

## RECENTLY PATENTED INVENTIONS.

## Mechanical Devices.

**BALING-PRESS.**—LEANDER WILSON, Alpha, Ill. The baling-press is continuously operated by belt-power, the plunger being worked by toggle arms and gears. The hay or other material is fed in laterally from the top in front of the plunger and packed by an oscillating board worked automatically. Partition boards are introduced behind each bale of hay. The bales are successively forced out one end of the casing between tension devices forming a throat or passageway. The invention is characterized by its compactness, strength, durability, simplicity and power.

**STOP-MOTION FOR MECHANICAL TOYS.**—ATHERTON D. CONVERSE, Winchendon, Mass. The inventor has devised a simple mechanism which automatically prevents the wheels of a motor-controlled vehicle from turning when the motor is in force, but the wheels are out of engagement with the support upon which the vehicle travels. The mechanism in question also automatically permits the wheels to turn and the motor to act when the wheels are brought into contact with the surface upon which the vehicle is to move.

**THRASHING-MACHINE STRAW-CARRIER.**—HERMAN BAAK, Charter Oak, Iowa. The invention is an equalizer for the straw-carrier of threshing-machines. In such machines the reciprocating straw-rack has forwardly-inclined teeth, and on the back movement the straw-rack slides under the straw, while on the forward movement it does all the work of urging the straw forward. The present invention is designed to reinforce the power of the driving-machine of the straw-rack on the forward movement. The strain on the machine is equalized by means of a spring which is put under tension on the back movement of the straw-rack.

**MACHINE FOR CUTTING CORN OR THE LIKE.**—FRANZ NACHTIGAL, Alexandrowsk, Ekaterinoslaw, Russia. The rakes in the automatic agricultural machines are limited in their action and thereby prevent a large useful effect. Further, the iron parts of the rakes are subject to great wear by the rolling motion, not to mention the breakages which so frequently occur. Owing to these defects, Russian farmers use the simple reel-cutting-machine. With the present invention all these disadvantages are removed; for the corn, regardless of its position, can be properly fed to the knives by an improved construction of the reel, and removed from the table or conducted to a blinder by a rake driven by simple mechanism.

## Metallurgical Appliances.

**ORE-SAMPLING MACHINE.**—ALBERT C. CALKINS, Los Angeles, Cal. The sampling machine is designed more especially for the use of assayers for rapidly and efficiently mixing and subdividing a quantity of pulverized ore, of which a representative sample may be desired. The machine is also applicable for mixing and sampling or subdividing any kind of material, as frequently required in the drug trade.

**AUTOMATIC BLOWPIPE.**—ALBERT C. CALKINS, Los Angeles, Cal. The blowpipe is intended for the use of chemists and assayers and is of such construction that it is in a measure automatic or continuous—that is to say, one in which the interval of drawing in the breath is bridged over by the mechanical action of the blowpipe so as to make a continuous blast at the nozzle or twyer end of the blowpipe.

## Railway Contrivances.

**SWITCH MECHANISM.**—CHARLES F. GAY, Spokane, Wash. The mechanism is designed to operate the switch-tongues of railways from the power-platform and is composed of a shifting-block carried by a car, and a part on the block for engaging between the main rail and the free end of the switch-tongue. A part on the block engages with a projection on the outer side of the main rail to turn the block. A spring returns the parts to normal position.

## Vehicles and Their Accessories.

**SECURING ELASTIC TIRES TO WHEELS.**—WILLIAM F. WILLIAMS, 17 and 18 Great Pultney Street, Golden Square, London, England. The invention relates to improvements in securing an elastic tire to the wheel-rim by means of a band so applied as to bind the base of the tire or tire-cover to its seat in the grooved wheel-rim; and the improvements have for their object to prevent the cutting of the tire or its cover by the edges of the holding-on band and to prevent creeping of the tire upon the wheel-rim.

**CUSHION-TIRE.**—ERNEST GERMAIN, Boulevard de Strasbourg 2, Paris, France. The inventor has devised a pneumatic tire that can be secured to the wheel-rim without the aid of wires or thickened edges. The pneumatic tire consists of a cushion of soft or spongy rubber in which are formed cells or cavities for the reception of rubber balls inflated with air at a pressure of several atmospheres. The cushion is contained within one or several layers of rubber-coated canvas inclosed in turn by an outer layer of rubber provided with a rubber tread.

