. Webster; Delivery box, L. J. & P. Zimmermann; Delivery device, J. Gregory; Dental matrix retainer, C. M. Lefingwell; Desk, reading, W. J. Lonergan; Die stock, adjustable, B. Borlen; Digger, See Potato digger; Dish washing machine, Sigler & Dow; Display easel, J. B. Timberlake; Displaying apparatus, card, T. S. Crapp; Door, F. Dentler; Door and automatic closing means therefor, combined, C. L. Colby; Door releasing device, electric, L. A. Leon; Door staying device, sliding, F. Bahlum; Dough or other plastic material, machine for molding, G. F. Chutter; Draft chains and the like, end for the spreaders of, J. Holmes, Jr.; Draft equalizer, H. C. Boss; Draft rigging, P. H. Raspberry; Draw bag pocket, W. Gatwood; Drawer support, J. R. Freeman; Dregger, N. R. Harris; Dredging bucket, C. A. Morris; Dredging machine, E. S. Burch; Dredging machinery, link of bucket, R. E. Douglas; Drill cup, A. W. Perry; Drills, shot feed for, K. Brooks; Drilling and bolt cutting machine, combined, K. C. Davis; Driving mechanism, J. C. Cromwell; Dye vat, F. I. Stone; Dynamometer, J. F. Hammond; Educational appliance, J. A. Healey; Electric currents, generator of intermittent, M. P. Ryder; Electric machine, dynamo, W. L. Waters; Electric machine, reciprocating, T. H. Aldrich; Electric motors, system of remote control for, Perkins & Jackson; Electrical circuits, reversing switch for, T. S. Perkins; Electrical conductor conduit or casing, Knight & Nagel; Electrical controller, plural speed, G. N. Eastman; Electrolytic cells, apparatus for feeding, F. J. Briggs; End gate wagon, W. F. Wagner; Engine, I. Lehman; Engraving machine, die, A. J. Loepsinger; Erasers, means of attachment for, C. H. Tunper; Exhibition board, D. Haar; Explosion engine, R. Hartwig; Extremator, J. D. Harris; Eyeglass holder, H. Ely; Fabric machine for making interposed, J. C. Perry; Fabric steaming apparatus, C. H. Fish; Fan motor, C. R. Brock; Fastener, Haustine & Thompson;

Table listing inventions with patent numbers, including: Feed mill, N. Burr; Feeder, boiler, F. Leadbeater; Fence post, M. E. Johnson; Fence post, G. B. Smith; Fence stretcher, wire, M. E. Johnson; Fence tie, metal, B. Griffin; Fertilizer distributor, O. C. Rawley; Figure, jointed cut out, T. E. Wood; Fixament support for osmium, C. A. von Weilsbach; Filing card and lock therefor, G. A. Shoemaker; Filter, water, R. C. Barrie; Fire alarm, automatic, N. H. Ferland; Fire escape, C. Kramer; Fire escape, A. S. Noonan; Firearm, automatic, R. H. Kjellman; Firearm, automatic gas operated, M. F. Smith; Fishpole, J. Pepper, Jr.; Fish hook, D. E. Robinson; Floor drain and trap, H. C. Gradwohl; Fluor expansion, G. Swanson; Fluid joint, flexible, C. W. Hawley; Fluids, air or gas lift for, W. B. Harris; Flush tank, M. Hogan; Flushing tank, W. Burns, Sr.; Foundations, forming, E. C. Smith; Fuel feeding apparatus, hydrocarbon, R. C. Nelson; Furnace, J. R. Russell; Furnace charging mechanism, D. Baker; Furnaces, smoke consuming apparatus for, J. P. McMahon; Garbage can, E. S. Pond; Garment pad, R. Raphael; Garment support, M. S. Goldman; Garter fastening device, men's, J. Maltby; Gas burner, inverted incandescent, E. Kramer; Gas engine, E. C. Kavanagh; Gas meter, S. E. Crawford; Gas pressure regulator and governor, R. & W. J. Hillis; Gas producer, J. H. Swindell; Gas producing apparatus, C. Ellis; Gate, R. C. Wessels; Gear, starting, stopping, speed controlling, and reversing, H. S. Hele-Shaw; Gear, variable speed, C. F. G. Low; Gears, making composite, H. B. Atha; Gearing, variable speed, J. Anderson; Glass bottles and the like, machine for the manufacture of, W. J. Demming; Glass joint fastener, W. E. Byer; Glass making apparatus, wire, W. Buttler; Glass, manufacture of, F. L. O. Wadsworth; Glass, manufacture of sheet or plate, W. T. Nicholls; Glass sheets, making, J. H. Lubbers; Gold dredge, H. J. Clark; Governor, L. J. Watson; Governor mechanism, motor, C. Schmitthenner; Governor, speed, C. E. Conkling; Grain binder attachment, S. W. Berry; Gramophone, C. A. Parsons; Grapple, E. Y. Moore; Griddle greaser, C. H. Haight; Guide chain, Vom Clegg & Benedict; Gun, pneumatic, J. Pusey; Hair pins, apparatus for making wire core, C. J. Leyers; Hame and trace connector, G. F. Lindsay; Hammer, pneumatic, A. Levedahl; Handle or grip, C. L. Stockdell; Harrow, J. R. Jones; Hat fastener, S. M. Johnstone; Hat holder for ladies' dressing cases, S. I. Norton; Hat stretcher, E. W. Shambaugh; Hay tedder, H. B. Sperry; Head and back rest, adjustable, W. H. Carr; Headlight casing, locomotive, E. A. Edwards; Headgear, O. D. Shaw; Heat and smudge, production of, G. Griffiths; Heater, See Car heater; Heater, J. Magee; Hedge trimming machine, R. Smithers; Hinge, Haustine & Treise; Hinge, J. R. Carter; Hinge, H. G. Kimple; Hinge for windows and the like, detachable, G. H. Parker; Hog loader, C. C. Swan; Hog scalding, J. N. MacLeod; Hook and eye, A. G. Miller; Horse blanket, C. Loughrey; Horseshoe, nailless, L. N. Beauchemin; Hose clamp, J. E. Johnson; Hose supporting device, J. J. Barry; Hydraulic pressure device, J. J. Barry; Hymn indicator, S. W. Hyde; Ice cream freezer attachment, J. E. Birney; Ice cream mold, J. D. Kinzer; Ice making apparatus, A. Campbell; Inhaling apparatus, A. Velschow; Inking mechanism, G. F. Scull; Insulator pin, F. MacKean; Jacquard mechanism, C. Vorwerk; Journal bearing, S. Neemes; Key, Taylor, changeable combination, W. J. Taylor; Key opening can, W. H. Wells; Label and premium coupon, combined, H. B. Duane; Lace making holder, C. Mantz; Lamp, J. C. & J. W. Aschenbach; Lamp, W. T. Maney; Lamp, T. D. Davis; Lamp burner, C. H. Dressel; Lamp chimney holder, W. J. Snow; Lamp collar, J. W. Collins; Lamp, electric incandescent, W. J. Phelps; Lamp, R. M. Dixon; Lamp, incandescent gas, J. G. A. Kitchen; Lamp, miner's, F. A. Smith; Lamp, portable electric, J. L. Mulry; Lamp regulator, A. L. Drum; Lamps, fastening metal collars to glass, J. W. Collins; Lantern crank mechanism, A. L. Edwards; Latch, knob, J. Christensen; Lathes, gearing indicator for screw cutting, H. Mohlenbeck; Lead cutters, etc., gage attachment for, G. M. Durell; Ledger leaf, L. E. Shipman; Leveling instrument, E. A. Bostrom; Lever with locking device, hand, J. Kunz; Life saving apparatus, B. Carlsen; Life saving device, J. W. Dalton; Lifting jack, E. T. Trefethen; Lightning arrester, F. K. Singer; Linotype machine, C. Muehleisen; Linotype machine, T. S. Homans; Liquid elevating apparatus, Bieness & Merwin; Liquid fuel burner, J. R. Russell; Listers, plows, and the like, attachment for, L. N. Stewart; Locomotive cylinder, steam, H. Lentz; Loom shuttle, R. D. Fraser; Loom shuttle, J. Bin; Loom shuttle, W. H. Wilson; Loom stop motion, circular, C. G. Hill; Lubricating pads, woven fabric for, E. Mooney; Lubricator, W. E. Bryant et al.; Lubricator, C. Rutz; Lubricator, F. C. Le Messurier; Lubricator, H. J. Brown; Mail bag catcher, F. D. Smiley; Mail bag catcher, D. F. Stokes; Mail box, rural, Brown & Bybee; Manholes, cover for road, F. Baumann; Mask, catcher, J. Gamble; Match making machine, Hope & Robinson; Matte, treating, W. M. Johnson; Mattress, sectional, H. C. Kee; Measuring instrument, angle, F. E. Hutchins; Mechanical movement, D. Ashworth; Mechanical movement, H. Brammer; Medical applicator, E. H. Groth; Metal corroding apparatus, G. D. Coleman; Metal leaching, T. B. Joseph; Metal working machines, feed adjusting device for the cross slides of, B. M. W. Hanson; Meter, See Stand, pivotable, Reichert & Heyne; Milk cooler, G. Matteson; Milking appliance, E. Wallace;

"Star" Lathes
 For FINE, ACCURATE WORK
 SENeca FALLS MFG. CO.
 695 Water Street,
 Seneca Falls, N. Y., U. S. A.

