

RECENTLY PATENTED INVENTIONS.

Electrical Devices.

PROTECTIVE DEVICE FOR THIRD RAILS.

—J. RYAN and A. C. GUNTZER, New York, N. Y. The purpose of the invention is to provide a cover or protective casing for the third rail of electric road, which will prevent persons from accidentally coming in engagement with the rail, the cover being so constructed as not to interfere with the action of the shoe. The invention provides a casing readily applied and so constructed that access can be gained to the rail at any time in an expeditious and convenient manner without removing the cover from its protective relation to the rail.

SUPPORT FOR TELEPHONE-RECEIVERS.

—F. F. HOWE, Marietta, Ohio. This invention is an improvement in telephone-receiver supports, and has for an object the provision of a novel construction for supporting the receiver so constructed that when the receiver is released after being used it will operate automatically to close the switch of the telephone and cut out the receiver.

TRACK-SWITCH FOR ELECTRIC RAILWAYS.

—G. H. FREETS, Springfield, Mass. The invention relates to electric-railway switches. Mr. Freets' more particular object being to produce a type of switch which may be advantageously controlled from a moving car. Where a part of the current is used for auxiliary purposes—such as lights, heating, and air-brakes—he makes the magnet-wire heavy, so that the magnet is not affected by the current used for these auxiliary purposes.

Of Interest to Farmers.

WINDMILL-REGULATOR.—T. A. OVERBY

and J. G. OVERBY, near Mellette, S. D. The objects of these inventors are to provide means whereby the mill is automatically started when the water in the tank is lowered and stopped when enough is pumped in, and requiring but small floats; means to automatically stop a mill when the well gets empty and start when water in the well rises to a predetermined level; means to stop action of pump-rod lever when mill is in action; means to put pawls into engagement instantly; means to put mill in or out of gear by hand and hold it so; to provide efficient regulator without springs; and means to keep the mill wire from getting tangled when a violent breeze turns the vane around and slackens the wire, etc.

HAY-STACKER.—L. OBERWETTER, Gordon,

Neb. One purpose of this invention is to provide a form of stacker so constructed that the fork is counterbalanced by means of a weight which assists in raising the fork and prevents a too violent return of the fork to receiving or normal position and to so mount the pivoted supports for the fork that when the fork is brought to its full upper position it will yet be at one side of the perpendicular, inclining sufficiently from the stack to give the fork an automatic downward impulse in direction of its initial position.

COTTON-PICKER.—M. E. LEHMANN, Baton

Rouge, La. In this patent the invention relates to a pneumatic cotton-picker; and it comprises certain novel devices for drawing the cotton from the plants and for automatically separating the cotton from the dead leaves and other foreign matter removed from the plants with the cotton.

COTTON-HARVESTER.—R. H. PURNELL,

Roseale, Miss. A principal feature of the machine is the provision of a cutter for severing the stalks and the arrangement of the same upon a vertically-adjustable support and carrier and the special means for effecting the vertical adjustment of the same, which corresponds to the inclination of the surface of the cotton-field or the height of the cotton-ridge relative to the adjacent surface, and also to any obstructions or obstacles, such as stumps or rocks. A dynamo is used for effecting the operation of the stalk-cutting device.

Of General Interest.

BLOTTER ATTACHMENT.—J. W. GRAEME,

United States Navy, Washington, D. C. This blotter attachment is used in connection with books, and the inventor does not desire to be limited strictly to permanently-bound books or books in which the leaves are permanently held in place, but he desires to include in such term "book" pads, tablets, and the like, including check-books for bank use, which are provided with leaves and with backs or covers.

CAN.—L. C. SHARP, Omaha, Neb. In this

patent the invention has reference to what is commonly called a "key-opener" can, and the improvement is especially adapted to that class of cans which are drawn or stamped up from two integral sections of sheet metal joined by a horizontal medial line, although it may be used in other connections.

SHOE-TONGUE RETAINER.—W. J. ANDREWS,

Murphysboro, Ill. The invention relates to footwear; and its object is to provide a retainer for securely holding the tongue of the shoe in proper position on the fly when the shoe is worn to prevent sand, gravel and the like from passing into the shoe, the retainer also serving as identification means of the wearer.

