

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING.—Hiram D. Layman, Little Rock, Ark. The coupling pin in this device has a trip extension, there being a latch for securing the pin in coupled position, while the link has a shaft keyed to it, with other novel features, the device obviating the necessity of brakemen going between cars, while it may be used to couple to an ordinary drawhead, or to receive the common link held in an ordinary drawhead.

CAR COUPLING.—Henry Gallager, Savannah, Ga. This invention relates to that class of devices known as "twin jaw" couplers, and is designed to be automatic in some of its operations, and to consist of a minimum number of simple parts.

AUTOMATIC AIR BRAKE.—George B. Williams, Portland, Oregon. This invention consists principally of a direct closed passage leading from the train pipe to the brake cylinder and adapted to be forced open by the train pipe pressure exerted on an auxiliary piston during emergency applications of the brakes, and to be thus held open so long as the pressure on the inner side of the auxiliary piston exceeds the pressure on its outer side.

Mechanical.

FINISHING EMERY WHEELS.—Fredrick Kohle, Dayton, Ohio. This invention covers a method of finishing emery-coated wheels by applying a coating of glue and emery to the peripheral face of the wheel, and then revolving the wheel in contact with a heated cylinder, whereby the emery and glue are evenly spread and quickly dried.

MILLSTONE PICK.—Jacob W. Truax, Essex Junction, Vt. This is an improved article of manufacture, in which the head of the pick is formed with integral semi-elliptical jaws at its opposite ends, the rear walls of the oval openings forming abutments for the blades, making a simple and economical tool in which the blades may be conveniently inserted or removed.

LUBRICATING DEVICE.—J. A. McDowell-Guajardo, Philadelphia, Pa. This is a device for lubricating the top and bottom rollers of spinning, slubbing, and drawing frames, in such way that the covers of the rollers are protected from being soiled by the lubricant, thereby adding to their durability and promoting economy in the work.

Agricultural.

CORN PLANTER.—John K. Thompson, Arkansas City, Kansas. This machine consists of a novel construction and combination of parts providing means whereby the seed may be dropped from either box, or from both at the same time, and also for hilling the corn simultaneously with the planting, and in such manner that the hills will be fully and plainly visible.

Miscellaneous.

HEATING DRUM.—Genisa Ott, Scotia, Neb. This is a device to be applied to the pipe of an ordinary stove to utilize the heat, the heating drum consisting of an outer and an inner cylindrical casing, with a spiral flange between the two, with a damper and a disk door, whereby the hot currents are caused to pass through the drum by a long or short route.

STORE SERVICE APPARATUS.—Edward A. Rorke, Brooklyn, N. Y. This invention provides a means for transferring a carrier from a dispatch track to a return track where the ends of the tracks are in different vertical and horizontal planes, a switching track being employed adapted to be moved vertically and also horizontally, making a combined elevator and switch track.

WIRE AND PICKET FENCE MACHINE.—James Kelley, Richmond, Ind. This is a machine designed to automatically feed the picket between the wires, twisting the same in reverse direction at each edge of the picket, and feed the same forward, and embraces various novel features whereby the movement of the machine may be continuous, and will require the service of only one man or boy to run it.

WAY BILL.—Edward P. Campbell, New York City. This is a form designed to substitute all local and through way bills, and all local and joint manifests or invoices, obviating the necessity of re-billing, etc., at the junction points of the various roads or lines over which it passes, and thus facilitating accounting and auditing.

PRINTING TELEGRAPH.—George B. Scott, Lakewood, N. J. This printing telegraph is provided with a ratchet wheel and pawl arranged to be actuated by a magnet placed in the main circuit, or one of the magnets commonly used in printing telegraphs, the ratchet wheel being connected through the medium of a spring with the type wheel shaft, which is thus propelled by power derived from the impulses sent over the line.

SECTIONAL COAL TRUCK.—George A. Thompson and Daniel E. Harris, Brooklyn, N. Y. This is a truck or cart having tracks on its bottom and skids hinged to one end, which may be inclined and serve as track continuations, in combination with bins having each wheels that rest on the tracks, a folding tongue, a hopper bottom, and a sliding discharge gate.

GRAIN HULLER AND SCOURER.—Job Short, St. Louis, Mo. This is a machine in which the grain passes through and is hulled in an upper cylinder, passing thence to a lower cylinder, where roughened disks with teeth operate to complete its cleaning, which is finished by a spiral steel brush which conveys it to the final discharge pipe.