Engine and Foot Lathes
 MACHINE SHOP OUTFITS, TOOLS AND SUPPLIES. BEST MATERIALS. BEST WORKMANSHIP. CATALOGUE FREE
 SEBASTIAN LATHE CO., 120 Culvert St., Cincinnati, O.

Screw Machine Products
 in HIGH BRASS, LOW BRASS and STERLING SILVER
 Quotations Made From Model or Working Drawings
GEORGE W. DOVER CO.
 Factory B Providence, R. I.

Acetylene Gas Users
 Should get ALCO BURNERS for House Lighting or Auto Lamps. Longest life. Highest candle-power. \$2.10 dozen.
AMERICAN LAVA COMPANY
 Chattanooga, Tenn.

Specialty Sales Manager
 HERE OR ABROAD
 Strong personality, unusual ability in interesting and selling to intelligent, discriminating buyers. During past ten years have successfully managed from both New York and Paris, the sales of two famous mechanical specialties. Labor-saving machines, mechanical devices or processes preferred. Can establish European agencies or manage sales direct to trade here. Credentials particularly good. Address, MANAGER, P. O. Box 713, New York

Nickel Plate Road Again Selling Colonist Tickets to the Pacific Coast.
 Extremely low rate tickets on sale daily until April 7 to Pacific Coast and other points in the Far West. Tickets good on any of our trains and in tourist sleepers. For particulars write A. W. ECCLESTONE, D. P. A., 385 Broadway, New York City.

PATENTS
 Our Hand Book on Patents, Trade-Marks, etc., sent free. Patents procured through Munn & Co. receive free notice in the SCIENTIFIC AMERICAN
MUNN & CO., 361 Broadway, N. Y.
 BRANCH OFFICE: 625 F St., Washington, D. C.

GLOBE INCUBATORS
 Hatch chickens. No experience necessary. Our large new Illustrated Catalogue of Incubators and Brooders and Poultry Information mailed free. Write to-day. Address
C. C. SHOEMAKER
 Box 651 Freeport, Ill.

INVESTIGATE THE POULTRY BUSINESS

Write for a free copy of my book describing
Profitable Combinations of Egg, Broiler and Roaster Farms

It gives the Prices paid for eggs and poultry week by week for the past three years. It tells how and when a hatch taken off each week in the year could be most profitably marketed. It shows how you can make \$2.00 on a large winter roaster. It tells what profits can be made with each of the popular breeds, and the costs of production. I have helped thousands to make money with poultry. My Model Incubators and Brooders are used on the money-making farms. It is my business to teach those who use them to do so profitably. Whether your needs are small or large, I will furnish without charge, estimates and plans for a complete equipment that will insure success without your spending a dollar uselessly. Send for my complete literature.

GHAS. A. OYPHERS
 3944 Henry St. Buffalo, N. Y.

American Homes and Gardens

BOUND—VOLUME ONE
 Profusely Illustrated. Large Quarto. 426 Pages. Green Cloth Covers Produced in Several Colors. A Beautiful Book. Price \$3.50

This volume, containing house plans, many suggestions for the decoration and furnishing of the home; also for the improvement of the grounds and the gardens, is indispensable to those requiring such information.

MUNN & CO., Publishers of the Scientific American
 361 Broadway, New York

Milking machine, G. Hutchinson	814,212
Mixing apparatus for dry materials, G. Raps	814,233
Mold, L. L. Linsford	814,304
Mold compound, M. Ams	814,007
Molding machine, C. Reed	814,476
Motor, C. H. Dill	814,363
Motors, system for variable speed operation of alternating current, B. G. Lamme	814,380
Musical instrument, pneumatically actuated, E. S. Votey	814,176
Musical instruments, device for testing strings for, C. W. Hoggard	814,541
Musical instruments, means for governing the tempo in mechanical, W. D. Moses (now W. M. Davis)	814,521
Nut lock, J. H. Butterfield	814,516
Nut lock, W. R. Mecherle	814,555
Nut, self-locking, L. M. Gallher	814,199
Oil burner, crude, E. Darby	814,360
Oil burning system, I. E. Smith	814,091
Oil for vehicle wheels, A. E. Wilcox	814,104
Oiling tracks and applying the air brakes for stopping railway traffic, means for, Gunn & Romberger	814,371
Optometer, W. B. Brown	814,512
Ordnance mount, W. H. Bevans	814,348
Ore and coal crushing machine, J. F. Sauerman	814,085
Ore for the manufacture of iron and steel therefrom, apparatus for the treatment of, Moore & Heskett	814,557
Packing box or carrier for oranges, I. Naylor	814,069
Packing machine, J. A. Keyes	814,454
Padlock, Wiman & Schauman	814,495
Pail, lunch, J. Walter	814,578
Panel board, E. R. Le Manquis	814,146
Paper and pulp screen, F. M. Chapman	814,587
Paper holder and cutter, roll, J. F. Finan	814,598
Paste press, S. Tofanelli	814,410
Pattern plates, apparatus for use in manufacturing small metallic, P. Bonvillain	814,638
Pattern plates, manufacturing, P. Bonvillain	814,263
Pen, fountain, R. Conklin	814,520
Photographer's return envelop, T. Edean	814,437
Photographic flash light apparatus, Smith & Martin	814,243
Photography, trichromatic, Jumeaux & Davidson	814,215
Piano action bracket, J. Davenport	814,117
Piano protector, Hoskin & Noonan	814,544
Piano shield, M. Tugle	814,174
Picture exhibiting machines, film holder for, M. Smith	814,406
Picture hanger, W. W. Pursell	814,163
Pin, C. F. Markham	814,465
Pin guard, M. C. Rybinski	814,084
Pin setting apparatus, Morgan & Fellows	814,227
Pipe, See Tobacco pipe	
Pipe, apparatus for forming beads on cast iron, C. N. Church	814,519
Pipe core forming machine, Dimmick & Ford	814,028
Pipe expander, F. H. Knee	814,300
Pipe fitting, J. W. Kelly	814,295
Plant or flower pot, A. J. Eggleton	814,595
Planter, corn, Anderson & Horney	814,182
Plastic block molding machine, J. J. Cox	814,358
Plow, E. B. Lunsford	814,551
Plow, gang, Houghton & Raymond	814,046
Plow, gang, G. R. Marriage	814,552
Pocket case for mileage books, baggage checks, etc., C. A. Hawes	814,205
Poles, derricks, etc., anchor or stay for, McGillivray & Frye	814,229
Potato digger, F. W. Benjamin	814,346
Power generation system, L. G. Selover	814,237
Power transmission, driving clutch for, J. K. Stewart	814,093
Power transmitting mechanism, A. T. Brown	814,268
Precious metals from ores, etc., recovery of, J. A. Just	814,294
Press, G. B. Lamb	814,054
Presses, impression throw-off for bed and platen, M. Gally	814,282
Pressure regulator, E. E. Gold	814,285
Printing and the like machines, taking off disk for feeding paper in, Hall & Barber	814,539
Printing press, rotary, H. F. Bechman	814,510
Printing presses and other machines, sheet handling machinery for, Dexter & Hallstream	814,522
Printing presses, attachment for ink foundations of, R. J. Greenway, Jr.	814,037
Prints, producing multicolor, J. Bachmann	814,108
Projectile, E. M. Johnson	814,378
Pump, L. T. Weiss	814,179
Pump, E. M. Nevins	814,312
Pump, well, Evans & Gahagan	814,365
Pumps, safety attachment for windmill, A. Jensen	814,607
Pumps, working barrel for oil and other, W. H. Westerman	814,491
Punch press, F. Schulz	814,167
Punching tubing, press for, J. Gibson	814,200
Push drill, Z. T. Furbish	814,529
Quail trap, G. E. Hawkins, et al.	814,207
Radiators, dust collecting shield for, W. J. Reynolds	814,234
Rail, C. M. Simpson	814,401
Rail anchor, J. M. Scott	814,427
Rail joint, G. C. H. Habermann	814,443
Railway and railway car, P. Steiner	814,245
Railway gate, A. Spies	814,330
Railway safety gate, automatic, H. E. Bartlett	814,012
Railway signaling device, S. C. Harvey	814,376
Railway switch, J. M. Smith	814,172
Railway switch, V. Angerer	814,504
Railway switch and signal apparatus safety device, L. Griffith	814,537
Railway tie, W. A. Collin	814,658
Railway tie, W. A. Rollins	814,327
Railway traffic controlling apparatus, C. W. Coleman	814,021
Ratchet movement, W. A. Peck	814,319
Ratchet tool, Z. T. Furbish	814,528
Receptacle, R. Y. Braesbaw	814,265
Receptacle, M. Andersen, et al.	814,503
Reciprocating tool or engine, C. A. Faessler	814,597
Recording and computing mechanism, J. W. Nunamaker	814,158
Refrigerator, S. Di Vecchio	814,523
Relay, J. Allen	814,501
Revolver lock, D. J. Buchanan	814,017
Rifle set lock and safety set trigger, D. Brown	814,584
Ripper, F. E. Reed	814,080
Roasting furnace, T. F. Sheridan	814,238
Roasting furnace, F. Klepetko	814,297
Rotary engine, E. J. Christie	814,018
Rotary engine, R. B. Hinky	814,044
Rotary engine, J. Fowler	814,126
Rotary engine, W. S. Mott	814,389
Rubber from rubber plants, extraction of pure raw, K. von Stechow	814,407
Sad iron holder, G. Wlett	814,253
Sash fastener, window, Warren & Myers	814,177
Sash lock, window, J. C. Fritch	814,281
Sash ventilator, storm, W. R. A. & J. G. Ball	814,260
Saw machine, band, Harold & Wilderson	814,652
Sawbuck, A. D. Thomas	814,336
Scaffold bracket, folding, Blitsch & McDonnell	814,015
Scraper bowls, making, T. H. Stagg	814,568
Scraper, dirt, J. Harter	814,446
Seal, bottle, G. H. Gillette	814,531
Seeder and cultivator, combined grain, N. R. Nelson	814,070
Sewing machine, C. A. Dearborn	814,025
Sewing machine, blindstitching, F. Herman	814,603
Sewing machine bobbin case, W. R. Abercrombie	814,341
Sewing machine cabinet, E. G. Johnson	814,450
Sewing machine clamp, buttonhole, J. Kiewicz	814,216
Sewing machine feed mechanism, C. A. Dearborn	814,026
Sewing machine feeding mechanism, Diehl & Grieb	814,027
Sewing machine guide, H. Bryce	814,513
Sewing machine stitch forming mechanism, C. A. Dearborn	814,642
Sewing machine work holding device, Lewis & Bagley	814,057
Shade hanger, J. Linebarger	814,149
Shade roller bracket, adjustable, H. L. Meadowcroft	814,226
Shears. See Animal shears	
Shears, A. N. Eastman	814,029

