

## RECENTLY PATENTED INVENTIONS.

## Apparatus for Special Purposes.

**SEWER-LIFT.**—G. V. ELLIS, New York, N. Y. This invention comprises a certain novel arrangement by which when the sewage reaches a predetermined level in the reservoir or tank a valve is automatically opened, and by action of steam, air, or other compressed fluid, the contents of the tank will be forced out thereof. In the preferred form of the invention, provision is made for exerting an air pressure directly on the sewage to force it out of the tank and for setting in operation a steam ejector which sucks out the sewage. Either, or indeed both, of these devices may be employed at will.

## Electrical Devices.

**ELECTRIC AUTOMATIC BLOCK-SIGNAL AND SAFETY SYSTEM.**—G. P. FINNIGAN, Greene, N. Y. In this patent the inventor has reference to electric block-signal and safety systems, more particularly for use upon railroads, drawbridges, etc., where it is desired that a moving member shall actuate an alarm adjacent thereto and also actuate an alarm at a distance.

## Of Interest to Farmers.

**VINE-CUTTER.**—F. M. EWELL, Egypt, Wash. Mr. Ewell has invented certain new and useful improvements in vine-cutters, and his invention relates to devices of the above-stated character, the object in view being to simplify and improve cutters as they have heretofore been constructed. The cutter is adapted for cutting strawberry and other vine runners, as also for cutting lawn edges, grass, and other similar uses.

**GRAIN-BINDER.**—W. C. DURYEA, Blawenburg, N. J. The object of this invention is to effect certain improvements in the mechanism for actuating the stop and ejector arms of grain-binding apparatus. A further object is to so construct the trip devices that they will be more certain in operation than heretofore.

**INSECTICIDE APPARATUS.**—O. BERGER, Galveston, Texas. The improvement relates particularly to means applicable for preventing the ravages of the boll-weevil, which infests the cotton plant; but the said method and means may be applied also to prevent the injury of vegetable growths by other forms of insects and also by diseases. The composition which is harmful or destructive, is inclosed in a tube having lateral perforations and adapted to be inserted in the body or root of a plant.

**COVER FOR DAIRY PRODUCTS.**—O. THIBAUET, Fall River, Mass. In this case the invention relates to improvements in covers for incasing cheese, butter, etc., the object being to provide a device of this character that will fully protect the products from dust and dirt when lowered and having a means for refrigeration during warm weather and also having a simple means for raising and lowering the cover.

**FENCE-POST.**—N. A. FJELD, Joice, Iowa. In this patent the invention is an improvement in posts designed especially for use as an anchor or corner post for barb or woven wire fences. In practice the parts of the post may be made of iron and will present a strong, durable construction.

## Of General Interest.

**SPIRIT-LEVEL.**—J. BISHOP, Bartow, Fla. The invention relates to improvements in levels; and the object the inventor has in view is the provision of an improved spirit-level in which the contradistinction between the tube and the liquid within shall be so clear that the air bubble present in levels of this type may be readily seen in a very poor or dim light and at a reasonable distance.

**ROOT-EXTRACTING FORCEPS.**—N. D. ASHELL, San Francisco, Cal. This improvement consists in forming the adjacent faces of the screw-threaded and longitudinally-divided beak with a longitudinal or intermeshing rabbet, so that the two sections of the tapering and screw-threaded sections will not slip or twist upon each other when rotated upon a longitudinal axis, but will, on the other hand, mutually brace each other and hold together, so that the beak may be tightly seated in the root-cavity. It also consists in means for maintaining the tight grip of the two halves of the beak while extracting the root.

**HEAT-INSULATING COMPOUND.**—J. D. SCOTT, Shields, England. This invention relates to a compound useful in various connections, but especially intended as a covering for boilers, steam-pipes, and equivalent structures to prevent loss of heat by radiation. The compound is composed of asbestos and mica with a starch-like bonding, enabling the compound to be prepared in plastic form and spread over the surface to which it is applied, after which it sets permanently to the surface.

**TUNNEL CONSTRUCTION.**—P. KAMMERER, New York, N. Y. One purpose in this instance is to provide a construction made up of a series of angle-irons braced and arranged for reception of cementing material and for interlocking connections, which sections are finished by a plastic covering or shell and filling before fitted to place, and also provide a coupling for opposing sections which will join them, the couplings so constructed that the cement-

ing material can be introduced from a point above parts being fitted, so as to make the structure concrete or integral and waterproof and so that particles, such as sand, cannot find ingress to the tunnel structure.