SPOOL HOLDER.—Silas G. Knight, St. John, Newfoundland. This is a rectangular bracket frame bent from a single piece of wire, in combination with a stiffening guard plate and a spring-securing pin, forming a simple and convenient device whereby spools

may be supported and attached to the dress of the operator at any desired point.

COLLAR AND CUFF DRIER.—John G. Dixon, New York City. This invention covers an apparatus designed to bring currents of hot air in contact with the articles, so that no portion of the heated air will escape without bearing its proportion of moisture, and also to facilitate the handling of the goods, and the dampening of them preparatory to the ironing.

DRAUGHTING PATTERNS FOR GARMENTS.—Eugene E. O'Halloran, Waipawa, New Zealand. This is an apparatus to enable tailors to quickly produce in various shapes and dimensions patterns of suits in various sizes, and consists of a rectangular frame with slotted and graduated side bars, and adjustably secured graduated cross bars, an angular shaped diagonally arranged shoulder, with other novel features.

BODY VENTILATOR.—Joseph E. Butts, Hawthorn, Fla. This is an elastic support designed to be fitted to the body, and a half-rigid skeleton frame in jacket shape, connected by stays held from the support, whereby an air space is formed between the clothes and the body of the wearer, to keep the body at a proper temperature when subject to exposure in warm weather.

SHOE UPPER.—Vincenzo Andretta, New York City. This invention consists of a boot or shoe having its entire upper and tongue piece made without seam, and of one piece of leather, on a specially devised last having a tapering groove or depression from its upper part down to near the instep, with projecting flanges on opposite sides, whereby the front portion of the material will be formed into an expanding and contracting tongue.

TIE PLATE FOR BRUSH FILLINGS.—Samuel K. Hawkins, Elmira, N. Y. This is a plate designed to effectually tie the ends of the brush filling in position and permit the lower extremity of the filling to project outward beyond the perpendicular frame of the end of the brush, the plate being of novel construction.

PENCIL SHARPENER.—Walter J. Gill, Boston, Mass. Combined with a stock having a pencil rest or table on its top surface, is a roughened tablet and a chip-receiving box, with a detachable handle and a cutting blade so attached to the handle as to be adapted to shave a pencil point tapering by successive shearing cuts.

BOTTLE STOPPER.—Otto Eick, Philadelphia, Pa. This is a hinged cap through which passes a bolt supporting a flexible block on the under side of the cap, a cam lever being held on top of the cap and engaging the bolt to raise or lower it, to compress the flexible block on the under side of the cap in the mouth of the bottle.

GAME.—Philip Bosche, Cortland, N. Y. This invention provides a toy base ball field by the manipulation of which a ball, block, or cube representing a player may be made to travel in accordance with certain rules around the field, or sometimes a globe of mercury and a single ball are employed in playing the game.

NEW BOOKS AND PUBLICATIONS.

OFFICIAL REPORTS OF VARIOUS DUTY TRIALS OF THE GASKILL PUMPING ENGINES. Holly Manufacturing Co., Lockport, N. Y. Buffalo, N. Y.: The Courier Company. 1890. Pp. 229.

We have already had occasion to notice the Gaskill pumping engine, the successor to the Holly engine. Illustrations of the engine, with tables of tests made upon it as running in different water works, are here given, showing its very high efficiency and the large amount of duty credited to it.

THE ELEMENTS OF MACHINE DESIGN. Part I. General principles, fastenings, and transmissive machinery. By W. Cawthorne Unwin. New edition, revised and enlarged. London: Longmans, Green & Co. New York: 1890. Pp. xvi, 459.

The subject of this book, as treated in its pages, is given in great detail to mathematical analyses, graphical development and mechanical and perspective drawing being called upon for its illustrations. It can safely be recommended to those desiring to bring out the highest class of machinery under the best auspices, as to the proper proportion of parts and shapes.

THE ART OF PAPER MAKING. A practical handbook of the manufacture of paper from rags, esparto, straw, and other fibrous materials. By Alexander Watt. London: Crosby Lockwood & Son. 1890. Pp. xi, 260.

The well known author of other works on technology here gives his attention to the manufacture of paper. While it is treated largely from an English standpoint, yet it is brought well abreast of modern practice, and its many illustrations, extensive table of contents, and index make it of value to all progressive paper makers. Several useful tables and a bibliography are included.

RAILROAD ENGINEER'S FIELD BOOK AND EXPLORER'S GUIDE. By H. C. Godwin. New York: John Wiley & Sons. 1890. Pp. xii, 358.