Toquet Marine Motor
 STANDS FOR RELIABILITY
 Ask any owner of a "Toquet" Motor. Get his opinion.
 If you don't know a "Toquet" owner write us, we'll gladly send names and addresses of a few.
 Catalogue sent on receipt of three 2 cent stamps.
THE TOQUET MOTOR CO.
 Metropolitan Building, 31 East 23d Street, New York
 G. EDWARD SHAW, General Manager

Spangenberg's Steam & Electrical Engineering
 Price \$3.50
 By E. SPANGENBERG, M.E. formerly Superintendent St. Louis School of Engineering, ALBERT UHL, A.I.E.E., and F. W. PRATT, 672 pages, 68 illustrations. Only work containing 1065 Questions and Answers on every branch of engineering.
 Easy to Understand
 Written by practical men for practical men in an easy and simple style. Treats on Gas and Gasoline Engines, Stationary and Locomotive Engineering, Compressed Air, Refrigeration, Hydraulic Elevators, and has Over 200 Pages on Electricity.
GEO. A. ZELLER BOOK CO., 1 S. 4th St., St. Louis, Mo.
 62-page pamphlet tells all about it.

A Large Growing Field
 In making Concrete Products—the Famous Miracle Double Staggered Air Sp. ce Building Blocks, Cement Brick, Cement Drainage, Sewer Tile and Sidewalk Tile. Catalog A. I.
MIRACLE PRESSED STONE CO.
 Minneapolis, Minn.

To Book Buyers
 We have just issued a new 48-page catalogue of recently published Scientific and Mechanical Books, which we will mail free to any address on application.
MUNN & COMPANY
 Publishers of SCIENTIFIC AMERICAN
 361 Broadway, New York

FOR PIPE OR CIGARETTE
A RARE TOBACCO
French's Mixture
 is a delicious blend of the cream of North Carolina golden leaf with a superb natural flavor, aroma and sweetness. Made nearly altogether by hand in the old-fashioned way. Purest and highest grade smoking tobacco manufactured.
 Mild, rich, fragrant, and never bites the tongue. Sold only direct from factory to smoker. Send ten cents (silver or stamps) for sample pouch and booklet.
French Tobacco Co., Dept. H, Statesville, N. C.

GET MOST ANYWHERE IN AN
Orient
 \$400
 MADE BY THE WALTHAM MANUFACTURING CO. WALTHAM, MASS. U.S.A.
 ACTIVE AGENTS DESIRED IN UNASSIGNED TERRITORIES. WRITE FOR PROPOSITION AND ILLUSTRATED CATALOG.

The best Agency Proposition in America. Write for particulars and illustrated catalog.

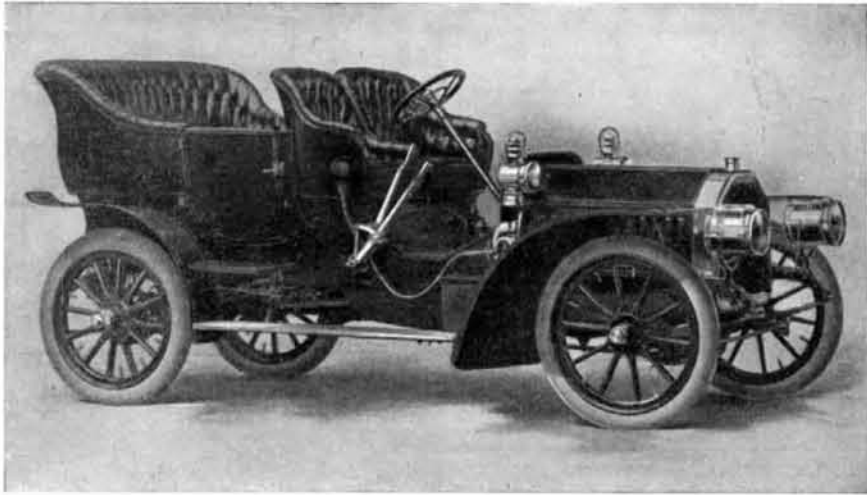
FOR GUNSMITHS, TOOL MAKERS, EXPERIMENTAL & REPAIR WORK, ETC.
 From 9-in. to 13-in. swing. Arranged for Steam or Foot Power, Velocipede or Stand-up Treadle. Send for Lathe Catalog.
W. F. & JNO. BARNES CO.
 Established 1872
 1999 Ruby St., Rockford, Ill.

REO
\$1,250

REO Touring Car
 16 horse-power; 1,600 pounds; 90-inch wheel base; 5 passengers; side-door detachable tonneau; speed, 35 miles per hour. \$1,250.

THE POSITIVE CAR
 Both in make-up and performance REO cars are positive clear through.
 Begin with the double-opposed motor's long six-inch reaching stroke, pushing the car up-hill with a steady, powerful, positive drive unequalled in any other motor of its rating or price. Take the positive gear-pump cooling system with its ingenious sectional radiator which positively cannot be put out of action by freezing or any ordinary damage; the positive force-feed oiler, forcing an exact measured charge exactly where and when it is needed; the positive valves, carburetor and commutator. No dependence anywhere upon gravity or uncertain pressure, but every part positively performing the positive and certain work for which it was designed.
 No wonder that REO cars stand first among positive performers and positive cup-winners.
REO-graph, showing the inside of a typical motor in actual moving operation, sent to you for six cents in stamps addressed to Dept. 65.
 Catalogue free
REO MOTOR CAR CO.
 Sales Department LANSING, MICH.
R. E. OLDS, Pres. **R. M. OWEN, Sales Mgr.**
 Agencies throughout the United States

Peerless



The Heart Action of an Automobile

The action of the carburetor and governor in an automobile has the same relation to its power and efficiency as heart action in an individual. If a motor of fifty—or even hundred—horse power hasn't a carburetor-governor action that responds instantaneously to all demands, it is like the strength of a Samson in a man with heart disease—absolutely useless in an emergency.

You've seen a man driving a car in a crowded thoroughfare and start to spurt out of the crowd by throwing into his high speed and then have his motor stop in the midst of the jam to his imminent danger. That was due to weak heart action in his car. The added demand on the motor at low speed stopped the car entirely before the governor could open the throttle and let in more gas to speed up the engine.

With the new Peerless carburetor and governor the response to such a demand is instantaneous. The Peerless throttle is so constructed that the powerful suction in the intake pipes that tends to keep the throttle closed is entirely neutralized, and the instant the governor slows down, the throttle opens. In fact, this throttle action not only makes the Peerless governor instantly responsive to all demands, but governs the motor with perfect smoothness under all conditions of load and grade.

This is only one of the vital improvements on the new Peerless—the car that has awakened such widespread interest in the Automobile world.

Send to-day for catalogue that describes every feature of the car in detail.

THE PEERLESS MOTOR CAR COMPANY
38 Lisbon Street, CLEVELAND, OHIO
Member A.L.A.M.

ARE YOU SATISFIED

WITH YOUR PRESENT LOCATION?



Do you want to establish a plant in a field where conditions are more favorable? There are locations for factories of all kinds on the Lehigh Valley Railroad. It will pay you to investigate. Address or call on

P. H. BURNETT, Industrial Agent,
143 Liberty St., New York

WHITENASH YOUR BUILDINGS

At Lowest Cost



with a Progress Universal Spraying Machine. One man can apply whitewash, calcimine, or cold water paint to 10,000 square feet of surface in ten hours, and do better work than with a whitewash brush. It is also adapted for spreading disinfectants, destroying insect pests and diseases on trees, vegetables, and other plants, extinguishing fires, washing windows, wagons, etc., and other purposes. This machine is really a portable water works system, as it develops a pressure of over eighty pounds, and lifts the liquid more than eighty feet higher than itself. The Progress costs only \$21.00 and lasts a lifetime. It pays for itself the first year. Write for detailed description.

