

RECENTLY PATENTED INVENTIONS.

Electrical Devices.

COMMON-BATTERY LOCK-OUT TELEPHONE.—M. P. BOONE, Peru, Ind. This invention consists in the novel construction and arrangement of the electromechanical parts and their cooperating circuits, in which when the line is clear and no party is talking a lock-out electromagnet at a subscriber's station connected between the earth and a wire leading through an impedance-coil to one side of the battery will be inoperative; but if a circuit be established between the two lines (through a telephone bridged on the line, for instance) then all the subscribers' lock-out electromagnets connected as described become operative to lock-out.

ELECTRICAL BINDING-SCREW OR TERMINAL.—M. BOUCHET, 22 Rue Alphonse de Neuville, Paris, France. The invention relates to an electrical binding-screw or terminal designed to facilitate the insertion of the conductor, and to completely protect its stripped end, to insure a perfect electrical contact, and to resist any stress to which the conductor may be accidentally subjected, the device if made principally of insulating material being capable of insuring a connection completely insulated from its surroundings whatever may be the diameter of the conductor clamped therein.

Of Interest to Farmers.

PLOW.—J. BEARD, Westport, Cal. In the present patent the invention refers to plows, and more particularly to the shape given to the same in order to enable it to cut a comparatively wide furrow with small draft upon the horse and without liability to foul when used in sticky soil. Upon actual trial Mr. Beard has found that the plow cuts as claimed above and without additional fatigue upon the part of the horse or other animal drafting the plow.

Of General Interest.

METALLIC WINDOW.—S. U. BARR, New York, N. Y. In the present patent the object of the inventor is the provision of a new and improved metallic window which is simple and compact in construction, completely air-tight and dust-proof, and arranged to permit convenient opening and closing of the sash.

SHOE-LACE FASTENER.—C. DELANO, Valparaiso, Chile. In the present patent the invention relates to boots and shoes and its object is the provision of a new and improved shoe-lace fastener arranged to securely hold the ends of the shoe-lace or tie-string in position without requiring the tying of knots.

FENCE.—J. C. CHIBER, Texas, Wis. The fence comprises the combination, with a base-piece having a series of holes in its side, and a post pivoted thereto, of fence-panels extending in opposite directions from the post and lapped upon the same, an eyebolt passing through the panels and the post and serving to secure them together, and a brace pivotally connected with the eyebolt and having its free end bent laterally at a right angle, whereby it is adapted to engage the holes in the base-piece.

COPY-HOLDER.—ONE HARTLEY, Nashville, Tenn. The invention in the present patent relates to devices for holding copy, and has for its principal objects the provision of a holder which will efficiently support copy in various forms and which may be readily adjusted to permit this or to meet the particular requirements of the user.

HOSE-SUPPORTER.—E. S. DORMAN, Plainfield, N. J. The aim of the inventor is to provide a supporter made entirely out of metal and in two pieces only, the construction being such that it is light, durable, and economic and will automatically fit to any leg without alteration or adjustment, and also to provide a device which will be cool when worn, and which will in no manner interfere with the circulation of the blood.

ORE-ROASTING KILN.—J. McNAB, Catonsville, Md. In the present instance the invention is an improvement in ore-roasting kilns, and particularly in kilns designed for use in extracting sulfur from pyrites in the manufacture of sulfuric acid. The slabs forming the arches of the fire-places may be made of fire-clay, soapstone, or similar material.

HARMONICA OR MOUTH-ORGAN.—H. H. NEILSON, Perth, Ontario, Canada. The invention refers more especially to harmonicas or mouth-organs of that type in which a longitudinally-slidable mouthpiece is employed upon the instrument for the purpose of facilitating the playing as well as preventing soreness of the lips of the player by abrasive contact of the lips with portions of the instrument in the act of playing thereon. This class has many disadvantages and objections, such as, too much friction between instrument and mouthpiece, unpleasant tingling of the lips in playing, impairment of musical tones, etc., which Mr. Neilson's invention overcomes.

Hardware.