**GEOMETRICAL INSTRUMENT.**—S. E. LLONA, Lima, Peru. In carrying out this improvement the inventor has in view providing an instrument which shall be simple in construction and manufactured in large quantities at small expense. He provides an instrument which enables mathematicians, engineers, draftsmen, and those engaged in like professions to divide and subdivide angles into any number of parts with exactness and accuracy and also rectify circles or parts of circles.

**CLASP FOR SUPPORTING SCARFS FOR NECKWEAR.**—LETTIE LASSEN, New York, N. Y. The object in this case is to provide a simple clasp that may be readily applied upon a wide ribbon or other flimsy fabric used as neckwear or for other purposes where it is available and hold such fabric from becoming wrinkled or drawn into folds that reduce the width of the ribbon and render it bulky, uncomfortable, and unsightly as an article of ornamental neckwear.

**HORSESHOEING-STAND.**—S. M. MARTIN, Sidney, Ohio. The invention refers more especially to the type of stands described and illustrated in Mr. Martin's former Letters Patent. A structure is preferably employed comprising uprights, from the upper part of which extend parallel longitudinal beams, across which are disposed supports for the upper ends of laterally swinging racks, between which latter the animal stands during the shoeing operation. Specially-constructed devices are used to hold the racks to any position. Other details are also employed.

**GARMENT-FASTENER.**—F. SMITH, Council Bluffs, Iowa. The prime object of the invention is to provide a device in which the two parts of the fastener may be readily engaged with each other and when so engaged will not be liable to accidental disconnection and which will allow a large freedom of movement between the two fastener parts without endangering the disconnection. This fastener is useful in connection with cloths and garments of various sorts, particularly the garments of women and children.

**ARTIFICIAL LIMB.**—S. E. STAGGS, New York, N. Y. In the present instance the inventor contemplates as the main object the provision of an upper leg member, a knee joint, a lower leg member, an ankle-joint, and a foot member, these parts all being designed to be correlated and arranged. There are means for adjusting and controlling the tension of the knee joint in such a manner that the latter may be suited to various conditions. The ankle connection of the limb is so constructed that freedom of movement will be at all times secured, while a safe, comfortable joint will be attained.

**FLUE-STOPPER.**—I. RUSSELL, Carthage, Ill. The object of this improvement is to provide a stopper which shall be adapted to be easily inserted in and removed from a flue or thimble and which will close the latter tightly when duly secured in place, and thereby exclude dust, dirt, or soot from a room in which the flue is located.

**EYE-BRUSH.**—C. F. W. RAMUS, East Boston, Mass. The inventor's object is to provide a simple device, quite small and portable, that may be readily applied for the removal of foreign matter from the human eye by the one afflicted or by another person and that will quickly remove the foreign matter without the slightest injury to or further irritation to the eye.

**MUFFLER.**—S. HUGHES, Randolph, Wis. The purpose in this case is to provide a collar and muffler with a shirt-front and necktie effect which can be attached to a chest-protector, sweater, or shirt, and worn to cover the face with the exception of the nose and eyes so as to cover the mouth and nose as well and which may be worn to provide a warm collar practically reaching to the chin, with or without ear-protectors, the latter being normally attached to the rear of the collar or skirt section of the muffler.

**EGG SCOOP.**—J. SCRIMGEOUR, JR., and J. OBERDORFER, Pittston, Pa. In this patent the invention relates to improvements in scoops for transferring eggs from a crate to an egg-tray and back to the crate, the object being to provide a scoop of inexpensive construction and by means of which the eggs may be readily removed in layers from a crate without danger of breaking the eggs.

**PHOTOGRAPHIC-PLATE HOLDER.**—J. SCHAUB, Logan, Utah. One of Mr. Schaub's improvements resides in a device located in the plate-chamber by which a plate can be easily and quickly inserted or removed without touching the sensitized surface thereof, such device serving also as a means for locking the plate against movement when fully inserted and tending to prevent accidental dropping of the plate during the manipulation of the holder in inserting or removing plate. Another improvement is a form of light-excluding flap, and another, a type of slide-lock adapted to retain the slide in its closed position and serving as a handle for withdrawal of slide.