DAYTON SUPPLY CO., Dayton, Ohio.

A MONEY MAKER

Hollow Concrete Building Blocks, Best, Fastest, Simplest, Cheapest Machine. Fully guaranteed.

THE PETTYJOHN CO.
615 N. 6th Street, Terre Haute, Ind.

THE IDEAL SIGHT RESTORER

Is Your Sight Failing?

All refractive errors, muscular trouble & chronic diseases of the eye cured by scientific MASSAGE.

Illustrated treatise with affidavit testimonials free. Address

THE IDEAL COMPANY,
239 Broadway, New York.

POULTRY BOOK FREE

Helpful advice on poultry raising, 228 pages, (8x11), 500 illustrations of practical chapters. Describes the Standard Cyphers Incubator. 1000 patterns, 100000 days trial. Catalog FREE. If you mention this paper and send address of two near by poultry raisers, write nearest office.



CUBANA

Beyond the Line Where Snow Files

A tropical climate gives you "that luxurious feeling" which only comes with complete rest.

THE HAVANA LIMITED

A train de luxe, leaves Chicago Friday afternoon at 3, St. Louis 9.40 p.m., arrives Mobile DOCK after dinner Saturdays, when you are transferred direct to the New Palatial Steamship "Prince George," arriving Havana in time for breakfast Monday.

The equipment of the train and the accommodations on the boat are the best offered winter tourists.

ROUTE { Chicago & Alton Ry.
 { Mobile & Ohio R. R.
 { Munson Steamship Line

May we have an opportunity of elaborating on the advantages of a Cuban trip this winter?

Address **GEO. J. CHARLTON**
Gen'l Pass'r Agt., Chicago & Alton Ry.
CHICAGO, ILL.

Shoes, antislipping device for, G. L. Pierce	814,474
Signal apparatus, electric, L. Griffith	814,535
Signal system, electrical, F. Lacroix	814,302, 814,303
Silo, C. W. McClure	814,067
Sleeve runners, sledges, and the like, artificial track for, A. Schumann	814,626
Sleeve fastener, G. H. Russell	814,328
Smelting process, electrical, W. M. Johnson	814,650
Smoke preventing apparatus, F. A. Lewis	814,550
Snap hook, G. A. Huff	814,135
Sole and sole placer, J. Mahoney	814,061
Speed indicating apparatus, L. Nissim	814,071
Spinning or twisting ring, J. P. Crane	814,189
Spraying apparatus, A. Krautzberger	814,218
Spring, F. J. Mercer	814,387
Squares, attachment for steel, T. F. Norfolk	814,157
Stacker, hay, H. M. Thompson	814,498
Steam boiler, C. W. Hawkes	814,206
Steam, regulating the temperature of superheated, J. P. Sneddon	814,629
Still, J. H. Smith	814,405
Stitch and similar machine, festoon, R. Schochll	814,236
Stopper, C. N. Brisco	814,352
Storage battery, F. Mouterde	814,064
Stove, gas heating, French & Sheets	814,280
Stovepipe holder, L. Wetherbee	814,254
Structure, composite, J. H. Hood	814,134
Stud, shirt, O. L. Henerlau	814,042
Suspender loop, C. W. Bartrum	814,509
Suspenders, W. D. Flynn	814,125
Suspenders, B. J. Bacon	814,344
Suspenders, trousers, B. J. Bacon	814,345
Swing, rotary, W. R. McKnight	814,156
Switch key, E. B. Craft	814,277
Switch operating device, O. J. Du Vernay	814,278
Switch operating mechanism, N. K. Bowman	814,582
Syringe, hypodermic, J. W. Horner	814,543
Table screen, J. C. Patterson	814,473
Talking machine blank, disk, R. Klein	814,053
Talking machine motor, E. R. Johnson	814,047
Tank, D. C. Paige	814,160
Tapping and drilling machine, A. J. Strong	814,247
Tea or coffee pot, W. L. Bodman	814,262
Telephone exchange, W. M. Marean	814,386
Telephone or telegraph system, G. Ritter	814,478
Telephone system, W. W. Dean	814,118
Telephone system, E. A. Terpening	814,571
Telephone toll box attachment, R. M. Combs	814,276
Telephonic installation, automatic, B. Kugelmann	814,219
Telephonic relay, J. Trowbridge	814,411
Tempin, divided, S. G. Wilson	814,257
Timber jack, J. M. Williams	814,105
Time recorder, workman's, D. Heng	814,602
Tin or tin and lead, recovering, J. C. Tallaferrero	814,334
Tire, P. W. O'Connor	814,560
Tire, elastic metallic, A. Peust	814,161
Tire, pneumatic, F. G. McKim	814,068
Tire, resilient vehicle, J. F. Rau	814,164
Tire, sectional, F. G. Urfer	814,175
Tire shoe, E. Krebs	814,143
Tire shoe, pneumatic, J. W. Hyatt	814,377
Tobacco pipe, F. M. Hoies	814,045
Toilet, F. A. Steele	814,408
Toilet articles, etc., combined frame and handle for, L. Van Gale	814,415
Tool, combination, H. A. Hamilton	814,039
Tool, hand controlled, H. A. Clifford	814,020
Tower cap, F. T. Zimmerman	814,106
Toy, Linderman & Corson	814,463
Toy building block, J. B. Given	814,367
Track fastener, C. L. Durborow	814,525
Track sanding apparatus, B. D. Willits	814,256
Tramway bucket and rope clip, B. C. Riblet	814,622
Trap, S. C. H. Plint	814,527
Trap, for sinks, bath tubs, and the like, A. Savard	814,481
Trolley catcher, S. F. Pierce	814,075
Trolley conductors, supporting structure for, G. Westinghouse	814,339
Trousers hanger, A. Chelberg	814,429
Truck, railway car, G. C. Stewart	814,409
Tub, tank, and other like receptacle, H. Remann	814,625
Tug, frame and breeching, I. B. Martin	814,554
Tumbling barrel, A. F. Schroeder	814,166
Turbine, elastic fluid, G. Belluzzo	814,423
Turbine engine, gas, W. E. Clark	814,187
Turbines, nozzle for elastic fluid, F. R. C. Boyd	814,425
Turbines, nozzle for elastic fluid, C. Braedway	814,426
Turbines, nozzle for elastic fluid, G. Meyersberg	814,466
Turbines, nozzle for elastic fluid, R. H. Rice	814,477
Twine and thread cutter, Myer & Koeniges	814,153
Twine binder, B. Levison	814,462
Type packing mechanism, F. A. Johnson	814,048
Typewriter, J. & A. Dey	814,119
Typewriting machine, E. G. Latta	814,144
Typewriting machine, Merritt & Barron	814,310
Typewriting machine, Robbins & Hyatt	814,623
Umbrella, G. K. Garrett	814,035
Valve, E. Simpson	814,402
Valve, differential, D. F. Morgan	814,065
Valve, filter, C. Hungerford	814,136
Valve for air brake systems, J. H. Bleco	814,350
Valve for automobile torpedoes, starting, F. M. Leavitt	814,055
Valve for steam engines, exhaust, W. H. Dyer	814,435
Valve gear for steam and other fluid pressure engines, W. H. Collier	814,275
Valve mechanism for engines, cut off and reversing, W. Willis	814,493
Valve mechanism for internal combustion engines, H. Austin	814,421
Vegetable cutter, J. S. Urban	814,577
Vehicle brake, J. W. McIlvain	814,559
Vehicle wheel, F. A. Seiberling	814,087
Vehicle wheel, G. H. Williams	814,580
Vehicle wheel, resilient, J. W. Roddy	814,479
Vehicles, buffer for use on motor, F. R. Simms	814,171
Veil holder, M. W. Lee	814,221
Vending machine, L. C. Spooner	814,332
Veneering machine, R. H. Lynn	814,382
Veneers, process and apparatus for preparing and cutting, G. S. Mayhew	814,062
Ventilating apparatus, E. L. Parrish	814,621
Ventilator, W. T. Cottier	814,357
Ventilator, Harrington & Hodge	814,651
Vessels, apparatus for marking sunken, F. W. Johnson	814,536
Vessels, means for locating and raising sunken, W. G. Cain	814,517
Violin, O. H. Lemberg	814,549
Vise, hand, S. I. Weifer	814,633
Vise, pipe, McGahan & Ascher	814,228
Wagon bolster and stake construction, E. Einfeldt	814,436
Wardrobe, L. Komorowski	814,457
Washing machine, H. P. Pfum	814,394
Watchcase, J. T. Pendlebury	814,232
Water by electrolysis, apparatus for decomposing, W. F. M. McCarty	814,155
Water for decoloration, process and apparatus for testing, L. Gerard	814,036
Water purification system, J. F. Wixford	814,180
Weapons, pocket holder for, O. Freyer	814,599
Weather strip, C. A. Pike	814,076
Wells, device for removing rings from, W. J. Wagner	814,338
Wheel construction, F. P. Prendergast	814,077
Wheels, mounting or suspension for vehicle, C. W. Fulton	814,198
Windmill, A. Geoffroy	814,283
Windmill, P. H. Hanchett	814,600
Window, J. L. Mesker	814,016
Window and screen attachment, R. Mohr	814,468
Window fastener, R. G. Fraser	814,439
Window retaining apparatus, G. H. Parker	814,317
Window stop and burglar alarm, G. H. Parker	814,314
Window, swinging, G. H. Parker	814,315
Wire goods, machine for making, J. C. Perry	814,392
Wire stretcher, woven, W. Cue	814,024
Wood scraping tool, G. D. Smith	814,404
Work holding attachment, Fertig & Knoll	814,306
Wrench, M. E. Griswold	814,201
Wrench, J. W. Austin	814,343
Wrench, J. F. Tiner	814,575
Zinc formaldehyde hydrosulfite (S.), making, E. A. Fourneau	814,031

IT PAYS BIG To amuse the Public With Motion Pictures

NO EXPERIENCE NECESSARY as our instruction Book and "Business Guide" tells all. We furnish Complete Outfit with Big Advertising Posters, etc. Humorous dramas brimful of fun, travel, history, religion, temperance work and songs illustrated. One man can do it. Astonishing Opportunity in any locality for a man with a little money to show in churches, school houses, lodge halls, theatres, etc. Big profits each entertainment. Others do it, why not you? It's easy; write to us and we'll tell you how. Catalogue free.