PAINT AND PROCESS OF PRODUCING SAME.—R. WARNOCK, Westboro, Mo. The

invention relates to paint compositions, it being particularly adapted for the coating of

trees to prevent access of animals and insects. To this end the improvement consists in the compounding of tar, oil, carbolic acid, and asafetida in certain proportions. It is a preventive against ravages of rabbits, mice, and borers, and such insects as canker-worms will not climb the trunks to which it is applied. It is impervious to water, and does not evaporate.

RACK.—J. H. VARTY, Albion, Mich. Mr.

Varty's invention relates to racks for various articles, its principal objects being to provide such a device which may be inexpensively made and which will furnish a convenient support for a penholder or other writing utensil. Its base is provided with means for creating a field of magnetic force, consisting of a horse-shoe-magnet attached near one end of the base and concealed by a representation of an ink bottle, though any article may be substituted, this being particularly designed as an advertising device. The low cost at which the rack may be made and its great convenience renders it an attractive advertising novelty for gratuitous distribution.

INFANT'S GARMENT.—LIDA C. SHERICK,

Lemongrove, Cal. The purpose in this case is to provide a garment adapted either as a slumber-robe or a robe to be worn when desired to especially protect the infant against cold or inclement weather, the robe being so constructed as to completely protect or incase the lower limbs, yet leave them free for motion, and likewise to fully protect the body, especially the chest, without rendering the robe bulky or interfering with the action of the arms.

CIGARETTE-TIP.—H. P. STRAUSS and L.

KEHLMANN, New York, N. Y. In the present patent the invention has reference to cigarettes, the more particular object being to produce an improved tip thereby having sanitary and other advantages and being useful for purposes of advertising independently of the usual office performed by the tip. The tip is made long in order to provide the space occupied by graphic symbols.

CONSTANT-LEVEL GAS-METER.—J. R. DUPOY,

36 Rue Guersant, Paris, France. This apparatus automatically maintains a constant level of the water in a gas-meter. It employs buckets mounted upon the exterior of the drum for successively taking up a certain quantity of gas at each revolution of the drum, a chamber in which the gas thus taken up is accumulated, and a reserve water-compartment communicating with the gas-chamber by tubes. The pressure of gas stored in the chamber will produce at intervals a mechanical flow into the drum-casing of the water which during the preceding period of accumulation has entered the tubes.

CENTERING DEVICE FOR CHEESE-

CUTTERS.—M. B. IRVINE, Longbeach, Cal. This improvement refers to a device for cutters of the type in which cheese is mounted on a revolving table and is cut by means of a knife supported upon a framework above the table. The object is to provide a device by means of which cheeses may be so centered relatively to the revolving tables of cutters that the center of gravity of the cheese will always be directly above the center about which the table turns, and hence insure proper weight in the slices cut from the cheese.

CORSET.—ELIZABETH CALKINS, St. Joseph,

Mo. The intention of this improvement is to obviate the difficulty usually experienced in having objectionable knots at the waist-line, which interfere with the proper adjustment of the outer garments. The invention is further intended to provide such a construction that the ends of the laces will be independent of each other and at the same time be in a convenient position for tightening or loosening and tying the same.

PYROTECHNIC DEVICE.—F. T. BECK,

New York, N. Y. In this case the invention relates to improvements in devices for displaying pyrotechnic or luminous objects, an object being to provide a simple mechanical means whereby a plurality of luminous or burning devices may be rapidly rotated and caused to spread apart by centrifugal action to present practically continuous lines of fire.

SIPHON.—P. MCGRATH, Hibbing, Minn. Mr.

McGrath's invention relates to an improvement in siphons, and has for its object the provision of a simple and efficient device for withdrawing liquids from vessels having no faucets or other outlets. It comprises a simple means for expelling the air from the siphon by compressing a bulb connected therewith, also a simple device for closing the nozzle of the siphon while the air therein is being exhausted.

Hardware and Tools.

NUT-LOCK.—C. D. CAMPBELL, Marr, Ohio.

The object in this invention is to provide a nut-lock of novel construction that may be applied upon any nut to hold it stationary at a desired point on a screw-threaded bolt, avoiding the nut or bolt, be adapted for release, if this be desired, and be extremely simple, durable, and inexpensive.

DOOR-CHECK.—C. ELLINGEN, Santa Bar-

bara, Cal. The invention is an improvement in that class of devices employed for holding swinging doors open. It is more particularly an improvement in devices which are adapted to engage the knob of a door-latch. A distinguishing feature is a fixed catch and a door-

knob which are constructively so related to each other that when the door swings open the knob is automatically engaged with and locked by the catch and which may be released by turning it a part of a complete rotation.

