RECENTLY PATENTED INVENTIONS.

Electrical Devices.

LAMP.—G. KELLER, New York, N. Y. The invention provides an improved lamp for electric lights, gas lights, and the like, arranged to shed a powerful but extremely soft light. This result is accomplished by forming the lamp globe with a chamber in which water or any other desired fluid may be contained, and through which the light must pass.

RAILWAY SIGNALING SYSTEM.—K. SCHOLZ, Liebauthal, near Eger, Bohemia, Austria-Hungary. It is well known that the resistance of a spark gap is materially reduced when ultra-violet rays are caused to shine upon it. Mr. Scholz makes use of this property in his railway signaling system to prevent both head-on and rear-end collisions. In the latter case the locomotive driver of the first train being signaled to hurry on ahead of the second train.

Of Interest to Farmers.

INSECT-CATCHER.—E. J. KRENEK, Lagrange, Texas. This insect-catcher is a device which may be strapped to the body in such position that it may be readily held under a plant to catch the insects as they are removed. The device contains coal oil, or any other liquid into which the insects will drop, and which will prevent their escape.

CANE-PLANTER.—ANTONIO MARIANI, Yauco, Porto Rico. This invention relates to improvements in machines for planting sugar-cane, the object being to provide a planter of simple and comparatively inexpensive construction by means of which ground excavations for receiving the sheets or lengths of cane may be quickly and evenly made and the dirt covered over the cane.

GUANO-DISTRIBUTER.—F. Q. FOKES, Montezuma, Ga. The purpose of the invention is to provide an attachment for a plow, whereby guano or other fertilizer may be distributed in a uniform manner in the furrow as the furrow is being made. The machine keeps the fertilizing material in constant agitation, and means are provided to regulate at will the supply distributed.

MOWING-MACHINE ATTACHMENT.—O. Z. BALDWIN, Merrickville, N. Y. This mowing machine attachment is adapted to be used in conjunction with the ordinary lift lever of the cutter bar, and consists of means for raising the inner shoe of the cutter bar at any time for the purpose of clearing an obstruction without necessarily interfering with the outer end or outer shoe of the cutter bar, which portion of the bar remains in action.

Of General Interest.

SECURING DEVICE.—G. D. WATSON, Parkersburg, W. Va. Mr. Watson's invention relates to devices for securing or anchoring such elements as the tubes of oil wells, and the like. Its principal objects are to provide a device of this character which may be brought into engagement with or released from the well casing at any position thereon.

PIN-HOOK.—L. E. RUSSELL, Deposit, N. Y. The device is adapted for attachment to a garment, and is especially applicable as an eyeglass hook or holder. Owing to an ingenious design, the device may be constructed from one piece of material, and conveniently applied to a garment without danger of becoming entangled with the fabric.

DRILL-CHUCK.—G. A. ORR, Cripplecreek, Colo. The object of Mr. Orr's invention is to provide an improved arrangement for securing the drill in the chuck without the use of nuts and bolts and similar fastening devices, which are likely to work loose from constant shock and vibration.

LADY'S STOCK-COLLAR.—D. KISCH, New York, N. Y. The collar is so constructed that one section can be separated from the other, and the same section replaced or a similar section substituted, it being possible to connect or disconnect the sections in an expeditious and convenient manner, and to so place the sections that one will appear integral with the other. The section which is close to the neck may be made of washable material, so that the entire collar need not be thrown away when the upper section becomes soiled.

FIFE.—J. JENKS, Mount Auburn, Iowa. The object of this invention is to provide an improved fife arranged to permit the user to quickly and conveniently change the instrument from a B-key fife to a C-key fife, or *vice versa*, and to permit of producing full and loud tones by a proper admission of the air from the air duct of the mouthpiece into the main tube.

Hardware.

ADJUSTABLE-SQUARE.—R. MACD. DIXON, Stockton, Cal. The invention relates to measuring instruments, and its object is to provide an improved adjustable square, which is simple and durable in construction and arranged to permit convenient adjustment of the blade relative to the base, to set the members of the square accurately at a right angle one to the other.