AMUSEMENT SUPPLY CO., 467 Chemical Bank Bldg., CHICAGO.



2nd The school boy with his shining morning face.

For Shakespeare's Seven Ages

is a complete, pure food, which builds up the brain, bones and muscles, and promotes healthy growth of the entire system. All of Nature's mineral phosphates are retained. Helpful in meeting the strains put upon the growing child of school age. Also as a table drink, far superior to tea, coffee and cocoa for the whole family.

Pure milk and the extracts of selected malted grains. A delicious food-drink is ready in a moment by simply stirring the powder in water. In Lunch Tablet form also, a healthful confection for children, recommended by physicians. Excellent as a lunch at recess.

A sample, vest pocket lunch case, also booklet, giving valuable recipes, sent if requested. At all druggists.

ASK FOR HORLICK'S; others are imitations.

Horlick's Malted Milk Co.

Racine, Wis., U. S. A.

London, England. Montreal, Canada.

6 WONDERS IN 1

- Do you want to clean bottles, tumblers and lamp chimneys automatically?
- Do you want a perfectly noiseless and effective cooling fan in the kitchen to make the hot season bearable?
- Do you want a magic egg beater which will beat eggs whip cream or salad dressing by itself while you attend to other things?
- Do you want a self-operating emery wheel on which to sharpen and clean your knives, scissors and edged tools?
- Do you want a splendid cotton pelishing wheel revolving so fast that you can make your silverware and cutlery shine as it never shone before?
- Do you want a powerful little motor for 50 useful ends about the home, to run sewing machine, meat chopper, small dynamo, ceiling fan, etc.?

Turn the faucet—that's all claims you want our LITTLE WONDER WATER MOTOR which will attach to your water faucet, smooth or threaded, in a jiffy. A line from you brings our attractive FREE descriptive booklet telling all about it. Don't be deceived by cheap, worthless imitations.

WARNER MOTOR CO., Dept. 15, Flatiron Bldg., N. Y. City
Mfrs. of Water Motors 1-16 to 10 H. P. Water Fans and Accessories

MOTORCYCLES

\$40 up

Send for list No. 102 of 70 machines. Our 1906 catalog on engines, castings, frames, and accessories is ready and should be in the hands of every motorcycle dealer, rider, and prospective purchaser.

SEND FOR IT.
HARRY R. GEER CO., 1015 Pine St., St. Louis, Mo.

Mustard & Company

GENERAL IMPORTERS AND COMMISSION AGENTS

Plumbing Supplies, Safes and Scales. The Largest Hardware Machinery and Tool House in China

9a NANKING ROAD SHANGHAI, CHINA

ICE BOATS!

If you want to know how to make an Ice Boat, buy SCIENTIFIC AMERICAN SUPPLEMENT 1566. Complete working drawings and a thorough description are published. Order from your newsdealer or from **Munn & Co., 361 Broadway, New York**

F-BONITE

PAINT-VARNISH



A black composition combining all the good properties of paint and varnish together with other good properties peculiarly its own. It's waterproof, weatherproof—dries with a hard surface—and will not crack or peel. It is not affected by heat or cold or any kind of climatic changes. It is suitable for everything where color is no consideration, from a wooden shed to an iron bridge.

Best for all kinds of exposed wood, iron work, fences, smoke stacks, stand pipes, roofs, brick work. The price is exceptionally low. Write for interesting Booklet and further information to

BUCHANAN-FOSTER COMPANY
452 Chestnut St., Philadelphia, Pa.

We Are Ignition Specialists



If you have any trouble with your ignition, write to us and we will tell you just what to do. Our Apple Automatic Spark Plug gives a strong, steady current that never fails. No trouble to put on any car or engine. See that your car has an Apple electrical equipment. For full information write The Dayton Electrical Mfg. Co., 58 St. Clair Street, Dayton, Ohio.

Clean House With Air



Over 55 Companies operating Thurman Patents in America, and as many more in Canada, England, and Europe.

FREE CATALOGUE

General Compressed Air House Cleaning Co.
ST. LOUIS, U. S. A.

Manufacturers of the Celebrated Thurman direct-connected Gasoline Driven Air Compressors for Mines, Pneumatic Tools, Etc.




Used by forty of the leading Automobile and motor boat manufacturers. Suitable for any gas or gasoline engine using make and break or jump spark ignition.

EVERY BATTERY GUARANTEED to give satisfaction or purchase money refunded.

WITHERBEE IGNITER CO.
27-31 Thames St. - NEW YORK

1½ H. P.—\$48.00



Best engine made. Notice the round base, which insures higher base compression, which means more speed and more power. Only three moving parts. So simple that a child can run one. Send for catalog G. Dealers write for agency.

The Burdick-Putnam Gasoline Engine Co.,
565-567 Deatur St., St. PAUL, MINN.

Instructive Scientific Papers

ON TIMELY TOPICS

Price 10 Cents each by mail

ARTIFICIAL STONE. By L. P. Ford. A paper of immense practical value to the architect and builder. **SCIENTIFIC AMERICAN SUPPLEMENT 1500.**

THE SHRINKAGE AND WARPING OF TIMBER. By Harold Busbridge. An excellent presentation of modern views; fully illustrated. **SCIENTIFIC AMERICAN SUPPLEMENT 1500.**

CONSTRUCTION OF AN INDICATING OR RECORDING TIN PLATE ANEROID BAROMETER. By N. Monroe Hopkins. Fully illustrated. **SCIENTIFIC AMERICAN SUPPLEMENT 1500.**

DIRECT-VISION SPECTROSCOPES. By T. H. Blakesley, M.A. An admirably written, instructive and copiously illustrated article. **SCIENTIFIC AMERICAN SUPPLEMENT No. 1493.**

HOME MADE DYNAMOS. **SCIENTIFIC AMERICAN SUPPLEMENTS 161 and 600** contain excellent articles with full drawings.

PLATING DYNAMOS. **SCIENTIFIC AMERICAN SUPPLEMENTS 720 and 793** describe their construction so clearly that any amateur can make them.

DYNAMO AND MOTOR COMBINED. Fully described and illustrated in **SCIENTIFIC AMERICAN SUPPLEMENTS 844 and 865.** The machines can be run either as dynamos or motors.

ELECTRICAL MOTORS. Their construction at home. **SCIENTIFIC AMERICAN SUPPLEMENTS 759, 761, 767, 641.**

Price 10 Cents each, by mail

Order through your newsdealer or from

MUNN & COMPANY
361 Broadway New York

Zinc formaldehyde hydrosulfite (S.), making basic, E. A. Fourneaux 814,032

Automobiles, frame of radiators for, A. E. Schaaf 37,881

DESIGNS.

Badge, C. M. Waite 37,864

Badge, C. J. Dieges 37,865

Bookkin, J. H. Crosby 37,871

Bread tray, W. Mischler 37,868

Cigar band, L. C. Wagner 37,872

Curtain grille, F. E. Erickson 37,873

Display cabinet, picture, G. E. Knowles 37,882

Display case, E. Faber 37,879

Gas burner, incandescent, V. F. von Lessberg 37,878

Lace, levers, C. W. Birkin 37,880

Pencil, E. Faber 37,869

Ribbon, C. P. Schlegel 37,884

Rosary, H. F. Nehr 37,875

Rosary, B. Teubner 37,876

Spoon handle, E. Mebery, Jr. 37,867

Spoon or similar article, J. R. Bookwalter 37,866

Tablet or lozenge, J. Peterson 37,874

TRADE MARKS.