Household Utilities.

WINDOW-SASH.—S. E. ROE, New York,

N. Y. The object of the invention is the provision of improved means for mounting sashes so that they may be readily swung into open position and so that when closed they will make an absolutely air-tight connection. A further object is to provide means by which the sash when closed will be held securely in this position and will not be allowed to open except by the application of a positive pressure on the sash, thus avoiding accidental opening thereof.

WATER-CLOSET SEAT.—M. D. HELFRICH,

Evansville, Ind. The improvement relates, specifically, to the construction of water-closet seats and lids, etc., by laying a bolt or rod with nuts and washers at both ends square across the front end and rear end of seat and lid, so as to lap two or more joints with each bolt or rod and laying square across the grain of the wood and joints, which enables the inventor to make a seat and lid showing the grain or end wood entirely at front and rear end of seat and lid.

FOLDING-CHAIR.—J. H. STIGGLEMAN, Wa-

bash, Ind. The object of the improvement is to provide a connecting bearing member adapted for pivotal connection with one leg of a folding chair and having a projecting flange adapted for engagement with a longitudinally-disposed slot in the adjacent crossed leg of the chair to permit the folding of the chair into a minimum of space and to permit the use of straight short legs connected near their lower ends with an ordinary round or reach.

CURTAIN-POLE.—J. KRODER, New York, N.

Y. In this patent the invention relates to curtain-rods, curtain-poles, and similar fixtures; and the object of the inventor is the provision of new and improved means for removably fastening knobs, balls, or like end ornaments in position on the ends of a tube, pole, or similar fixture.

Machines and Mechanical Devices.

AMUSEMENT APPARATUS.—F. W. THOMPSON,

New York, N. Y. This invention relates particularly to improvements in passage-ways through which people may walk, an object being to provide a device of this character so constructed as to have a vibratory motion in part, thus making it somewhat difficult for a person to walk through and affording amusement.

CIGAR-BUNCH-SHAPING MACHINE.—J. D. LACROIX,

New Orleans, La. The aim of this improvement is to provide a shaping machine designed either for independent use or for use in connection with a cigar and cheroot bunch making or rolling machine and arranged for uniformly and properly shaping, forming, setting, and drying bunches in large quantities in a short time, giving a perfectly smooth surface to the bunches and without danger of breaking or injuring the binder, to facilitate wrapping by hand or machine, and to insure final production of a high-grade cigar or cheroot.

SHUTTLE-BINDER.—H. B. BECKMAN,

Newburg, N. Y. Mr. Beckman has discovered that by making the shuttle-binder in such a manner that a part of the operating-surface is capable of yielding and another part rigid he can produce a device which is much lighter than the metal binders heretofore used and is also much more durable than wooden ones. This result he preferably accomplishes by making the binder in the form of a sort of skeleton frame consisting of two parts, one of which is straight and the other of which is curved and longer than the other. The invention relates to a shuttle-binder for looms.

CONVEYER FOR SOLID MATERIALS.—A. L. PUTNAM,

New York, N. Y. The inventor's object is to provide for forcing such material as coal, grain, bricks, and small blocks of material of a general character through a pipe or duct to some predetermined spot. It is to be used to do the work for which chain-and-bucket or belt conveyers are now employed. The invention comprises one or more movable receptacles adapted to convey material to a discharge-duct and force it into the duct successively from the receptacles.

THREAD-SEPARATOR.—E. C. REITER,

Rockville, Conn. Mr. Reiter's invention has reference to thread-separators and admits of general use, but is of peculiar service in quilting-machines and analogous devices in which it is desirable to separate a number of threads from each other and to maintain the separation.

PLASTIC-BLOCK MACHINE.—A. EVEN-

STAD, Lakota, N. D. While capable of use for molding various articles, this machine is especially adapted for molding hollow building-blocks. The objects of the invention are to secure the ready and accurate opening of the mold by a simple operation, at the same time providing for entirely removing the mold from the article produced, and also providing a very simple and easy manner of constructing the bottom plates and guiding the cores.

WEIGHT-INDICATOR FOR WEIGHING-

SCALES.—D. F. CURTIN, Butte, Mont. Mr.