SAW-SWAGE.—C. J. ANDERSON, Eureka, Cal. The device comprises two die cams, which are associated with certain peculiar devices for mounting and operating them, and by means of which the points of the saw teeth may be easily and accurately spread, drawn out, or flattened to any extent desired, thus making it necessary only to slightly grind the teeth, in order to finish the work of sharpening the saw.

Heating and Lighting.

ACETYLENE-GAS GENERATOR.—E. A. CHAMBERLAIN, Los Angeles, Cal. Mr. Chamberlain's invention is an improvement in that class of acetylene gas generators in which means are provided for automatically regulating the supply of water to the carbide in accordance with the pressure of gas required. There is no liability of overheating the apparatus, and it can be easily and quickly cleaned and recharged with carbide and water.

Household Utilities.

SASH-FASTENER.—G. A. ORR, Cripplecreek, Colo. The invention belongs to that class adapted for use in connection with sliding sashes, and the object is to simplify the construction of such fasteners, and to provide a mechanism which may be operated in a simple manner, so as to hold the sash in an elevated or open position, or in a locked position when closed.

Machines and Mechanical Devices.

ESCAPEMENT FOR TYPE-WRITING MACHINES.—W. WALL, New York, N. Y. The object in view is the provision of an improved mechanism, which is so sensitive in action and in which the friction is minimized to such an extent as to require a light tension on the paper carriage. The mechanism embodies an improved form of escapement wheel, that secures proper clearance of the dogs of this mechanism and controls the paper carriage in an efficient and satisfactory manner.

Railways and Their Accessories.

VALVE.—A. I. PERRY, New York, N. Y. Mr. Perry's invention provides a valve for controlling such fluid-pressure brakes as are used upon street cars. The principal object in view is to afford means for applying the pressure proportionately to the movement of the valve handle.

STATION-INDICATOR.—H. R. NELSON, New York, N. Y. Mr. Nelson's invention comprises a casing which may be placed in a railway car or the like. Within the casing is a roll containing the names of stations along the route. By means of a trip located near each station, the roll is turned to bring the required name in view.

RAILWAY-TIE.—H. S. DELAMERE, Cloverdale, Cal. Mr. Delamere's tie is light and strong, and arranged to permit of expansion and contraction of the track system. It offers ample surface for contact with the ballast to hold it firmly in place. The rails are bolted upon yieldable blocks, so that the vibration resulting from the passage of trains is absorbed thereby. A peculiar shape of bolt head is provided, which is much stronger than the customary flat head.

Pertaining to Vehicles.

RECHARGING-VALVE.—LEONARD F. WILLIAMS, Thurber, Texas. The object of this invention is to permit recharging the auxiliary reservoirs of an automatic air brake system without necessarily involving a release of the brakes. This end is obtained by means of certain ingenious devices.

HAME.—G. B. HOCK, Freeland, Pa. The invention relates to hames for heavy draft harness, and has for its object to provide novel draft attachments for the wooden bodies of a pair of hames that greatly strengthen them, distribute the draft strain equally upon the hames, and facilitate the disconnection of the draft-tug connections from the hames and also the breast-rings therefrom, when their worn-out condition necessitates the replacing of new ones.

VALVULAR MECHANISM.—H. S. AYLING, Bloomington, Ill. A duplex air pump is now commonly employed in connection with fluid-pressure brake systems in which the compressor pistons come to a prolonged rest at the end of each stroke, and in which the inlet valve for the motive steam is held open until the return movement of the piston has begun. This is disadvantageous, for with the inlet valve thus open the steam in the compressor cylinder in time equalizes the boiler pressure, which results in a much higher pressure in the pump cylinder and a greater consumption of steam that is necessary. Mr. Ayling's invention involves a peculiar arrangement of the valves, which causes the steam inlet valve to close as the piston reaches the end of its stroke and the exhaust to be held covered during the time that the piston dwells at the end of its stroke.