**BOTTLE-BRUSH.**—L. J. WIDNESS, New York, N. Y. In this instance the object is to provide a new and improved bottle-brush arranged to permit the operator to conveniently,

quickly, and thoroughly clean the inner faces of the sides and bottom of the wall of a bottle simultaneously and without much physical exertion on the part of the operator.

**RULER.**—P. CUMMING, Key West, Fla. In this patent the invention relates to parallel or other rulers, and is especially adapted to that class of parallel rulers that are used by sailors for laying out courses, plotting their daily work, and the like. It is, however, of general use on rulers and not confined to parallel rulers. The improvement increases ease of operation of rulers, prevents their slipping, etc.

**GAS-WASHER.**—F. BURGEMEISTER, Celle, Hanover, Germany. The invention is mainly intended to replace scrubbers used in the manufacture of illuminating gas, in which bundles, sheet-metal trays, coke, etc., are usually employed for freeing gas flowing through from tar and ammonia. Washers are known in which subdivision of water-supply is effected by means of sieves, plates, or revolving vanes. These, however, operate with large quantities of water and partly with considerable motor power, and very expensive. The present washer insures purification of gases by a peculiar arrangement for spraying the liquid.

**BOTTLE-CLEANING DEVICE.**—W. W. SPALDING, New York, N. Y. The object of the improvement is the provision of a cleaning device more especially designed for cleaning nursing-bottles and the like, by the use of shot and arranged to allow of conveniently placing the shot in the bottle, confining it therein while shaking the bottle, and allowing quick removal and storing of the shot after the bottle is cleaned.

**DISPLAY CASE OR RACK.**—L. M. SIERSDORFER, Carrollton, Ky. The purpose of the invention is to provide a case or rack for hats, neckwear, or other merchandise which will occupy as little room as or less room than a counter, and which will display a far greater quantity of goods to much greater advantage. The device can be quickly and conveniently taken down or set up, all of the body portion when the parts are separated fitting into the base with the exception of the top, which can be used as a cover for the other parts.

**FIREARM.**—E. E. REDFIELD, Glendale, Ore. This arm is so constructed that after a shot is fired and the thumb-lever connected with the breech-block, and which acts as a trigger-guard, has been carried forward the block is carried rearward and the cartridge-carrier is brought into position to receive a cartridge from the magazine, clamping cartridge and holding it, and as the lever is restored to guard position relative to trigger, the carrier is elevated to bring cartridge in alignment with barrel and the block is brought forward to force the cartridge into firing position, the carrier meanwhile dropping downward out of way of block to position close to back of magazine, the grip of the carrier being opened to receive cartridge when lever is carried forward.

**FEED-BOX.**—W. G. HAAS, New York, N. Y. This invention relates to feed-boxes for horses and other animals, and is especially adapted for use in fire-stations for feeding horses liable to be called out at any time. The principal object is to do away with the use of objectionable portable feed-boxes and also to do away with the necessity of putting the feed on the floor.

**PAPER BOX.**—J. T. CHAW, Jersey City, N. J. The purpose in this improvement is to provide a box which may be quickly and conveniently set up and which when set up will have a perfectly flat, springless bottom, without exposed folds, the blank from which the box is made being economically cut, and so cut and scored that when the parts are adjusted to place they will be, as it were, locked against displacement without the aid of paste or other viscous material, except at one edge of the body of the box.

**JEWELRY-FASTENING DEVICE.**—R. FISCHER, New York, N. Y. The principal object of the invention is to provide a device which is small, simple, and inexpensive, which may be quickly applied to a scarf-pin and when so applied will automatically grip the pin, so as to hold it securely and prevent its accidental removal from the garment in which it is inserted.

**VALVE-CONTROLLING DEVICE.**—A. F. DONALDSON, Mansfield, Ohio. The invention relates to means for controlling valves to govern the amount of water or other liquid passing through the valve. The object is to provide a device simple and durable in construction, easily adjusted, and arranged to insure a rapid closing of the valve after the desired amount of liquid has passed through the valve.