**HORSE-DETACHER.**—BALDOMERO VALDES VELASCO, Key West, Fla. The invention provides a means whereby the driver may release

the traces from the shaft or carriage by the pull of the horse on a singletree or doubletree, according as one or two horses are hitched to the carriage or wagon. When a horse starts to run away and the driver can no longer control him, he is simply released, leaving the occupant of the carriage safe.

## Blank Books.

**LEDGER.**—ARCHIBALD E. PARTRIDGE, Seattle, Wash. The ledger is particularly adapted for use in lodges and fraternal societies. The book is simple and compact. Entries can be made for a number of terms without becoming voluminous; and the labor of entering the names and other personal data of members is materially reduced.

**MANIFOLD-BOOK.**—EDWARD D. MCKENNA, Brooklyn, New York city. In this book copies of bills, letters and orders can be quickly made while the original is being prepared. The invention furthermore provides a carbon-holder of such construction that the carbon sheet and accompanying sheet of silk can be quickly bound together at one of their edges and the holder conveniently placed in the book.

## Miscellaneous Inventions.

**PORCELAIN-CROWN FACER.**—CHARLES A. HOFFMAN, New Albany, Ind. The inventor has devised a simple instrument especially adapted for grinding a perfectly flat face upon the cervical portion of what is known among dentists as a "Logan crown," enabling a perfect joint to be ground when setting such a crown upon a root of a tooth.

**CROSS-BRIDGE.**—THOMAS F. KEARNEY, Brooklyn, New York city. The invention relates to a device for bracing floor-joints and other parallel timbers, such devices being commonly known as "cross-bridges." Mr. Kearney's cross-bridge is formed of two lengths of flat material pivoted at their middles and a spacer arranged between the lengths of material at the pivot to separate them. By pivotally connecting the arms together the bridge can be adjusted to suit the width of timbers to which it is to be applied, and the distance between such timbers. Hence bridges can be made in quantities before their application, since they are readily adjusted to the various arrangements necessary.

**BOOK-REST.**—WILLIAM R. RATHVON, Florence, Colo. The book-rest is designed to hold a number of books in convenient position for reading and is specially adapted for use by students so as to hold text and reference books in positions where they may be readily used.

**MAIL-BOX.**—WILLIAM H. WALKER, Degraff, Ohio. The mail-box is of that type employed for collection and distribution of mail. The object of the present invention is to provide a novel, simple mail-box of this type which is well adapted for the collection and distribution of mail in rural districts, the device being secure, easy to operate, and provided with means for indicating to a person at some distance if there be mail in the box or not.

**FISH-TRAP.**—PEDER M. BENSETH, Fairhaven, Wash. The invention is a trap for salmon, having the lead and heart as heretofore but having the pot and the other secondary inclosures of the trap communicating with the side of the trap as contradistinguished from the end, so that the pot and the spiller will bear at right angles to the lead instead of in range therewith. Thus, the secondary inclosure will lie directly in the path of the fish returning against the flood tide and fish will then pass by a natural course into the secondary inclosures of the trap.

**GAME APPARATUS.**—GEORGE C. FELTER, Haverstraw, N. Y. Counters are employed in this game, which counters are manually moved on a figured board, according to prescribed rules which may be similar to those for checkers and chess. Special rules have been drawn up by the inventor and a special board devised, so that considerable skill will be required and much amusement afforded.

**GATE.**—HILL H. HILLERSON, Elliott P. O., Ford County, Ill. Mr. Hillerson has devised an improvement in swinging or hinged gates, and has invented an improved means for opening and closing the gate and latching and unlatching the gate when in its opened or closed position.

**SHADE-HOLDER FOR CANDLES.**—FRANKLIN E. HOWARD, Buffalo, N. Y. The shade-holder for candles is arranged for convenient attachment to a candle and is readily adjusted to bring the shade in proper position to the candle-flame, thereby securing the desired protection from the rays of the flame.

**BEER FILTER AND COOLER.**—LEROY A. WESTON, Adams, Mass. The beer filter and cooler is to be built in the side wall of an icebox with only the dispensing faucet and valve projecting outside. The body of the cooler containing the filter is contained within the icebox-chamber to be cooled thereby.

## Designs.

**DESIGN FOR A SILVERSMITH'S STOCK.**—PETER J. GORDON, Manhattan, N. Y. The leading features of the design consist in a scroll and in the representation of floral snowballs, pendant from the scroll.

**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.

## 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.  
MUNN & CO.

Marine Iron Works. Chicago. Catalogue free.