Curtin's invention is in the nature of a simple attachment for scales for the use of grocers and others, which shall give notice when the approximate quantity of merchandise has been placed on the scales, so that the further addition of material to bring it up to the required quantity may be carefully regulated to avoid getting an overplus of material on the scales.

FILLING-MACHINE.—T. J. BROUGH, Balti-

more, Md. In packaging granulated and pulverulent substances—such as tea, flour, and sulphur—and also in bottling liquids which are sticky and thick much difficulty is experienced owing to the material becoming packed or sticking in the hopper, so that it fails to deliver with sufficient freedom and rapidity. The inventor has devised an improved and highly-efficient means for agitating the material and causing it to flow from the hopper with due freedom, rapidity and uniformity.

Pertaining to Vehicles.

DRAFT-EQUALIZER.—C. WERNICKE, Gen-

esee, Idaho. The object of the inventor is to provide an equalizer which is adjustable in its parts, whereby four draft-animals will be permitted to work abreast—one in the furrow and the others on the firm soil at the land side of the plow. Furthermore to provide details of construction for an equalizer which permit the use of three or five draft-animals working abreast, keep them spaced apart, and prevent side pull on the plow or draft device.

AXLE-NUT.—B. G. BUTLER, Sumter, S. C.

The invention refers to axle-nuts such as used for retaining the wheels of vehicles upon the axles. The object is to produce a nut adapted to carry a quantity of oil or lubricant and provided with efficient means for supplying the rubbing surfaces with the lubricant. Arrangement is made for preventing waste of the lubricant and for facilitating replenishing of the same.

SUPPORT FOR VEHICLE-TOPS.—F. F. HEISELMANN,

Hydepark, Ohio. The objects in this case are to provide details of construction for supporting-posts of a canopy which facilitate the vertical erection of the posts, permit their vertical adjustment, enable the attachment thereto of the canopy in a horizontal position, and furthermore, provide means for an attachment of side curtains upon the posts near their upper ends to permit lapping and securing of side curtains upon side edges of rear curtain, thus reinforcing the corners of these curtains where they engage, so as to strengthen them and more effectually exclude the elements during stormy weather.

APPARATUS FOR APPLYING OUTSIDE

RUBBER TIRES.—C. ANDREVERT, 2 Rue du Bac, Ivry Port, Seine, France. The placing in position on wheels of vehicles of the outer covers and air-tubes of pneumatic tires, and particularly those having considerable diameter and size, is very difficult and requires relatively great force. Application of the outer cover to the rim is easily effected for about two-thirds of the circumference of rim, but very difficult to cause the remaining third to pass within the edge of the rim, within which the thickened edge or wire is lodged. The apparatus enables this inconvenience to be obviated and the outer cover to be placed in position on the rim without trouble and excessive strain. The apparatus is applicable to facilitate the placing in position on the rim of either a new or old outer cover.

Prime Movers and Their Accessories.

BOAT-PROPELLER.—J. SALOM, New York,

N. Y. This invention refers to a device for propelling boats and other relatively small marine vessels by either manual or engine power; and the principal feature lies in an arrangement which enables the device to be easily and quickly applied to or removed from the transom of a boat. This adapts the mechanism particularly to boats to be frequently launched, and the principal advantage is that when the boat is hauled up on shore or in the davits of a vessel the propelling device may be removed from the transom and stowed safely away.

CURRENT-MOTOR.—W. NIEMEYER, St. Jo-

seph, Mo. This invention refers to a motor for use upon rivers and other places where there is a current of water. The objects are to provide a device of this character which can be set up without the construction of costly masonry works and in which the operating device may be moved from the water without disconnecting any of the parts or lifting any of the heavy parts of the device out of the water.

ENGINE.—G. C. CANNON, New York, N. Y.

The prime object of Mr. Cannon's invention is the provision of a valve-gear by means of which the speed of the engine may be absolutely controlled—that is to say, by which the engine may be run at any speed within the range between high and low speed. This he attains by a peculiar form of cam and by the arrangement of this cam in connection with the shaft and valve-stems.

ROD-PACKING.—C. L. COOK, Louisville,

Ky. In this instance the invention relates to improvements in packings for piston-rods and shaftings of all descriptions, the object being to provide a metallic packing of novel construction that will effectually prevent the escape and consequent waste of steam or other motive agent.

VALVE FOR STEAM-ENGINES.—C. E. Lowe, Eufaula, Indian Ter. In the present patent the invention has reference to improvements in valves for steam-engines, the aim of the inventor being to provide a valve which will work with less friction than the ordinary slide-valve by doing away with stuffing-boxes and packing-glands for the valve-rod.