**CLASP FOR GARMENT-SUPPORTERS.**—J. C. DOWNEY, Waterbury, Conn. In the present instance the intention is to provide novel details of construction for a clasp that adapts it for very effective service as a means for detachably connecting the leg of a stocking with an elastic band used as a stocking-supporter, but which may also be used in connection with other garment-supporters.

## Hardware.

**DOOR-HANGER.**—J. CRAMER, Lima, Ohio. Among other objects the invention seeks to provide a construction wherein the door may be easily adjusted without tearing away the woodwork, the parts are not liable to get out

of order when properly installed and adjusted, the wheels run truly and practically noiselessly on the track, the wheels cannot jump the track by a sudden jolt, sidewise movement is minimized, it is not necessary to leave wide space or opening in head-jamb for travel of the hanger, and the parts are easily placed in position.

**BRACKET.**—G. W. CAMPBELL and A. C. WILLIAMS, Chattanooga, Tenn. The Messrs. Campbell and Williams's invention has reference to improvements in metal brackets, particularly for supporting metal sinks and the like, an object being to provide a bracket that may be readily adjusted to sinks of different widths, and by the use of which drilling of holes in the sink-rim is obviated. The bracket is equally adapted for supporting shelving.

**WRENCH.**—H. STEIN, Georgetown, Minn. This improvement relates to a class of lever-wrenches having a fixed jaw, a slidable jaw, and means for holding the slidable jaw at a desired distance from the fixed jaw. The object is to provide details of construction for a wrench which adapt the wrench for very convenient adjustment of the slidable jaw and enable the instant fixture of the movable jaw at a desired point on the lever-bar of the wrench.

## Heating and Lighting.

**ARC-LIGHT DISTRIBUTER.**—H. J. PALMER, New York, N. Y. In Mr. Palmer's patent the invention has reference to means for distributing light and admits of general use, but is particularly applicable in the case of arc-lights, for the reason that in such lights the illuminating-surface due to the use of carbon is comparatively small.

**ATTACHMENT FOR FIRE-BOXES OF STOVES.**—A. MARKOFF, Derby, Conn. Means are offered in this invention for changing the dimensions of the fire-box, so that more or less fuel may be consumed and the heat controlled to suit requirements of service. The object is to provide details of construction, simple and readily applied to new or old stoves and that will enable the reduction of the grate and fire-box area any degree, and which by easy adjustment will permit the grate to receive rocking adjustment as may be required.

## Household Utilities.

**SHADE-BRACKET HOLDER.**—H. G. FILLISON, New Cumberland, W. Va. This device is adapted to be secured to a window-frame and has means for attaching thereto the usual form of bracket used to support a shade fixture. The object is to provide a form of holder to be permanently attached to the window-casing, to which holder the usual form of shade-bracket can be removably secured in a number of positions of adjustment.

**EXTENSION-TABLE.**—A. F. ZOCHERT, Fond du Lac, Wis. The improvement is particularly in that class of tables having a "pedestal" formed in sections connected with opposite ends of the table and arranged when extension-leaves are removed and the table is closed to inclose a central leg; and the object is to provide constructions for locking together the sections of pedestal when the extension-leaves are removed and table closed.

## Machines and Mechanical Devices.

**OILER FOR SHAFT-BEARINGS.**—W. M. COFFMAN, Madison, Wis. The invention relates particularly to improvements in automatic oilers for vertical shaft-bearings. The object is to provide an oiler of simple and inexpensive construction that will provide a continuous supply of oil whether the shaft be running fast or slow, and the arrangement is such that the surplus of oil will flow back to the reservoir to be used over again.

**THREAD HOLDER AND CUTTER FOR SEWING-MACHINES.**—C. D. MATTHEWS, New Orleans, La. The invention relates to a device applied to the presser-foot of a sewing-machine for holding the end of the needle thread, and for cutting off the same after the stitch has been finished. It comprises a spring tongue to hold the thread against the presser-foot and against which the blade is drawn to cut the thread.

**FRICTION-CLUTCH.**—C. J. MACOMBER and G. H. GUTHRIE, Muncie, Ind. An improved friction-clutch has been invented by Messrs. Macomber and Guthrie, which is simple and durable in construction, very effective when in use, and arranged to insure an easy running of the pulley when not in frictional contact with the clutch members. It also allows the positive driving of the pulley and shafts when the clutch is in action.