NUT-HOLDING WRENCH.—A. SCHURR, JR., Lloyd, Mont. An object of this inventor's improvement is to provide novel means for unscrewing the nut from an axle-spindle, so that the vehicle-wheel thereon may be removed for a lubrication of the axle-spindle, and also for a replacement of the wheel and nut on the spindle without directly handling the nut, thus

avoiding soiling of the hands with the lubricant usually smeared over the nut.

Household Utilities.

BEDSTEAD.—C. H. GASAU, New York, N. Y. This invention has reference to improvements in bedsteads, an object being to provide a bedstead of novel construction that may be readily adjusted as to length, that may be quickly changed to form a crib, and that may be compactly folded for storage or transportation.

Machines and Mechanical Devices.

APPARATUS FOR CUTTING PLASTIC MATERIAL.—W. NIEBUR, JR., New York, N. Y. This device cuts plastic material into blocks or cakes. It is especially intended for cutting small cakes of butter from a large mass, and by means of the improvement cakes of any size may be rapidly cut without handling the cakes in any way. This is a decided advantage over the devices heretofore commonly employed for the purpose, since when the small cakes are formed handling of the cakes may tend seriously to misshape the cakes of butter. The present is a continuation of this inventor's copending application formerly filed.

TRANSOM-LIFTER.—J. W. NEFF, Morgantown, W. Va. The object had in view by Mr. Neff is the provision of means and devices adapted for working or lifting transoms which may not only be cheaply manufactured, but simple in construction and effective for easy working of pivoted or swinging transoms and windows in general having similar modes of attachment to their support.

Prime Movers and Their Accessories.

WAVE-MOTOR.—F. S. KEYES, Warren, Mass. In this patent the invention relates to apparatus for utilizing the energy of such movements in large bodies of water as waves. Its principal objects are the provision of an apparatus of this character in which the intermittent movement will be transferred into a continuous force by integrating the energy of successive waves and different parts of the same wave.

STARTING-CRANK FOR EXPLOSIVE-ENGINES.—W. H. SCHOONMAKER, Montclair, N. J. This crank is adapted especially for use in connection with internal-combustion engines in manually starting or "turning over" the same. Heretofore a common disadvantage and danger have existed in the backward turns of the engines, due to premature explosions during the starting operation, thus causing the crank or starting device to be violently torn from the hands of the operator and frequently injuring him. The invention overcomes this by providing a crank which as the engine "kicks back" automatically releases its connection with the engine, so that the engine-shaft may perform one or more revolutions without carrying the crank with it.

STEAM-BOILER.—G. O. STURTEVANT, Athol, Mass. Mr. Sturtevant's invention is an improvement in steam-boilers, and with his construction of boiler and support he is able to secure a maximum of heat, since all the radiation from the furnace-wall is utilized in heating the water. The radiation from the boiler is also utilized to a considerable extent.

Railways and Their Accessories.

RAILROAD-TRACK.—E. F. SEIDER, Upper Sandusky, Ohio. The inventor's object is to provide together with other improvements, novel devices for securing the rail-fastening spikes in connection with a metal rail-supporting plate. He is able to fasten a rail to a metal tie or sleeper, the latter to be a substitute for the wooden tie now generally employed. The tie prevents rails from spreading and rails may be laid more readily and uniformly, and require no gage in order to get proper width of track and keep it in line. Ballast can be packed around the tie so it will not creep or slide. Tie is made of any length, and where switches are run in the ties can be made any lengths and fasteners applied to any part of top plate to secure the rails.

SPEED AND DISTANCE INDICATOR.—E. SCHULTZ, Berlin, Germany. This invention consists in alternately and at equal intervals of time coupling and uncoupling a pointer to and from a rotating shaft, speed of the shaft being proportional to speed of traveling to be measured and the said pointer being adjusted to return automatically to its zero position under spring-pressure or by gravity or the like. More than one pointer can be used, in which case they are preferably so operated that one is coupled to the shaft at the moment at which another pointer is uncoupled from the latter. It may be used on railway-vehicles or other vehicles, also as a tachometer, or in cases where converting a rotary movement into rectilinear or circular movements rising from and falling to zero again.

Pertaining to Recreation.