**Inquiry No. 1383.**—For one 25 h. p. upright engine of best make.

**TURBINES.**—Lefell & Co. Springfield, Ohio, U. S. A.

**Inquiry No. 1384.**—For dealers in second-hand commutators of 50 or 110 volts for a 1½ h. p. dynamo.

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

**Inquiry No. 1385.**—For dealers in second-hand gasoline engine of 1 or 1½ h. p.

**WATER WHEELS.**—Alcott & Co., Mt. Holly, N. J.

**Inquiry No. 1386.**—For the manufacturers of the Lotrent sliding door hanger.

**Yankee Notions.** Waterbury Button Co., Waterbury, Ct.

**Inquiry No. 1387.**—For dealers in castings for ½ or ¾ h. p. gasoline engine for a tandem bicycle.

**Gasoline Lamps and Systems.** Turner Brass Works, Chicago.

**Inquiry No. 1388.**—For the manufacturers of a knife with two blades, celluloid handle adapted for inscription under celluloid.

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

**Inquiry No. 1389.**—For manufacturers or dealers in sheet aluminum.

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

**Inquiry No. 1390.**—For manufacturers of machinery for making articles out of aluminum.

**For Sheet Brass Stamping and small Castings,** write Badger Brass Mfg. Co., Kenosha, Wis.

**Inquiry No. 1391.**—For manufacturers to make to order miniature objects, such as men, dogs, horses, etc., from 2 inches to 2 feet in height. Also for paper dolls.

**Rigs that Run.** Hydrocarbon system. Write St. Louis Motor Carriage Co., St. Louis, Mo.

**Inquiry No. 1392.**—For manufacturers of well casings.

**Sheet, bar, rod or wire, cut, formed, any shape.** Metal Stamping Company, Niagara Falls, N. Y.

**Inquiry No. 1393.**—For a machine for threshing, hulling and cleaning rice.

**Ten days' trial given on Daus' Tip Top Duplicator.** Felix Daus Duplicator Co., 5 Hanover St., N. Y. city.

**Inquiry No. 1394.**—For brick machinery for making pressed brick.

**SAWMILLS.**—With variable friction feed. Send for Catalogue B. Geo. S. Comstock, Mechanicsburg, Pa.

**Inquiry No. 1395.**—For an amplifying telephone receiver.

**Machinery designed and constructed.** Gear cutting. The Garvin Machine Co., 149 Varick, cor. Spring Sts., N. Y.

**Inquiry No. 1396.**—For brass tubing, such as is used in making pen or pencil holders.

**Kester Electric Mfg Co's, Self-fluxing solder** saves labor, strong non-corrosive joints, without acid. Chicago, Ill.

**Inquiry No. 1397.**—For parties to make pen or pencil holders in quantities to order.

**Designers and builders of automatic and special machines of all kinds.** Inventions perfected. The W. A. Wilson Machine Company, Rochester, N. Y.

**Inquiry No. 1398.**—For the manufacturer of The Home Sharpener, an emery wheel attachable to any sewing machine.

**INVENTORS, ATTENTION!**—Incorporate your companies in South Dakota, Charter fee, \$10. Laws most liberal in United States. Address Box 6, Pierre, S. D.

**Inquiry No. 1399.**—For manufacturers of electric automobile trucks or wagons for carrying not less than 3,000 pounds.

**The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine** is built by the De La Vergne Refrigerating Machine Company, Foot of East 138th Street, New York.

**Inquiry No. 1400.**—For machines for making butcher skewers.

**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.

**Inquiry No. 1401.**—For machinery for separating materials in refuse, and afterward grinding and mixing, after which it is pressed into balls, bricks, etc.

**ENGINEER.**—Wanted by a practical Cornell man a position as assistant superintendent in a good going concern. Would invest capital if arrangements can be made. Address M. B., Box 773, New York.

**Inquiry No. 1402.**—For manufacturers of electric belts.

**Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co.,** 361 Broadway, New York. Free on application.

**Inquiry No. 1403.**—For manufacturers of nickel or nickel alloy tubes for gas engines.

**SEEN FROM THE CAR WINDOWS.**—The route of the Lackawanna Railroad between New York and Buffalo is one of the unusual attractions to lovers of scenery. It passes through the most picturesque portion of Northern New Jersey, through the famous Delaware Water Gap, and climbs the Pocono Mountain, disclosing at every turn beautiful distant views of the mountains and valleys of Eastern Pennsylvania. At Scranton it passes through the coal region, and the scene from the car windows is a revelation of the enormous extent of the coal industries of the vicinity. The entire trip is enlivened by diversified scenery of lakes, mountains, streams and thriving cities. The management of the Lackawanna is leaving nothing undone that can add to the comforts of their patrons.—Official Railway Guide.