**THREAD-CUTTER FOR SEWING-MACHINES.**—C. D. MATTHEWS, New Orleans, La. The device comprises the combination with the needle or throat plate of the sewing-machine, of a tongue fastened thereto, and having a cutting edge, this tongue serving both to pinch the end of the thread against the throat plate, and also to cut off or sever the thread so that after the seam has been made, the sewed fabric may be readily detached from the machine.

**CLUTCH.**—E. DYSTERUB, Monterey, Mexico. The inventor seeks to provide means for more accurately and fully adjusting the parts of the clutch, thereby insuring absolute accuracy and positive action. By this means the action of the clutch is kept back until the motive-power

machine has attained full speed, and then the clutch takes hold of the loaded pulley.

**MULTICOLOR PRINTING PRESS.**—F. E. KEMPF, care of Joseph Baron, 333 West 16th Street, New York, N. Y. The object of Mr. Kempf's invention is to provide an improved multicolor-printing press designed to permit printing in any desired number of colors on one or both sides of the sheet and arranged to allow quick adjustment of the several parts to enable the operator to conveniently and easily "make ready" and insure perfect impressions. The machine is also applicable to the printing of wall papers, textile and oil cloths.

**MUSIC-LEAF TURNER.**—J. W. O'NEEL and J. R. EDWARDS, Lafayette, Ore. The turner is of that class in which a number of wings intended to be attached, respectively, to the music-leaves are arranged to be turned in succession by operating devices actuated either from the operator's hands or feet. The principal novelty lies in the manner of mounting and successively operating the wings and in the devices for returning any one or all of the wings either to repeat a part or the whole of the music or to place the apparatus in position for renewed operation of any sort.

**METALLIC PACKING.**—J. JACOBSON, Lead, S. D. This invention relates to packing for rods that are members of steam and other engines, and has for its object to provide features of construction for metallic packing, which adapt it for very effective service, enable the convenient inspection or renewal of interior details when worn so as to require it, and that permit the application of lubricant through the packing and upon the rod packed therewith.

**CAKE-MIXING MACHINE.**—JULIA C. GAUTIER, Columbus, Ga. The object of this invention is to produce a machine in which batters for making cakes, etc., can be quickly and easily formed and in which the whites and yolks of eggs and butter which are used in making these batters can be separately beaten at one and the same time by one person.

**PNEUMATIC LEAF-TURNER.**—J. W. ALBIN, Babylon, and L. A. SEAMAN, Mineola, N. Y. In this patent the invention of Messrs. Albin and Seaman relates to leaf-turners, and more particularly to the kind used in connection with sheet-music, their more particular object being the production of means for operating the same pneumatically by the pressure of the operator's foot.

**HAT-MACHINE.**—G. W. CHAMBERLAIN, Atlanta, Ga. The invention relates to improvements in machines for forming bell-crowned hats of felt or similar material, an object being to provide a machine by means of which bell-crowns may be quickly and uniformly pressed into shape without danger of tearing the hat material.

**CARTRIDGE-LOADER.**—E. E. BRECKENRIDGE, Manning, Iowa. The invention comprises a compartment hopper with measuring devices for withdrawing the charge of powder and shot therefrom and discharging the same into the cartridge-holder, which is sectional to engage and release the cartridge and which is so positioned that the rammer, which is located above the holder, may be moved down into the same to ram the charge and wads in place.

**SPLIT PULLEY.**—G. F. MCLYNN, Cottage-grove, Ore. In the use of this efficient device the sections are placed about the shaft in the usual manner, with a bushing of proper size interposed, and then clamped upon it by bolts, a sectional bushing used if desired to secure engagement. When fixed in place, it will be seen that the strain upon all parts of the rim is communicated directly to the shaft and at places where the structure is weakest, this being at the juncture of the sections, a double support is given.

**STIRRING APPARATUS.**—J. S. DEAL, Monroe, Wis. In the present case the invention relates to apparatus used in the manufacture of cheese; and its object is to provide an apparatus more especially designed for stirring milk in the cheese-kettle and arranged to allow of moving the kettle over or off the fire without interruption of the stirring process.

**TRANSMISSION-GEAR.**—C. H. DAY, Hornellsville, N. Y. The mechanism consists of a gearing of the sun-and-planet type, whose principal feature lies in the arrangement by which the planetary gears are carried bodily by the driving member and moved continuously around the axis thereof, high speed being attained by locking the gearing and low speed and reverse being attained by coating gears of varying ratio.