TOY.—O. HAMMARLUND, New York, N. Y. The inventor provides a number of blocks having magnets therein. The blocks are preferably placed in a box, closable at will. In conjunction with the box he employs a device, a "detector-tube," which comprises a tubular body with a freely-mounted magnetic needle therein. By placing the blocks in the box and holding the detector over the same the needle

will be actuated by the variously-positioned magnets in the box, and if the positions of the needles which correspond to the particular blocks has been memorized he can tell the locations of blocks within without removing the cover of the box.

Pertaining to Vehicles.

DUMPING-WAGON.—C. CARROLL, Chicago, Ill. In this case the invention is an improvement in dumping-wagons, and has for an object, among others, to provide a novel construction for supporting the screws and the traveling nuts for operating the lifting-rods connected with the body. The construction avoids exerting the weight of the load upon the screws in such manner as to bend the same downwardly, and will be found very effective.

WHEEL.—P. J. CAESAR and E. SCHELL, St. Paul, Minn. The object in this instance is to construct a resilient wheel which will wholly or partly avoid the necessity of springs on the vehicle with which the wheel is used. This end is attained by a certain peculiar connection between the spokes and rim of the wheel, which involves a spring or cushion and which results in a resilient action between the spokes and rim.

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. 7243.**—For manufacturers of springs. For mining engines. J. S. Mundy, Newark, N. J.
- Inquiry No. 7244.**—Wanted, the names of a few exporters of rosin.
- "C. S." Metal Polish.** Indianapolis. Samples free.
- Inquiry No. 7245.**—For makers of key ring tags and dies for marking the same.
- Drying Machinery and Presses.** Biles, Louisville, Ky.
- Inquiry No. 7246.**—For manufacturers of patented, malleable household articles.
- 2d-hand machinery.** Walsh's Sons & Co., Newark, N. J.
- Inquiry No. 7247.**—For manufacturers of liquid carbonic acid.
- Perforated Metals,** Harrington & King Perforating Co., Chicago.
- Inquiry No. 7248.**—Wanted, the addresses of manufacturers of window sash locks.
- Handle & Spoke Mch.** Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.
- Inquiry No. 7249.**—Wanted, a compressed air fire alarm whistle.
- Adding, multiplying and dividing machine,** all in one. Felt & Tarrant Mfg. Co., Chicago.
- Inquiry No. 7250.**—Wanted, a portable acetylene gas mine lamp.
- Sawmill machinery and outfits manufactured by the Lane Mfg. Co.** Box 13, Montpelier, Vt.
- Inquiry No. 7251.**—Wanted, the names of Brown machinery makers.
- I sell patents.** To buy, or having one to sell, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y.
- Inquiry No. 7252.**—For manufacturers of paper bag machinery.
- WANTED.**—Patented specialties of merit, to manufacture and market. Power Specialty Co., Detroit, Mich.
- Inquiry No. 7253.**—For manufacturers of furniture, also of goods which can be sold by mail.
- The celebrated "Hornsbly-Akroyd" Patent Safety Oil Engine** is built by the De La Vergne Machine Company, Foot of East 138th Street, New York.
- Inquiry No. 7254.**—For machinery used in making artificial granite or marble, as, for instance, cement blocks with a facing or veneering, or crushed marble which can be polished, same as solid marble.
- Gut strings for Lawn Tennis, Musical Instruments,** and other purposes made by P. F. Turner, 46th Street and Packers Avenue, Chicago, Ill.
- Inquiry No. 7255.**—For a device to measure and fill cans.
- Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, wood fiber machinery and tools.** Quadriga Manufacturing Company, 18 South Canal Street, Chicago.
- Inquiry No. 7256.**—Wanted, the name and address of the makers of the steel termed "Invar."
- Absolute privacy for inventors and experimenting.** A well-equipped private laboratory can be rented on moderate terms from the Electrical Testing Laboratories, 548 East 80th St., New York. Write to-day.
- Inquiry No. 7257.**—For makers of a collapsible box or barrel to be used for crockery in large packages.
- WANTED.**—The patents or sole agency for Britain and France, of new machines and articles used in the Brewing and Allied Trades. Highest references given and required. State best terms with full particulars to "Wideawake," care of Street's Agency, 30 Cornhill, London, England.
- Inquiry No. 7258.**—For manufacturers of heavy felt, such as felt shoe soles are made of.
- Inquiry No. 7259.**—For manufacturers of large springs, such as are used for large music boxes, clocks, etc.
- Inquiry No. 7260.**—Wanted, prices of machinery, and also estimate on complete outfit for the manufacture of soap, to produce from 3,000 to 15,000 pounds a day of 10 hours.
- Inquiry No. 7261.**—For dealers in the Febeardsley Axle Cutter, or the Beardsley Axle and Thread Cutter.
- Inquiry No. 7262.**—For a machine for making round toothpicks.
- Inquiry No. 7263.**—For manufacturers of leather-board or other leather composition, likely to use powdered leather or leather turnings.
- Inquiry No. 7264.**—For manufacturers of bonbons and fondants.