**Inquiry No. 1404.**—For shaping machinery used in making electric light, telephone lighters, railway cross arms and borer for same.

**Inquiry No. 1405.**—For machinery for making insulating pins.

**Inquiry No. 1406.**—For dealers in figured wood for veneering purposes.

**Inquiry No. 1407.**—For launch hulls of steel 13 to 30 feet long to be driven by gasoline motor.

**Inquiry No. 1408.**—For manufacturers of paper tubes for cigarette making.

**Inquiry No. 1409.**—For addresses of manufacturers of machinery for the separation and preparation of American asphalt, both sand and rock.

**Inquiry No. 1410.**—For parties to manufacture a portable bootblacking device, consisting of tricycle and stand combined.

## Notes &amp; 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.

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.

(8367) H. M. S. asks: 1. In building wired for three-wire system is it possible to install a single dynamo without making radical change in wiring? A. No alterations in wiring are needed. Connect the middle wire to one pole of the dynamo and the two outside wires to the other pole. 2. What horse power gas engine with jackshaft is required to pull dynamo of 25 to 30 16 candle power, 110-volt lamps? A. It would be advisable to have a 5 horse power engine.

(8368) G. M. M.: Referring to Query 8346, A. B. asks: "What is an induction motor?" I would like to ask: What is a short-circuited armature? A. A short-circuited armature is one in which the coils have no connection with the field but return upon themselves. Each coil has its ends connected together. The current which flows in a coil is generated there by induction of the rotating field. The field of an induction motor receives a polyphase current whose impulses are a fraction of a wave length behind each other. This causes a north pole to move around the field from pole-piece to pole-piece like the hand of a clock, for example, passing the hours. A south pole moves also around the field opposite to the north pole. These rotating poles generate in the coils of the armature strong currents which produce a powerful attraction and pull the armature around. This, in the fewest words possible, is the armature of an induction motor, which is in the books called a "short-circuited armature." If the armature were only a disk of iron it would rotate in the same way. It is usual, however, to wind coils upon the iron of the armature as we have described and short-circuit them, hence the name. For a fuller treatment of the subject, see Houston and Kenelly's "Alternating Currents," price \$1; or Thompson's "Polyphase Currents," price \$5, both by mail.

(8369) D. B. E. says: Will you kindly let me know through "Notes and Queries": 1. Whether acetylene gas can be used in an ordinary gas engine, and if so, what precautions are necessary? A. Acetylene has been used to a small extent in France, more for automobiles than for stationary motors. It has been on trial in the United States, but with what results we do not know, other than that it costs more for a given power than gasoline. It requires no other precaution than is necessary in lighting by acetylene. A smaller quantity than of gasoline vapor is needed for equal effect; its explosive power being greater than gasoline for equal measures of vapor and gas.

(8370) R. W. U. writes: Will you please answer in your paper, why it is so hard to walk to the forward end of a car when the brakes have set hard? A. When the motion of a car is slowing up quickly by the application of the brakes, it causes everything not fixed to the car to have a tendency to slide forward. A person standing or walking in the aisle has his relative momentum with that of the car so disturbed by the difference in motion as between himself and the car that he has a tendency to pitch forward, which breaks his control over his steps, and he finds himself at sea. The trembling motion of the car caused by the irregular slipping of the brakes adds to the nervous disturbance and thus makes walking at such times very difficult.

(8371) R. W. T. writes: In reply to "Notes and Queries" (8296), August 10: My father, who was an officer in the Indian navy and had often been to Bahrein, told me about the water supply there and method of obtaining same. He said that on calm days you could see the action of the submarine spring on the surface of the sea, so I think it could only have been at a depth of about 20 feet. C. P. R. has evidently not considered the difficulty of locating a spring in 200 feet of water. I also remember my father never mentioned that the divers used sinkers to carry them down, as he said was done by the Persian Gulf pearl fishers.

(8372) E. W. I. asks: 1. How many light dynamo will a 1½-horse power motor run? A. Perhaps a dozen 16 c. p. 2. How many candle-power lamp will a telephone magneto call bell light, which is wound to 10,000 ohms; also will above magneto ignite a gas engine? A. It will not light a lamp, nor do we think it will ignite gas.