**PUMP-COUPLING.**—C. W. DECKER, Charles City, Iowa. The object in this improvement is to provide a construction for coupling the pump-handle to the pump-rod and at the same time uncoupling the windmill-rod from the pump-rod, and vice versa, by the movement of pump handle or lever and to so construct the parts that they may be easily and quickly attached to any ordinary windmill-pump by means of a wrench and file.

#### Prime Movers and Their Accessories.

**WINDMILL-LUBRICATOR.**—H. H. TATSCH, Fredericksburg, Texas. An object of this invention is the provision of a lubricator adapted at predetermined times to supply a lubricant to a receptacle, from which receptacle ducts lead off the lubricant to the por-

tions of the windmill to be subjected to lubricating process. Lubricating operation will not take place until certain mechanism actuated from the mill-pitman is brought into operation to supply the receptacle, referred to, with the lubricant. There is no possibility of dust, snow, ice, or the like clogging or interfering with the operation of the parts.

**ENGINE.**—O. P. UNDERWOOD, Central City, Neb. The invention relates to multicylinder-engines. The object is to provide an improved engine which is simple and durable in construction, very effective in operation, and arranged to utilize the motive agent to the fullest advantage to insure a uniform and constant transmission of the power developed to the main shaft at all points of the latter's rotation and completely avoid dead-center positions.

**WINDMILL.**—T. O. PERRY, Chicago, Ill. Of objects in this case, one provides for automatically changing the weather angles of sails from positions suited to easily starting motion to other angles better suited to efficiency after the wheel gains motion and, vice versa, to provide for having sails automatically assume better weather angles for starting motion whenever the motion of the wheel ceases or is unduly retarded; another, provides further automatic regulation of weather angles of sails for preventing excess motion in high velocity winds, or for maintaining motion not to exceed desired maximum in any wind.

#### Pertaining to Vehicles.

**ADVERTISING-VEHICLE.**—J. A. ELDRÉ, New York, N. Y. The object of this invention is to provide an improved advertising vehicle having fixed and movable advertisements to readily attract the attention of the public while the vehicle passes along the highways. The body of the vehicle comprises a number of advertising panels between which mirrors are placed. Two large spheres are placed in the upper part of the vehicle which carry advertisements and are slowly rotated as the vehicle moves along.

**VEHICLE.**—J. A. WILLIAMS, Cleveland, Ohio. In this patent the invention relates to vehicles, and more particularly to the axle of those of the motor-driven type. Its principal objects are to provide a simple and durable arrangement whereby the driving power may be applied to the axle of the steering-wheels. Mr. Williams has made another invention relating to vehicles, it being particularly applicable to those propelled by motors. It has for its principal objects the provision of means for connecting to the same supporting-wheels both the vehicle steering and driving mechanism.

**RATCHET-LEVER.**—H. W. KOEHLER, Oswego, Ore. In this case the invention has reference to novel features of construction and arrangement residing in a ratchet-lever and ratchet, by means of which a suitable leverage may be exerted on the ratchet, and the dog or pawl must automatically disengage the ratchet upon the reverse movement of the lever.

**DOUBLE-TUBE TIRE.**—F. F. THOMPSON, Lawton, Oklahoma. The design of this invention is to overcome many difficulties in a simple and practical way. To that end it consists in locating the valve-hole of the outer tire at a distance beyond the slit, so that said hole is not bisected on one side of the slit; but the hole has a solid collar of the outer tube material all around the valve hole, forming an unbroken reinforce for the valve-nipple, so that there is no bulging of the inner tube on one side of valve immediately adjacent thereto and difficulties are entirely obviated.

#### Railways and Their Accessories.

**SLEET-CUTTER AND CONTACT FOR ELECTRIC RAILWAYS.**—C. T. LEONARD, Leonardo, N. J. The invention relates to improvements in a conductor-contact and sleet-cutter for electric railways, the same being more especially adapted for use in connection with the third rail of an electric railway system, although some features may be used on overhead electric conductors and in other railways. It provides a contrivance for insuring good electrical contact with a conductor-rail and for rapidly and thoroughly cutting sleet adhering to the head of such rail. It provides means for clearing away ice and sleet, so that good electrical contact may be secured between rail and contact and cutter wheel, and furthermore, to yieldably hold parts under pressure in working positions.