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.

(9763) **W. A. W. asks:** Will you please inform me what number of watts will be consumed per hour by one T. H. constant-current series open arc on 50 volts and 9.6 amperes? A. A lamp consuming 9.6 amperes at 50 volts will in one hour consume 480 watt-hours (9.6 x 50). A watt-hour is one watt exerted for one hour. Your lamp uses 480 watts all the time it is lighted. Meters generally register watt-hours; 480 watts for one hour are 480 watt-hours. The question as you put it cannot be answered. Watts alone do not imply time. The time must be specified. Your lamp consumes 480 watts for any time it is lighted. In one hour it therefore consumes 480 watt-hours of electrical power. See Swoope's "Practical Electricity," page 218, price \$2.

(9764) **A. A. B. asks:** I wish to ask through your paper if it is not possible for the manufacturers of incandescent light bulbs to complete the bulb without having to form the little sharp point on the rounded end? A. Incandescent lamp bulbs are made without any point upon the large end. They may be had from dealers in electric supplies.

(9765) **C. L. H. asks:** Can you tell me if any one makes an electric arc that could be used as a blowpipe? Something after the diagram sent. I wish to use it to melt small amounts of platinum. A. It is not difficult to arrange an electric arc blowpipe for melting metals, or soldering, in the manner your sketch shows. We should use the current which passes through the carbons for the magnet. Put the magnet of a few turns of wire in series with the carbons. Adjust the number of turns of wire and the distance of the magnet from the arc to produce the blowing power required. The apparatus is so simple that no special instruction is required for setting it up or operating it.

(9766) **J. W. M. says:** Would be glad to have you publish a decision of the following dispute: One party claims that a piece of iron, stone, or a piece of wood water-soaked until heavy enough to sink below the surface, would sink to the bottom of the ocean, no matter what the depth is at the point the object is placed in the water. The other party claims that they would remain suspended in the water at varying depths from the surface depending on their specific gravity, the iron even not reaching the bottom in the deeper parts of the ocean. A. A body which will sink at all in water will sink to the bottom. Sea water is compressed but 44 millionths by one atmosphere, and at higher pressures it is compressed less. Metals are more compressible than water. Hence it is seen that a piece of metal will have its density increased more as it sinks than the sea water will, and it will sink faster as it sinks deeper.

(9767) **C. H. B. asks:** Will you please tell me whether or not the angle formed by the sun's rays with the earth's surface at forty-five degrees of latitude, when the sun is directly above the equator, is forty-five degrees? I ask this question to settle a difference of opinion. A. In latitude 45 deg., when the sun is vertically over the equator its rays make an angle of 45 deg. at noon with a horizontal plane; but not at any other hour of the day.

(9768) **J. E. B. asks:** Please answer the following questions. They are of great importance to your reader. 1. Is force an inherent property of matter? 2. Is life a force, differing from gravitation or chemical affinity only in degree? Or is it an entity, separate and independent of matter? 3. Are life, soul, and form identical? If not, what is the difference? 4. Is the brain the reasoning organ, or the organ of that which reasons? 5. Is it the quantity or the quality of brain, or both quality and quantity of brain combined, that are responsible for the degree of reasoning power possessed by the individual? 6. Can animals be hypnotized? If not, why not? A. The questions which you submit are truly of great importance, but they can hardly be classed as scientific questions in a physical sense. They are rather metaphysical or philosophical, and one's answers would be very powerfully influenced by his general views upon philosophy. We should hesitate to project a discussion of these matters into our columns, since when one has given his answer, his an-