ENGINE.—G. H. COLLIER, Joplin, Mo. Mr. Collier's invention relates to a steam-engine having an oscillating piston arranged in a suitable chest or cylinder and joined by a connecting-rod with a crank-shaft, so as to rotate the shaft upon the oscillation of the piston. The chest is provided with feed and exhaust ports controlled by a slide or other valve driven from eccentrics on the crank-shaft.

Railways and Their Accessories.

FISH-BAR CLAMP.—W. S. WOOTTON, Roanoke, Va. This invention relates to means for securing fish bars or plates oppositely upon the webs of meeting track-rails of a railroad, so as to secure the rails aligned and together, and has for its object to provide a novel and practical device for the indicated purpose that is easily applied and that dispenses with screw-threaded bolts and nuts thereon as means for clamping the fish bars or plates in place on the track-rails.

IMPLEMENT FOR ADJUSTING FISH-PLATE CLAMPS.—W. S. WOOTTON, Roanoke, Va. The invention refers to means for adjusting a securing device on fish-plates that are therewith clamped upon the meeting ends of track-rails, holding them aligned, and has for its object more particularly to provide details of construction for an implement that is especially well adapted for adjusting the parts of a novel fish-bar clamp, the implement by its use enabling the fixture of the clamping device at a rail-joint in a convenient, speedy and reliable manner and facilitating removal of the fish-bar clamp as may be required.

CAR-WHEEL.—C. WIMMER, Hamilton, Canada. Mr. Wimmer's invention relates particularly to improvements in driving-wheels for locomotives, the object being to provide a wheel of novel construction so arranged as to have a comparatively large frictional bearing-surface lengthwise of a rail, thus reducing the danger of slipping to a minimum, and therefore causing a train to come to a quick stop upon setting the brakes and a quick and easy start.

LOCK FOR RAILWAY-SWITCHES.—D. BOYLE, Livingston, Mont. In the present patent the invention has reference to locks for railway-switches, and the inventor has for his particular object the provision of a secure device convenient to operate which will not be liable to become disarranged even if the associated switch-stand be overturned.

CAR-COUPLING.—J. MCWATERS, St. Augustine, Fla. The object in this case is to provide details of construction for a coupling which will be very effective and reliable in service, convenient to operate, of compact construction, and which will positively release a car-coupling of the Janney type, whether of the improved or ordinary construction, when the car having the improved coupling thereon leaves the track from any cause and drops below the track-rails or the car in advance is derailed and its coupling is lowered.

CAR-COUPLING.—C. C. WERTHNER, Toronto, Canada. The purpose here is to provide a self-locking coupler adapted for either freight or passenger service and to so construct the coupler that uncoupling may be instantly and rapidly accomplished and whereby when two opposing draw-heads are brought together they will have a locking engagement, yet each draw-head and its draw-bar will be free to accommodate themselves to any curve, ascension, or declivity in the track.

Designs.

DESIGN FOR AN INCANDESCENT LAMP.—A. H. SEILING, New York, N. Y. This design for an incandescent lamp is graceful and ornamental. The lamp is provided with a conical illuminating surface corrugated so as to form a series of lines which converge at an apex and thus presents a maximum of illuminating surface. In form, the glass portion resembles the outline of a top.

DESIGN FOR FRINGE.—J. C. ATKINSON, New York, N. Y. This ornamental design for fringe comprises a band of linen or like threads, the threads producing a bright and checkered effect and studded with woven bows of unvarying size. Below the band the threads hang in graduated lengths to produce a scalloped form of edge. Mr. Atkinson has designed another ornamental fringe of like material as the above and consisting of a band with open work center. Below the band the threads hang in skein form of uniform length.

DESIGN FOR TRIMMING.—C. SEIDEL, New York, N. Y. This new and ornamental design for a trimming comprises a straight edged band of linen or like material. The body has a plain cross thread effect and irregularly spaced with stripes of different widths and two patterned rows, and forming a very chaste and attractive composition.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

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READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring them. In every case it is necessary to give the number of the inquiry.

MUNN & CO.

Marine Iron Works. Chicago. Catalogue free.

Inquiry No. 6463.—For manufacturer of Flaherty Carboy Inclinator.

For mining engines. J. S. Mundy, Newark, N. J.