**CAR-FENDER.**—W. T. WATSON, Newark, N. J. The invention has reference to an improved fender, which is arranged automatically to assume a basket-like form upon a person falling into the fender, so that in this manner the fallen person will be held safely until the car is stopped and the person removed from the fender.

#### Designs.

**DESIGN FOR A CUP.**—J. A. MOLLER, JR., New York, N. Y. In this ornamental design the invention presents a ball-shaped cup, near the top of which is a round rim opening. Two gracefully-poised cattle horns connect with the sides of the cup at its center with the bottom of the base holding up the bowl portion of the cup.

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 the paper.

## Business and Personal Wants.

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 the information. In every case it is necessary to give the number of the inquiry.

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**Inquiry No. 6162.**—For a good, low-priced telephone for plantation use.

**AUTOS.**—Duryea Power Co., Reading, Pa.

**Inquiry No. 6163.**—For a hand-power press for printing trade-mark on orange boxes.

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

**Inquiry No. 6164.**—For a salmon-colored newspaper 11½ x 44 inches, with or without lace ends, for lining orange crates.

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

**Inquiry No. 6165.**—For embossed paper or metal cards for advertising fruit.

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

**Inquiry No. 6166.**—For pressed paper imitating tiling and pressed steel ceiling for use over plain wood ceiling.

If it is a paper tube we can supply it. Textile Tube Company, Fall River, Mass.

**Inquiry No. 6167.**—For ¼ h. p. gasoline engine castings for amateurs.

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

**Inquiry No. 6168.**—For manufacturers and printers of manila tissue fruit wraps.

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

**Inquiry No. 6169.**—For manufacturers of sheet and wrought bar brass.

All Manufacturers.—See advertisement in last week's paper, page 324, of improved bicycle. Easiest of terms. A. A. Kennedy, Overbrook, Pa.

**Inquiry No. 6170.**—For manufacturers of tarred wooden tube wrapped with wire or iron.

**DRY BATTERIES.**—How to make and use them. Practical, with original drawings. Mailed for 25 cents. Spon & Chamberlain, 123 S Liberty Street, New York.

**Inquiry No. 6171.**—For a tool grinding outfit attached to a bicycle, so arranged that the bicycle pedals may be used in propelling.

Patented inventions of brass, bronze, composition or aluminum construction placed on market. Write to American Brass Foundry Co., Hyde Park, Mass.

**Inquiry No. 6172.**—For makers of light, portable emery grinding machines.

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. 6173.**—For manufacturers of ball and socket fasteners.

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

**Inquiry No. 6174.**—For makers of square and flat wire in sizes up to ¼ inch.

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. 6175.**—For makers of wire paper clips.

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. 6176.**—For makers of motor cycle engine castings and accessories.

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**Inquiry No. 6177.**—For machines for beveling the edges of cardboard.

Special Machinery to order, manufacturing, metal stampings, etc., Brickner Machine Co., Tiffin, Ohio.

**Inquiry No. 6178.**—For manufacturers of ink for inking typewriter ribbons.

WANTED.—Gasoline engine to build on royalty arrangement, or would buy. Chicago machinery manufacturing house. Engine must be practical, powerful, and adaptable mainly to small runabout automobiles. Address Machinery, Box 773, New York.

**Inquiry No. 6179.**—For the present manufacturers of the Merrill pump, lately of 120 Broadway, New York city, or repair parts for these pumps.

**Inquiry No. 6180.**—Wanted, to purchase outright patent, or the manufacturing right of some small, light, available article, of general utility and attractiveness.