Abrasive material, carborundum, Carborundum Company 50,104

Ale, ginger, G. F. Hewett Co. 50,267

Antiseptic, R. S. Walker 50,256

Antiseptic compound, P. Harknesson 50,233

Asphalt, Warren Chemical & Manufacturing Company 50,084

Axes, hatchets, and axes, Collins Company 50,138

Baking powder, Hulman & Co. 50,272

Bearings, ball, Hess-Bright Manufacturing Co. 50,105

Beef extract, Cudahy Packing Co. 50,296

Beer, lager, F. A. Poth & Sons 50,069

Belting, leather, Patterson, Gottfried & Hunter 50,157

Bitters, Frankel, Regenthal and Damler 50,170

Blankets, wool, S. Levy 50,178

Bluing, laundry, Russ Company 50,103

Boots and shoes, leather, F. Mayer Boot & Shoe Co. 50,129

Boots and shoes, leather, I. Levinstein 50,132

Boots and shoes, leather, Lynchburg Shoe Co. 50,183

Boots and shoes, leather, Nesmith Shoe Company 50,134

Boots and shoes, leather, J. H. Cross 50,114

Boots and shoes, leather, I. Levinstein 50,155

Boots and shoes, leather, P. W. Minny & Son 50,283

Boots and shoes, liquid dressing for, C. L. Hautaway & Sons 50,066

Boots and shoes, liquid dressing for leather, C. L. Hautaway & Sons 50,067

Brake shoes, American Brake Shoe & Foundry Company 50,122

Brandy, H. Campe & Co. 50,260

Brooms, American Broom & Brush Co. 50,202

Canned salmon, J. G. Meier 50,231

Canned sardines, C. B. Mitchell 50,284

Canned vegetables and fruits, S. J. Seneca 50,291

Cards, playing, New York Consolidated Card Company 50,073

Cards, playing, United States Card Playing Co. 50,078

Cards, playing, New York Consolidated Card Company 50,106

Cards, playing, United States Playing Card Co. 50,117

Catchup, tabasco, and tomato, Joseph Campbell Company 50,116

Cement, Portland, A. Clarke 50,239

Chains, fobs, chatelaines, and chain trimmings, C. R. Harris 50,130

Champagne and still wine, F. Korbel & Bros. 50,095

Cheese, Phenix Cheese Co. 50,286

Chilli sauce, tabasco sauce, and salad dressing, Joseph Campbell Company 50,240

Chocolates and confections, R. L. Perry Co. 50,287

Cigars, E. H. Gato Cigar Company 50,088

Cigars, P. B. Watson 50,086

Cigars, W. Boucher 50,088

Cigars, E. H. Gato Cigar Company 50,093

Cigars, J. Weinreich 50,119

Cocktails, George F. Hewett Co. 50,171

Cocunut, desiccated, Citizens' Wholesale Supply Co. 50,251

Coffee, Hulman & Co. 50,236

Coffee, Independence Coffee and Spice Co. 50,299

Corsets, Kabo Corset Company 50,176

Corsets, Royal Weaver Corset Co. 50,187

Cotton cloth buff wheels, Williamsville Manufacturing Company 50,120

Cotton damask, Rosemary Manufacturing Company 50,186

Cotton duck, Hogsenville Manufacturing Company 50,174

Cotton duck, Mount Vernon-Woodberry Cotton Duck Company 50,181

Cotton duck, Mount Vernon-Woodberry Cotton Duck Company 50,182

Cotton piece goods, Catlin & Co. 50,169

Court plaster, liquid substitute for, Douglas Manufacturing Company 50,252

Croustades, F. Beaumont 50,218

Cycle saddles, J. B. Brooks & Co. 50,131

Identifiers, liquid, American Peroxide and Chemical Company 50,250

Disinfectants, liquid, M. E. Platt 50,246

Dyeing preparation, E. C. Foster 50,229

Dyestuff, Cassella Color Company 50,222

Envelopes, Transo-Paper Company 50,165

Fabrics, drapery and upholstery textile, Edgelyte Manufacturing Company 50,192

Fabrics, printed and dyed textile, Edgelyte Manufacturing Company 50,193

Files and rasps, Carver File Company 50,089

Files and rasps, Nicholson File Company 50,135

Files, rasps, and handles and holders therefor, Nicholson File Company 50,137

Fire extinguishing apparatus, automatic, International Sprinkler Co. 50,274

Fish, dried, smoked, pickled, salted, and canned, W. C. Sauter 50,247

Flavoring extracts, Jordan Stabler Co. 50,238

Flour, rye, Beutwell Milling and Grain Co. 50,294

Flour, wheat, Model Milling and Elevator Co. 50,303

Flour, wheat, Purcell Mill and Elevator Co. 50,304

Flour, wheat, Thornton & Chester Milling Co. 50,305

Flour, wheat, Wm. A. Coombs Milling Co. 50,322

Food, blood, nerve, and brain, M. H. Grossman 50,231

Fresco, calcimine, and wall paper cleaner, Climax Cleaner Manufacturing Co. 50,092

Fruits, dried and evaporated, Griffin & Skelley Co. 50,230

Furs for wearing apparel, manufactured, C. G. Gunther's Sons 50,144

Gin, H. R. Myers 50,183

Gin, National Distilling Co. 50,184

Glassware, pressed, A. H. Helsey & Co. 50,121

Gloves and mittens, Joseph N. Elsenrath Co. 50,213

Grease, Kent Lubricating Co. 50,100

Gum, chewing, American Chicle Co. 50,258

Hair restoratives, S. R. Van Duzer 50,254

Hair restorer, S. R. Van Duzer 50,255

Harness, Studebaker Brothers Manufacturing Co. 50,210

Hosiery, J. Blood & Co. 50,143

Hosiery, O'Callaghan & Fedden 50,156

Hosiery, Sheboygan Knitting Co. 50,163

Insulating compound, rubber, Okonite Co. 50,139

Lacing books and lacing studs, Tubular Rivet and Stud Co. 50,214

Lard, Cudahy Packing Co. 50,295

Laxatives, Paracamp 50,253

Leather, sole, S. H. Frank & Co. 50,209

Linen, J. A. Walsh 50,307

Links, sleeve buttons, collar buttons studs, and blouse button sets, Standard Button Co. 50,190

Lye and potash, Eagle Lye Works 50,227

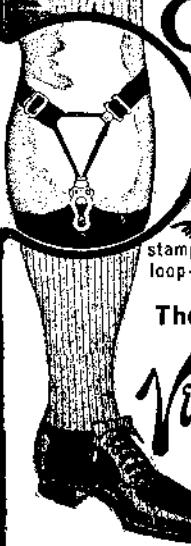
Macaroni, spaghetti, vermicelli, and noodles, Anger Baking Co. 50,217

Magazine, monthly, Review Publishing Co. 50,158

Malt extract, Valentin Blatz Brewing Co. 50,080

Malt extract, Bernheim Distilling Co. 50,087

THE IMPROVED Boston Garter



WORN ALL OVER THE WORLD

REFUSE ALL SUBSTITUTES OFFERED YOU

The Name is stamped on every loop—

The Velvet Grip

CUSHION BUTTON CLASP

Lie Flat to the Leg—
Never Slips, Tears nor Unfastens

Sample pair, Silk 50c., Cotton 25c.
Mailed on receipt of price.

EVERY PAIR WARRANTED

ALWAYS EASY

GEO. FROST CO., Makers
Boston, Mass., U. S. A.

Wonder Electric Lighting Outfit



For the farm, shop, cottage, or private residence.

So simple anyone can operate them. This is the first outfit ever offered for sale at such a price that you cannot afford to be without one. Think of it: only one-tenth of a cent per hour for each 16 C. P. lamp. You can also use engine during the day for other purposes. Lighting outfits from \$110 up. Send for complete catalogue.

THE R. M. CORNWELL CO.
Syracuse, N. Y.
406 South Salina Street
1132 Park Row Building, New York.

NEW YORK SCHOOL OF AUTOMOBILE ENGINEERS

Incorporated
147 West 56th Street, New York City
Under the personal direction of
PROF. CHAS. E. LUCKE, M. E., Ph.D.
School of Engineers, Columbia University

Departments include machine tool and forge shops assembling and test shops, and every type of motor also laboratories completely and specially equipped to teach all component parts of automobiles.

Day and Evening Classes.
SPECIAL COURSES FOR OWNERS.

"A Kalamazoo Direct to You"



You save from 20% to 40% by buying a Kalamazoo Stove or Range direct from the factory at lowest factory prices.

Moreover, you get a stove or range not excelled by any in the world. We guarantee quality under a \$30,000 bank bond.

We Ship On 360 DAYS APPROVAL and We Pay the Freight.

If you do not find the Kalamazoo exactly as represented, the trial does not cost you a cent. It will pay you to investigate.

Send Postal for Catalog No. 346.


All Kalamazoos are shipped promptly, blacked, polished and ready for use.

Kalamazoo Stove Co., Mrs. Kalamazoo, Mich.

All our work shows a dangerous fire-proof patent oven throughout for which we are holding ears.

Over 100,000,000

Don't Waste Time



THE AUTOMATIC TELEPHONE CARD INDEX

can be attached to your phone in a minute. Has enough space for the names of 170 firms, alphabetically arranged in a handsome aluminum case. The cards are quickly removed and are out of sight, except when you want them. Cards plainly indexed. Pull out the letter you want. When through, let go, and it returns to its place automatically. Splendid advertising souvenir to give to customers. Name and business printed on face of case, in quantities. Price 50c., sent postpaid.

AUTOMATIC CARD INDEX CO.
Dept. A.
327-331 Bleecker Street, Utica, N. Y.