Inquiry No. 6464.—For manufacturer of suspender web, buckles, cord, etc., in large quantities; also a firm who would make a suspender on contract.

"C. S." Metal Polish. Indianapolis. Samples free.

Inquiry No. 6465.—Address of two or three firms dealing in small engines of one or two horse power.

Perforated Metals, Harrington & King Perforating Co., Chicago.

Inquiry No. 6466.—For manufacturer of cardboard rolls similar to those used for mailing periodicals, etc., also cardboard roll 5 in. long, $\frac{3}{8}$ in. in diameter and $\frac{1}{8}$ in. wall.

Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.

Inquiry No. 6467.—Address of manufacturers of a mill that will pulverize from 5 to 10 tons of hay or straw per day.

Adding, multiplying and dividing machine, all in one. Felt & Tarrant Mfg. Co., Chicago.

Inquiry No. 6468.—Address of people selling spool and bobbin machinery.

Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.

Inquiry No. 6469.—For manufacturer of machine that will take out the artificial target used by trap shooters and known as Blue Rocks, Black Birds.

Robert W. Hunt & Co. bureau of consultation, chemical and physical tests and inspection. The Rookery, Chicago.

Inquiry No. 6470.—For the manufacturer of collapsible hard tubes with screw cap suitable to put up ointment.

The celebrated "Hornby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company, Foot of East 13th Street, New York.

Inquiry No. 6471.—For the manufacturer of mortising chisel, to use in a mortising machine, which removes the core, in making blind tenon doors, sash, etc.

I have every facility for manufacturing and marketing hardware and housefurnishing specialties. Wm. McDonald, 190 Main St., East Rochester, N. Y.

Inquiry No. 6472.—For the address of a firm who can supply a gasoline furnace adapted for heating bars of iron $\frac{1}{4}$ x 1 x 48 inches.

The SCIENTIFIC AMERICAN SUPPLEMENT is publishing a practical series of illustrated articles on experimental electro-chemistry by N. Monroe Hopkins.

Inquiry No. 6473.—For the address of parties manufacturing machine for forming beaded bars into a helical form, like the blades of a lawn mower.

Sheet metal, any kind, cut, formed any shape. Die making, wire forming, embossing, lettering, stamping, punching. Metal Stamping Co., Niagara Falls, N. Y.

Inquiry No. 6474.—For the manufacturer of advertising novelties, especially woolen and celluloid rulers.

We manufacture gasoline motor and high-grade machinery, castings best quality gray iron. Select patterns, and let us quote prices. Frontier Iron Works, Buffalo, N. Y.

Inquiry No. 6475.—For importers of German and French mechanical toys, metal goods and novelties.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machinery and tools. Quadriga Manufacturing Company, 18 South Canal Street, Chicago.

Inquiry No. 6476.—For the manufacturer of machine used by the makers of felt roofing.

CALCULATING MACHINES.—Wanted, first-class firm willing to take up the agency and sale in the United States and Canada of a well-known calculating machine. Terms very favorable. Apply Grimme, Natalis & Co., Braunschweig, Germany.

Inquiry No. 6477.—For the manufacturer of typewriters, metal office furniture, typewriter ribbons, carbon papers, safes, sporting goods, canvas, car curtains, bookcases and office furniture.

WANTED.—General Factory Superintendent or Agent. Competent to take charge of large manufacturing plant. All correspondence strictly confidential. Address with full particulars as to experience and qualifications Superintendent. Box 773, New York.

Inquiry No. 6478.—For firms supplying bathroom outfits, a gasoline engine for pumping the water and an electric light outfit for about a dozen lights.

WANTED.—Revolutionary Documents, Autograph Letters Journals, Prints, Washington Portraits, Early American Illustrated Magazines, Early Patents signed by Presidents of the United States. Valentine's Manuals of the early 40's. Correspondence solicited. Address C. A. M., Box 773, New York.

Inquiry No. 6479.—For the manufacturer of small or portable furnace (oil burner preferred) for smelting iron ore.

MANUFACTURERS OF NOVELTIES AND DEALERS. WANTED to purchase up-to-date novelties suitable for mail order business.

The Agents Novelty Co.

89 Court St., Room 2,
Boston, Mass.

Inquiry No. 6480.—For manufacturers of desiccating machines.

Inquiry No. 6481.—For manufacturers of refrigerators 15 feet in length.