Designs.

DESIGN FOR A TABLE.—A. MCKAY, Gretna, La. Mr. McKay has invented a new, original, and ornamental design for a table, which comprises the combination of scrolls and medallions, forming an apron which covers the upper ends of the table legs. The table is thus given a decidedly Oriental appearance.

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. 7369.—Wanted, name of mill rolling very light steel belting 8 inches to 32 inches wide, and flexible enough to work over pulleys 5 inches diameter.

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

Inquiry No. 7370.—For manufacturers of non-conducting cement for use in electric heater work to hold resistance wires in place.

Drying Machinery and Presses. Biles, Louisville, Ky.

Inquiry No. 7371.—For manufacturers of nickel-plated gongs, which are tuned in concert pitch.

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

Inquiry No. 7372.—Wanted, name of manufacturer who constructed the buckboard automobile.

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

Inquiry No. 7373.—For parties making electrotypes.

I sell patents. To buy, or having one to sell, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y.

Inquiry No. 7374.—For manufacturers of scales that will weigh and automatically register ice.

WANTED.—Patented specialties of merit, to manufacture and market. Power Specialty Co., Detroit, Mich.

Inquiry No. 7375.—Wanted, to buy the plans of a charcoal kiln.

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

Inquiry No. 7376.—For manufacturers of cleaning machines for Raiz or Rootlets as they are extracted from the soil.

WANTED.—Ideas regarding patentable device for water well paste or mucilage bottle. Address Adhesive, P. O. Box 773, New York.

Inquiry No. 7377.—For manufacturers of lawn mowers, having a reciprocating sickle similar to a mowing machine.

WANTED.—First-class draftsmen on Automobile Tools. Apply to Superintendent, Pope Manuf. Co., Hartford, Conn.

Inquiry No. 7378.—For manufacturers of soft iron or soft steel punchings of special make for laminated magnets.

FOR SALE.—A small manufacturing plant in operation, well equipped for manufacturing wrought specialties. Reason for selling, other interests. Address Box 1163, Hartford, Conn.

Inquiry No. 7379.—For manufacturers of gasoline irons for tailors and launderers.

Mechanical devices of brass, aluminum, and kindred metals manufactured for inventors and patentees, and marketed on royalty, when desired. Imperial Brass Mfg. Co., 241 So. Jefferson St., Chicago, Ill.

Inquiry No. 7380.—For manufacturers of steel tempered for mill picks, same as are used on burr stones.

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. 7381.—For manufacturers of stump pullers.

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. 7382.—For manufacturers of men's suits, overcoats, hats and caps, shoes, gloves, underwear, etc.

Manufacturers of all kinds sheet metal goods. Vending, gum and chocolate, matches, cigars and cigarettes, amusement machines, made of pressed steel. Send samples. N. Y. Dieand Model Works, 508 Pearl St., N.Y.

Inquiry No. 7383.—For manufacturers of a mill for grinding raw vegetables to a pulp and extracting the juice therefrom; also machine for grinding and extracting juice from raw meat.

WANTED.—In a large manufactory, a skillful Mechanical Draftsman of practical experience and good executive ability. Give full particulars as to qualifications, experience and terms of service. D. G. N., Box 773, N. Y.

Inquiry No. 7384.—For manufacturers of hydraulic weighing machines.

WANTED.—An A 1 foreman to take charge of machine shop. Manufacturer of gas and gasoline engines and accessories. Address with references, Foreman, Box 773, N. Y.

Inquiry No. 7385.—For manufacturers of traction engines.

Inquiry No. 7386.—For manufacturers of outfits for boys to do electrical experiments with.

Inquiry No. 7387.—Wanted, address of "Gamble Leaf Hinge."

Inquiry No. 7388.—For manufacturers of sand blocking mill for foundry use.