Keystone Well Drills



for Artesian and Ordinary Water Wells; Mineral Prospecting and Placer Testing; for Druggists; Deep Drilling for Oil and Gas; Contractor's Blast Hole Drilling, River and Harbor Exploration, etc. Our five catalogues are textbooks in these lines.

KEYSTONE WELL WORKS
Beaver Falls, Pa.

Wayne



This is the Wayne Model "F" a 50 H.P. 7-passenger car at \$3500 built solely for touring purposes. The enormous power of this engine is transmitted to the rear wheels with practically no loss. Hess-Bright ball bearings are used throughout and the man who appreciates the need of reserve power is always sure to find it in Wayne Model "F."

Wayne

PRICE \$800



Model H. Two passenger Runabout doubleopposed motor under hood, cylinders 4 1/2 x 4, developing 14 H. P. Planetary Transmission with DIRECT BEVEL GEAR DRIVE

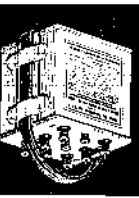
The strong features of this car are the extreme simplicity and accessibility of the engine and transmission. The crank case and transmission case form one casting and the entire engine can be taken apart or assembled in half an hour.

We also make two other high-powered 4-cylinder touring cars—Model "K" 35-Horsepower, \$2500; Model "B" 24-28 Horsepower, \$2000, and Model C, 20 Horsepower, 2-cylinder opposed tonneau car, \$1250.

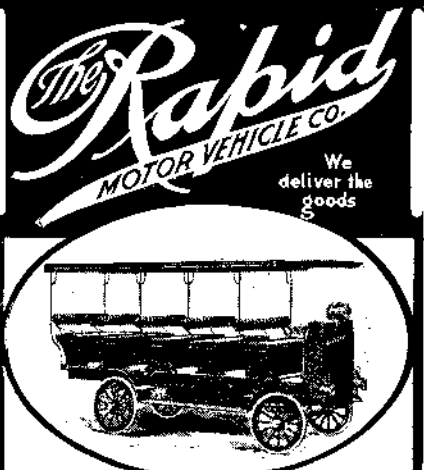
Call at our nearest Agency or write us for full particulars about our cars.

WAYNE AUTOMOBILE COMPANY
Dept. J
DETROIT, MICH.

THE POSTAL TYPEWRITER CO.'S
FACTORY AT NORWALK, CONN.
 is Equipped to do Experimental Work,
 Tool Making and Manufacturing, In-
 ventions Developed. Very Best Work
 Guaranteed. Correspondence Solicited.



HANG IT
 upside down if you like, and it won't spill a
 drop. Of course it's the "GEECEE" Dry
 Storage Battery, which during the recent New
 York Show was used in all the demonstration
 cars of the following firms: O. S. Meter
 Works, Berkshire Automobile, York Auto-
 mobile, etc.
 An ideal battery for all kinds of ignition
 work, small incandescent lights, dental en-
 gines, cauteries, wireless telegraph, small mo-
 tors, etc. Write for '06 Catalog and trade prices.
 Royal Battery Co., 143 Chambers St., N. Y.



**Here is a Car that is Needed
 at Every Club, Hotel or
 Country Place**

Our 20-passenger carry-all will
 be found just the thing as a rapid,
 comfortable and economical way of
 affording transportation to guests
 of clubs, hotels and country places.
 Is also a model conveyance for
 sight-seeing parties, and as a means
 of rapid transit between villages
 and rural communities.

Price \$2,200

**EVERY CAR GUARANTEED
 FOR ONE YEAR**

Wheel base, 111 inches. Fitted
 with full platform springs, 32-inch
 front and 34-inch rear wheels, 4-
 inch solid tires.

The strong double opposed motor
 furnishes ample power for all de-
 sirable speeds and for the heaviest
 loads, with plenty of reserve power
 when needed.

For full particulars address
G. S. HENRY, Sales Manager
Rapid Motor Vehicle Co.
 Pontiac, Mich.

**20 PER CENT. REDUCTION
 IN FUEL CONSUMPTION**
 This is the result of removing the scale from your
 boiler tubes by the **Dean Boiler Tube Cleaner**.

We will loan the cleaner to you so that you may
 demonstrate this fact to yourself.
 Our book, "Boiler Room Economy," tells all
 about scale and the Dean Cleaner. Send for it today.
 Send size of tubes and we will loan you a Cleaner
 for trial.
WM. B. PIERCE & CO.
 819 Washington St., Buffalo, N. Y.

**60 YEARS'
 EXPERIENCE**

PATENTS

**TRADE MARKS
 DESIGNS
 COPYRIGHTS & C.**

Anyone sending a sketch and description on may
 quickly ascertain our opinion free whether an
 invention is probably patentable. Communica-
 tions strictly confidential. **HANDBOOK** on Patents
 sent free. Oldest agency for securing patents.
 Patents taken through Munn & Co. receive
 special notice, without charge, in the

Scientific American.

A handsomely illustrated weekly. Largest cir-
 culation of any scientific journal. Terms, \$3 a
 year; four months, \$1. Sold by all newsdealers.
MUNN & Co., 361 Broadway, New York
 Branch Office, 625 F St., Washington, D. C.

Medicinal preparation, liquid, Henry Heil Chemical Co.	50,270
Medicine for certain named diseases, H. O. Hurley	50,237
Medicine for diphtheria and rheumatism, F. E. Benymann	50,220
Medicine for stopping excessive perspiration	50,219
Metal polish, Hines & Co.	50,076
Milk and evaporated cream, condensed, Adam Roth Grocery Co.	50,257
Mince meat, condensed, Merrell-Soule Co.	50,242
Mineral waters, Selen Vendophone Co.	50,292
Nails, upholsterers', Traut & Hine Manufacturing Co.	50,115
Needles, C. H. Crowley	50,091
Oil, antiseptic healing, Paris Medicine Co.	50,244
Olives, preserved, C. Gulden	50,232
Organs, W. W. Putnam & Co.	50,072
Oreballs, H. W. Carter & Sons	50,145
Packing, flax Dunham, Carrigan & Hayden Co.	50,148
Paper, blotting, Standard Paper Manufacturing Co.	50,159
Paper, sheathing, W. H. Rankin Co.	50,083
Pencils, lead, Eagle Pencil Co.	50,127
Penholders, Eagle Pencil Co.	50,128
Periodicals, A. E. Dunn	50,149
Pistols, Colt's Patent Fire Arms Manufacturing Co.	50,125
Pitch, Warren-Ehret Co.	50,085
Plaster, calcined, C. Tomkins	50,115
Plasters, corn killing, M. R. Kelly & Co.	50,099
Popcorn, Albert Dickinson Co.	50,249
Powder, worm, Dr. Hess & Clark	50,235
Publication, annual, Industrial Press	50,161
Pull sockets, Harvey Hubbell	50,234
Remedies for malarial diseases, Paris Medicine Co.	50,285
Remedies or purifiers, blood, A. L. Filleau	50,228
Remedy for asthma, Tafts Asthmaleine Co.	50,248
Remedy for diabetes, Renal Pharmaceutical Co.	50,289
Remedy for epilepsies, A. K. Madis	50,241
Rheumatic cure, Old Veteran Rheumatic Cure Co.	50,243
Rheumatic cure, Renal Pharmaceutical Co.	50,288
Rubber heels for boots and shoes, P. W. Minor & Son	50,206
Rubber nipples for nursing bottles, Seamless Rubber Co.	50,162
Sheetings, Carey, Bayne & Smith Co.	50,168
Shirts and sheetings, cambrics, and long cloth, G. Willis & Co.	50,309
Shirts, sheetings, cambrics, and long cloth, G. Willis & Co.	50,172
Shoes, men's leather, Hamilton-Brown Shoe Co.	50,150
Silk and mixed cotton and silk piece goods, B. Makover Co.	50,191
Silks and satins, William Skinner Manufacturing Co.	50,198
Soap, pumice, Iowa Soap Co.	50,071
Spices, E. B. Durkee & Co.	50,225
Tablets for the diseases of the entire digestive tract, Illinois Laboratories	50,300
Talking machine records, Victor Talking Machine Co.	50,081
Talking machines and parts thereof, Victor Talking Machine Co.	50,082
Thread, Newtuck Silk Co.	50,194
Threads, cotton, silk, hemp, and other fiber, Singer Manufacturing Co.	50,195
Tobacco, plug, cut plug, and smoking, J. G. Dill	50,098
Toilet cases, W. E. Dishrow	50,126
Tonic, Colburn, Birks & Co.	50,224
Tonic or nutriment, blood, Charles Hammesfabr Co.	50,223
Trees, peach, Sneed & Wood	50,212
Vinegar, spirit, Chas. E. Meyer & Co.	50,262
Vinegar used for pickling, Chas. E. Meyer & Co.	50,261
Violin, guitar, zither, and banjo strings, S. Blumenthal	50,124
Watches, Elgin National Watch Co.	50,094
Whalebone, natural and artificial, D. Hone	50,204
Whiskies, Meadville, Pennsylvania Distilling Co.	50,280
Whisky, United Wine and Trading Co.	50,140
Whisky, Hurley & Co.	50,151
Whisky, I. Michelson & Bros.	50,152
Whisky, H. Kahn	50,153
Whisky, L. & A. Scharf	50,154
Whisky, Weideman Co.	50,154
Whisky, Blumenthal & Biebart	50,167
Whisky, H. W. Huguley Co.	50,173
Whisky, Jesse Moore Hunt Co.	50,175
Whisky, J. & E. Mahoney	50,179
Whisky, Maryland Distilling Co.	50,180
Whisky, P. J. Bewlin Liqueur Co.	50,185
Whisky, S. Grabfelder & Co.	50,189
Whisky, Wm. Bergenthal Co.	50,196
Whisky, William H. Lee & Co.	50,197
Whisky, A. A. Wolf & Co.	50,199
Whisky, Hartman, Goldsmith & Co.	50,203
Whisky, P. W. Hunt & Co.	50,205
Whisky, Mueller, Wathen & Robert	50,207
Whisky, Rock-Spring Distilling Co.	50,208
Whisky, W. P. Squibb & Co.	50,211
Whisky, J. D. Ulrich	50,215
Whisky, J. T. S. Brown & Sons	50,259
Whisky, Dreyfuss, Weil & Co.	50,263
Whisky, M. L. Eppstein	50,264
Whisky, J. & A. Freilberg	50,266
Whisky, H. Graves Sons	50,269
Whisky, P. W. Hunt & Co.	50,271
Whisky, Hurley & Co.	50,273
Whisky, Jas. E. Pepper & Co.	50,275
Whisky, Kaufmann, Baer & Co.	50,276
Whisky, L. Levy & Co.	50,277
Whisky, S. Lieberman	50,278
Whisky, J. A. Magnus & Co.	50,279
Whisky, W. P. Squibb & Co.	50,293
Whisky, I. Trager Co.	50,301
Whisky, McCart Messet Co.	50,302
Whisky, N. M. Uri	50,306
Whisky, D. Wis & Co.	50,322
Whisky, malt, Wichman, Lutgen & Co.	50,308
Whisky, rye, Henry B. Gilpin Co.	50,298
Wine, Italian Swiss Colony	50,096
Wine, P. J. Bewlin Liqueur Co.	50,097
Wine, Henry Block Co.	50,101
Wine, fruit, L. Rosenzweig	50,268
Woolen cloths, American Woolen Co.	50,102
Yarns of all descriptions, Wm. H. Horstmann Co.	50,216
Yeast powder, Rumford Chemical Works	50,290