**Inquiry No. 6181.**—For makers of a machine for manufacturing wheat starch.

**Inquiry No. 6182.**—For builders of two-story rustic cottages with the bark on.

**Inquiry No. 6183.**—For makers of tin strips 2 inches wide, any length.

**Inquiry No. 6184.**—For parties to manufacture spatulas on paid contract.

**Inquiry No. 6185.**—For dealers in small hand power ice machines.

**Inquiry No. 6186.**—For parties to make patented cuff holders on contract.

**Inquiry No. 6187.**—For manufacturers who make igniter or electrode points in special shapes.

**Inquiry No. 6188.**—For manufacturers of a furnace regulator—automatic device to regulate draft and check damper.

**Inquiry No. 6189.**—For a small toy calorific engine.

**Inquiry No. 6190.**—For an automatic dice box with glass top, working by lever.

**Inquiry No. 6191.**—For a small kiln, new construction, where lime does not come in contact with fuel.

**Inquiry No. 6192.**—For makers of castings of auto engines, ½ h. p., and dynamos about 5 lights.

**Inquiry No. 6193.**—For makers of wooden staves for straight-sided tubs, fiber board.

**Inquiry No. 6194.**—For makers of rotary ticket-cutting machines, pasteboard-making machinery, machines for coloring tickets, also for printing them, etc., of simplest construction.



### 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.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same. 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.

(9476) C. T. J. asks: 1. I have a book which tells how to construct induction coils, but the different sizes of wire to be used are all given in the English standard wire gage. Is there any way in which I could find out the corresponding number (size) of wire in the American, or B. & S. wire gage? For instance, number 30 English standard wire gage would be what number (or size) in the B. & S. (American) wire gage? A. Any book of tables for mechanics should contain the sizes of wires given both in the American and the British systems. Most school text books of physics contain them, also many catalogues of dealers in electrical supplies. These last can be had free by inclosing a stamp to these houses. No. 30 wire British gage is .012 inch in diameter. It is between No. 28 and 29 American gage, nearer No. 28. For the small wires, no great error will be made by using a wire one or two numbers lower in American gage. That is, the British wire is thicker than the American wire of the same number. 2. I have one of those small vest-pocket electric flashlights, the dry cell of which is nearly run down. Please state the voltage and amperage of the current most suitable for recharging the cell, if that can be done. A. A small dry cell should be recharged with about 2 volts and 3 or 4 amperes. It is very much cheaper to throw the run-down cell away and buy new, for a recharged cell is worth no more than half as much as a new one. 3. In the above question, how can a person tell when the cell is fully recharged, and about what length of time is necessary to carry on the recharging process? A. A dry cell should be charged till the voltmeter indicates 1.5 volts at its terminals. We cannot say how long it will require. 4. I have a small Ajax (toy) motor that will run on one cell dry battery. How many ohms resistance would it be necessary to connect in series with it so as to run it on a 110-volt direct current circuit? A. The amount of resistance required for a toy motor on a 110-volt direct current circuit cannot be told without knowing the resistance of the motor. As this is doubtless low, it will be safe to use 250 to 300 ohms. 5. How many 16 candle power, 110-volt incandescent lamps would it require to be connected in series with the above motor to obtain the required resistance? A. Try the motor in series with two 16 candle power 110-volt incandescent lamps, and if it does not come up to speed take out one of them. If it runs too fast add lamps. 6. Is there any better way of getting the above resistance so that the motor will run on the 110-volt circuit safely? A. There is no simpler resistance than that of a lamp bank, nor any more commonly used for experimental purposes. A water rheostat will answer equally well. 7. Would a 110-volt alternating current require any more or less resistance for the motor than the direct current circuit, and if so, how much? Would it run the motor all right, or just as well as the direct current? I mean the alternating current with the necessary resistance. A. An alternating current generally requires less resistance, if the coils are wound in spools, or inductively, than is required by the direct current. How much less cannot be told without full data. A direct-current motor may be run on a single-phase alternating current, but it is not self-starting. The motor must first be brought up to full speed and the current then turned on. 8. Kindly state the safe (allowable) carrying capacity, in amperes, of numbers 14, 12, 10 and 8 rubber-covered wire, respectively, on 110-volt circuits. A. The carrying capacity of rubber-covered wires by the tables of the underwriters is as follows, all systems and voltages: No. 1, 14 amperes; No. 12, 17; No. 10, 24; No. 8, 33.

(9477) J. A. C. asks: The question is often asked: How much voltage does a current of electricity have to have to kill the average man? I was of the impression that it depended on a good many other things as well as voltage, and that sometimes an extremely high voltage was harmless, as the current from a Wimshurst machine or induction coil. My friends tell me, though, that anything over two or three thousand is certain death. Have you any data as to the resistance of the human body? A. The amperes of electric current which can flow through the human body depends