Inquiry No. 6482.—Wanted, catalogues of goods for export.

Inquiry No. 6483.—For parties dealing in collapsible tin or lead tubes with screw caps, such as are used to put up Winsor & Newton oil colors, Carter's and other pastes, blackings, etc.

Inquiry No. 6484.—Name and address of good glass worker to make a bent glass tube of special design.

Inquiry No. 6485.—For manufacturers of air hose, open blast, carpet and furniture tools, air hose connections and a small pressure blower.

Inquiry No. 6486.—Address of embroidery machine makers for simple pattern work, lockstitch principle (zig-zag or otherwise).

Inquiry No. 6487.—For manufacturer of $\frac{1}{2}$ h. p. gasoline engines, water motors which can be tapped and water pipe in cellar like a meter without stopping the flow of water.

Inquiry No. 6488.—Address of firms handling new scientific toys, such as can be used in illustrating principles in Physics in an interesting way.

Inquiry No. 6489.—Address of parties handling violin maker's tools.



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.

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Minerals sent for examination should be distinctly marked or labeled.

(9528) M. L. T. asks: 1. In the so-called "Highlow" lamp, is the small loop of filament which is used for the small candle-power of a greater resistance than the large one? If so, what is its resistance in comparison with the large one? A. We do not know the resistance of the filaments of the "Highlow" lamp, but the resistance of the side which gives the least light must be much greater than that of the side which gives the brighter light. 2. Is a silk watch chain any protection to a watch from its being magnetized when being carried in the pocket? The first person claims that he wears a silk watch chain while working about a machine (which by the way is a 150-kilowatt rotary converter, 550 volts direct current) so that if it should hit the field casting, his watch would not receive the magnetism by its traversing the chain as it would if it were gold. I claim that the material of the chain would not affect the watch becoming magnetized, but if brought near enough to the machine, the watch would receive the magnetism, even if it were in the pocket. I have always read that magnetism had no insulator: according to this, I believe the silk chain to be no protection from magnetism. Will you please state your opinion of this? A. Your friend and yourself seem to be a little mixed in reference to magnetism, silk watch chains, etc. You are right that magnetism passes through space. It has no insulator, excepting iron. It does not traverse a wire at all. It whirls around a wire in which a current of electricity is flowing, and causes the current to move a magnetic needle, and thus makes voltmeters and ammeters possible. Silk on the other hand is an insulator of electricity, not of magnetism. Electricity cannot get off a wire covered with silk. Gold is a conductor of electricity, and if a gold watch chain touched any uninsulated metal which was carrying a current, a man who might touch the chain in that position would receive a shock. If such a chain should touch the field casting only, nothing could happen, since the field casting is not carrying a current of electricity, but is only magnetized.

(9529) J. A. H. asks: Will you kindly explain how voltmeters and ammeters can be read to 1-10 their divisions? A. A scale is usually read to a tenth of a division by estimating the fractional part in tenths with the eye. This is of course not accurate, but the best that can ordinarily be done. The error, with experience, need not exceed a tenth. Sometimes voltmeters and ammeters are provided with shunts, which change the value of a division of the scale. Thus you can have a shunt made which will make one division have one-tenth of its present value. This will be much better than to estimate by the eye the fractional part of a division indicated by the pointer.

NEW BOOKS, ETC.

THE BIBLE IN PRACTICAL LIFE. Being the Proceedings of the Second Annual Convention of the Religious Education Association, held in Philadelphia, Pa., March 2 and 4, 1904. Chicago: Executive Office of the Association, 1904. 8vo.; pp. 640.

The papers contained in this volume cover very completely the subject in hand. Many of them are by leaders in the religious thought of the country, and the information contained in the lectures will be found invaluable to all who have to do with the teaching and studying of the Bible.

THE NATURE OF THE STATE. By Dr. Paul Carus. Chicago: The Open Court Publishing Company, 1904. 12mo.; pp. 52. Price, 15 cents.

Dr. Carus is the author of a long list of works on religion and ethics. Seven papers are here presented dealing with the evolution of the state, its present condition and standing, its rights and its limitations.

CRANIO-MUSCULAR ORIGINS OF BRAIN AND MIND. By Philip H. Erbess. Chicago: Promethean Publisher, no date. 16mo.; pp. 240. Price, \$1.20.