The type of book of which this is an example is well represented by it. The author describes it as his aim to supply a real want, viz., that of a field book which can be carried on the ground for reference at any time. He seems to have carried out his design very well, and by the addition of the necessary tables has made it a work that will be very useful for reference in road surveying.

SEMITIC PHILOSOPHY. Showing the ultimate social and scientific outcome of original Christianity in its conflict with surviving ancient heathenism. By Philip C. Friese. Chicago: S. C. Griggs & Company. 1890. Pp. 247.

PRACTICAL ELECTRICAL NOTES AND DEFINITIONS, FOR THE USE OF ENGINEERING STUDENTS AND PRACTICAL MEN. By W. Perren Maycock, associate member of the Institute of Electrical Engineers, instructor of electrical engineering at the Pitlake Institute, Croydon. Together with the rules and regulations to be observed in electrical installation work, as issued by the Institution of Electrical Engineers and the Phoenix Fire Office. With diagrams. E. & F. N. Spon, London and New York. 1889. Pp. 130. Price 60 cents.

LA SOIE AU POINT DE VUE SCIENTIFIQUE ET INDUSTRIEL. By Leo Vignon. Paris: Librairie J. B. Bailliere et Fils. 1890. Pp. 360.

The entire subject of silk treatment from the cocoon to the finished fabric is reviewed, and numerous illustrations, tables, and statistics give a peculiar value to the work as a standard. It will be recognized as a very able and valuable contribution to the art of silk raising.

A MANUAL OF PHARMACEUTICAL TESTING FOR THE MAN OF BUSINESS AND HIS ASSISTANTS. By Barnard S. Proctor. Published at the offices of the *Chemist and Druggist*, London, and at Melbourne and Sydney. 1890. Pp. vii, 176.

The principal tests required in the pharmacy for the man of business and his assistant, to take the working of the title, are clearly given here by the author. Pharmacists as a rule are somewhat empirical in anything approaching analytical work, but the tests here given represent, very satisfactorily, the class of work required in daily practice.

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The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4: Munn & Co., publishers, 361 Broadway, N. Y.

Britten's "Watch and Clockmakers' Handbook, Dictionary, and Guide." Seventh edition. Copiously illustrated. 436 pages. \$2.00. E. & F. N. Spon, 12 Cortlandt St., New York.

The valuable patent on umbrella folding table, illustrated on page 51, is for sale. Patent issued July 29, 1890. For particulars address A. J. Delavigne, 119 Barracks St., New Orleans, La.

A business man who has visited nearly every town in the United States desires an agency for manufacturers or others having goods or machinery for sale. References. Address W. Y., box 132, Cheshire, Conn.

To make artistic pictures, read "Naturalistic Photography for Students of the Art." By P. H. Emerson. Second edition. 313 pages. \$2.00. E. & F. N. Spon, 12 Cortlandt St., New York.

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Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information, and not for publication. References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and though we endeavor to reply to all, either by letter or in this department, each must take his turn. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price. Minerals sent for examination should be distinctly marked or labeled.

(2330) J. E. C. asks: Is there any paint that will stand soap and water, to be used for advertising on window glass? A. Good linseed oil and white lead give a basis for a paint that will stand. Any paint will gradually succumb to the friction and rubbing incidental to washing. Use care in cleaning the glass.

(2331) D. & G. write: We have made a dynamo as per instructions in SUPPLEMENT, No. 600, and wish to ask the following questions: 1. In Fig 1 (perspective view) the field magnet wires are numbered. Is No. 1, on leg A, the outside end of the first coil wound? No. 2, the second, and so on? A. Yes. 2. Is No. 8 on leg B the outside end of first coil? No. 7 the second coil wound, and so on? A. Leg B is wound in the same manner as leg A, 1 being the first coil, 2 the second, and so on. 3. On page 9588, lower part of right hand column, it reads (to connect as shunt): "Terminal 1 of leg A is connected with one of the commutator brushes, 2 is connected with 5, 3 with 6, and 4 with 7;" does this mean that all the above numbers are on leg A? A. Yes. 4. Resistance must be placed between one of the terminals of magnet and the commutator brush. Does this mean to place it between one of the rods that run to top of field magnets and the brush to which it connects? A. This resistance may be inserted in any part of the field magnet circuit. 5. Will the machine run as well in either direction connected as a shunt machine, provided the brushes are arranged to run in such direction? A. Yes; provided suitable switches are furnished for changing the current.

(2332) W. F. O. asks for a recipe for making mahogany stain, something that could be applied to wood without graining. A. Use a decoction of logwood, 2 ounces to the pint of water, containing $\frac{1}{4}$ ounce chloride of barium.