LABELS

"Ballard's Hele-Rosa," for a preparation for the cure of sandruff, A. Ballard	12,699
"Bohemian," for beer, Milwaukee Lithographing Co.	12,693
"Brainalgine," for medicine, F. E. Smith	12,697
"Century Maidens," for cigars, J. F. O'Donnell	12,695
"Comparte," for sponges, A. Moses Sons & Co.	12,700
"Denol," for tablets, T. A. Allen	12,698
"Malt Juice," for malt juice, C. H. von Klein	12,694
"Radium-I-See," for medicine, Wolverton's N. Y. Co.	12,696

PRINTS.

"A A Dentifrice Cream," for a dentifrice, Atlanta Antiseptic Co.	1,589
"Imperial Hats for 1906," for hats, Samuel Munchheim Co.	1,587
"Men's Apparel," for men's apparel, W. C. Both	1,588
"Star Enamel and Sapelin Varnish Stain," for enamel and varnish, Gerstendorfer Bros.	1,591
"Wrapper for Playing Cards," for playing cards, Willis W. Russell Card Co.	1,590

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1863, will be furnished from this office for 10 cents, provided the name and number of the patent desired and the date be given. Address Munn & Co., 361 Broadway, New York.

Canadian patents may now be obtained by the inventors for any of the inventions named in the foregoing list. For terms and further particulars address Munn & Co., 361 Broadway, New York.

Sy-Clo
 TRADE MARK

**The Latest Word
 In Sanitation**

The name Sy-Clo on a closet means health insurance for your home or any building in which the closet is placed; it means freedom from all those diseases which are usually traceable to noxious odors and poisonous gases arising from ordinary closets.

Sy-Clo stands for more than mere flushing; it stands for a wonderful syphonic action of great power—an action which literally pulls the contents of the bowl into the drain, cleansing the non-reachable parts, instantly sealing the outlet channel with a water trap to an unusual depth, and absolutely preventing all danger of gas.

The Sy-Clo Closet stands for an interior cleanliness and purity impossible in an iron closet, and unknown in any closet but one made of china—like the Sy-Clo. Hand-moulded of china all into one solid piece like a vase, the Sy-Clo is without crack, joint or rough surface to collect dirt or disease germs. It is as clean inside and out as a china pitcher, being made exactly the same way and of the same material.

The surface of the Sy-Clo Closet cannot chip off, is not affected by acid, water or wear, and hence cannot rust or discolor as an iron closet does. The Sy-Clo is strong, simple, durable; it cannot get out of order and will last, with ordinary care, as long as the house in which it is placed.

It costs but little more than the common closet, and when health and comfort are considered, it really costs less; in fact, *your doctor pays the bill.* Your plumber will tell you that Sy-Clo is absolutely the latest word in perfect sanitation.

Send for booklet on "Household Health"—mailed free.

POTTERIES SELLING CO.,
 Trenton, N. J.

Manufacturers

PERHAPS your factory would find better operating conditions and a market not so sharply competitive in the Santa Fe Southwest.

If you are desirous of investigating this field we will be glad to assist you, and correspondence is invited.

WESLEY MERRITT
 Industrial Commissioner
 Santa Fe System
 Railway Exchange, Chicago

FOREIGN PATENTS FOR SALE
ABRAHAM END GATE FASTENER
 can be fastened instantly. More rigid than a rod. Farmers everywhere buy as soon as they see it. Canada, Mexico, England, France, Belgium and Germany rights for sale. Write for particulars **ADOLPH ABRAHAM, Patentee, Corby Bldg., St. Joseph, Mo.**

STEEL TYPEWRITER TYPE
 We make, or will furnish complete outfit for making all styles. **NEW YORK STENCIL WORKS, 100 Nassau Street, New York.**

Multipolar Dynamo or Motor. Will light three 110 v. lamps, 1/2 H. P., complete set castings and all necessary stock, rough or finished. Price \$6.00. All kinds of special apparatus built for amateurs, inventors, and experimenters. Light manufacturing. Everything electrical in any quantity. Send for our second-hand bargain list and catalog. **T. BINFORD ELECTRIC WORKS, 26 Clarkson Court, Chicago, Ill.**

Dies, Tools, Models and Special Machinery. Made to order and guaranteed. **HOEFT & MOORE, Chicago, U. S. A.** OFFICE: 509 FIFTH AVENUE. WORKS: INDIANA 17th and 18th STS.

BE A WATCHMAKER
 Send for our free book, How to be a Watchmaker. Stone School of Watchmaking, 904 Globe Bldg., St. Paul, Minn.

MODELS & GEARS INVENTIONS PERFECTED UNION MODEL WORKS 193 50 CLARK ST. CHICAGO.

A PAINTING AND WHITENING MACHINE
Does the Work of 20 Men
 with brushes, and does it better. Send for catalogue No. 10, which is free. **J. A. DEL SOLAR, 108 Fulton St., New York, N. Y.**

Signs, Boxes, Souvenirs & Novelties
 of Aluminum in any number, style or design; Lithographed metal signs, boxes, jars, etc. Enamelled iron signs of all colors. Designs, estimates and catalogue. **S. J. Aluminum Co., 150 Nassau St., N. Y.** H. M. Willis, Mgr.

LET US BE YOUR FACTORY
 WRITE FOR ESTIMATE ON ANY ARTICLE YOU WANT MANUFACTURED
STAMPINGS, MODELS, EXPER. WORK
 WRITE FOR FREE BOOKLET
THE GLOBE MACHINE & STAMPING CO.
 970 Hamilton St., Cleveland, O.

MACHINERY AND SPECIAL PARTS
 BUILT ON CONTRACT
 new devices developed; successful experimental work done speedily; skilled labor; good facilities; good value for your money.
J. R. ENGELMAN MFG. CO.
 74 Hudson St. near Penn. Depot, Jersey City

ICE MACHINES Corliss Engine, Brewers and Bottlers' Machinery. **THE VILTER MFG. CO., 899 Clinton St., Milwaukee, Wis.**

MODELS & EXPERIMENTAL WORK. Inventions developed. Special Machinery. **E. V. BAILLARD, 24 Frankfort Street, New York.**

RUBBER Expert Manufacturers Fine Jobbing Work
PARKER, STEARNS & CO., 228-229 South Street, New York

MODELS & CHICAGO MODEL WORKS ESTABLISHED 1867 179 E. MADISON ST. CHICAGO, ILL. WRITE FOR CATALOGUE OF MODEL SUPPLIES

Models & Exper. Work, Gears, Dies, Tools, Small Machy. Scient. Insts. **M. P. Schell, 506 Mission St., San Francisco**

MODEL AND EXPERIMENTAL WORK. Electrical and Mechanical Instruments. Small Mach'y **EDWARD KLEINSCHMIDT, 82 W. Broadway, New York**

**How To Increase
 Your Business**

READ carefully, every week, the **Business and Personal Wants** column in the **Scientific American**

This week it will be found on page 237.

Some week you will be likely to find an inquiry for something that you manufacture or deal in. A prompt reply may bring an order.

Watch it Carefully