The author is well known in his special line,

and he pretends to no exhaustive treatment of the evolutionary origins of brain and mind. The author believes that it is only by conforming to reality, visible and invisible, that we can ever hope to place life and conduct upon a sound basis. The entire book is avowedly committed to carrying the law of evolution to the limit.

THE TELEPHONE SERVICE. Its Past, Its Present, and Its Future. By Herbert Laws Webb, M.I.E.E. London and New York: Whittaker & Co., 1904. 16mo.; pp. 118. Price, 40 cents.

The author is a well-known electrical engineer, and it has been his endeavor to describe in plain language the general features of a modern city telephone system, and the principles which govern the cost of production of the telephone service. The difficulties which arise in the working of the service are many, and this is chiefly responsible for the acrimony with which complaints against the telephone service are usually tinged. These discussions are, in many cases, marred by lack of knowledge on the part of the participants, not alone of the technical details, but of the fundamental principles of an extremely technical industry. It has been the aim of the author to try and convey intelligently to the lay mind the broad principles which underlie the telephone service, and in this he has succeeded most admirably.

LE TURBINE A VAPEUR ED A GAS. By Giuseppe Belluzzo. Milan: U. Hoepli, 1905. 8vo.; pp. 413. Price, \$2.50.

The author of this Italian treatise on turbines shows a remarkable familiarity with both the theory and practice of turbine engineering. He shows an excellent knowledge of the mathematical phase of the subject, and we doubt if there is any treatise in English which in any way approximates this work. We hope that it may soon be translated and given to English-speaking readers.

BUSINESS SHORT CUTS IN ACCOUNTING. BOOK-KEEPING, CARD-INDEXING, ADVERTISING, CORRESPONDENCE, MANAGEMENT. Detroit: The Book-Keeper Publishing Company, Ltd., 1904. 18mo.; pp. 157. Price, \$1.

In the present volume we find short cuts in figures, calculations, accounting, advertising, correspondence, bookkeeping, filing, credits, collections, selling methods, etc. The expert systematizer is in greater demand than any other business expert. His is the most lucrative of the newest of all professions. He is welcome wherever he goes, and his large fees are seldom begrudged, because in the end he is a money-saver of large caliber. The present book is filled with admirable suggestions, which might be adopted with success by many concerns. The book has been arranged by the board of experts of the Book-Keeper and Business Magazine of Detroit, Mich.

THE NAVAL POCKETBOOK. By Sir W. Laird Clowes. London: W. Thacker & Co., 1904. Pocketbook size; 972 pp. Price, \$3 net.

This little work is always welcome, and it divides the honors with the more pretentious books of Jane and Brassey. Special attention has been given to the submarine boats of the world. The notes on torpedoes are also interesting. The list of drydocks is most comprehensive, and the trial trip tables will certainly be of use to all who are in any way engaged in conducting such tests. The illustrations are numerous and accurate. The book is one that we can recommend as a concise compendium of naval matters.

THE FOUNDATION OF ALL REFORM. A Guide to Health, Wealth, and Freedom. By Otto Carque. Chicago: Kosmos Publishing Company, no date. 18mo.; pp. 76. Price, 50 cents.

The present volume advocates the superiority of the fruitarian diet, and the book will undoubtedly prove of interest to those who are in favor of this diet.

INDEX OF INVENTIONS

For which Letters Patent of the
United States were Issued
for the Week Ending

January 24, 1905

AND EACH BEARING THAT DATE

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

Adding and subtracting machine, M. E. Anderson	780,853
Adjustable table, L. Stengel	780,829
Advertising device, M. L. Hinchman	780,883
Air and gas supply apparatus, J. E. Trucks	780,543
Air brake mechanism, H. N. Ransom	780,813
Amalgamator, J. E. Rossman	780,529
Animal trap, A. A. & E. H. Hoyt	780,659
Annulus, L. N. B. Williams	780,550
Article of manufacture, A. M. De Solla	780,531
Automobile, A. & A. Holmes	780,798
Axles, revolving cylindrical sleeve for railway car, Markkula & Rantala	780,723
Balance ball, W. H. Sargent	780,816
Baling press, J. S. Tuttle	780,625
Batteries, charging storage, J. L. Hall	780,564
Batteries, etc., mercury feeder for stamper, N. L. Carver	780,493
Bed folding, E. Mackenzie	780,569
Belt shifter, automatic, M. G. Gans	780,562
Binder, loose leaf, W. P. Pitt	780,618
Binder, temporary, S. H. McVitty	780,904