Inquiry No. 7389.—For manufacturers of water wheels.

Inquiry No. 7390.—Wanted, address of manufacturer or inventor of advertising novelty or toy called Fano-Drome-Tone.

Inquiry No. 7391.—For manufacturers of small metal castings.

Inquiry No. 7392.—For makers of china kilns for firing hand-painted china.

Inquiry No. 7393.—For makers of collodion films for transfer work on china.

Inquiry No. 7394.—For makers of American-Haviland china.

Inquiry No. 7395.—For manufacturers of modern derricks and conveyors for loading and unloading heavy materials, such as long cedar poles, ties, logs from skidway to car; also for handling the materials up inclines from river to piling ground.

Inquiry No. 7396.—For manufacturers of duplicate laths; also tobacco presses.

Inquiry No. 7397.—For manufacturers of black oxide of copper; also caustic potash.

Inquiry No. 7398.—For manufacturers of lightning rods.

Inquiry No. 7399.—Wanted, address of parties doing electro-galvanizing.

Inquiry No. 7400.—For manufacturers of sheet lead, as used for putting up tea and spices.

Inquiry No. 7401.—For manufacturers of the latest cinematograph.

Inquiry No. 7402.—For manufacturers of soft sheet steel to take temper, etc.

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.

(9814) J. H. S. asks: In a great many electrical books and articles on electricity I have noticed the amperage of a certain piece of apparatus is stated, but the voltage is not mentioned at all. How are we to determine the number of watts consumed if the voltage as well as the amperage is not stated? I notice in the "rules and requirements of National Board of Fire Underwriters" they give the carrying capacity of wires in amperes alone. How are we to know whether the capacity they state is for 50 or 220 volts? In field winding we are told so many ampere turns are required per square inch pole face surface for a certain density. How are we to determine the number of turns required if we do not know how many amperes are going to flow over the wire when wound? A. It has been our experience to find both the volts and amperes of a dynamo or motor, or the volts and kilowatts given on the name plate. The carrying capacity of wires is given in amperes because it is amperes which the wires are to carry and not volts. The amperes heat the wires, and not the volts, and the higher the voltage the finer the wire required to carry its current. Hence volts are of no importance to the Fire Underwriters, except to classify the rules for wiring as they do for different voltages. The safety of people from shock depends upon the voltage and not upon the amperes. In the winding of a dynamo the current required to magnetize a field has been determined by the designer, who assumed the amperes and the size of wire to carry them when he determined the size of the magnet cores to give the desired voltage to the machine. Hence the ampere turns are known.

(9815) W. C. C. asks: 1. I have a five-bar telephone magneto, which I wish to use for another purpose than that for which it was made. To do this, the amperage must be raised or increased without reducing voltage below 150 volts. Can this be done by reducing resistance of armature, or how? A. You can increase the amperes of your magneto by winding the armature with the same number of wire as at present, but of a coarser size. 2. Will you please tell me where I can purchase tinfoil, with which to make a condenser? A. Tinfoil can be bought from Eimer & Amend, Third Avenue and 18th Street, New York city; or from Patterson, Gottfried & Hunter, 146 Centre Street, New York city. 3. If the above-mentioned magneto giving, say, 1-3 ampere and 500 volts, were connected in parallel with a dry battery, or any other kind, giving 1½ volts and 15 amperes, why would not the output be about 8 amperes and 250 volts on short circuit by striking an average? A. A circuit which has 1-3 ampere at 1,500 volts would have 1,500 ohms resistance by Ohm's law, $R = \frac{E}{C}$. Similarly a circuit with 15 amperes at 1½ volts would have 10 ohms of resistance. Now the rule for divided circuits applies. There is no striking an average in electric currents. To determine what current would flow over the external circuit it is necessary to know its resistance. The resistance of the battery is so low that it would send but little current into the magneto circuit, but the magneto would send its current divided between the battery and the external circuit, sending most of its current through that path which had the least resistance. 4. If a common induction coil giving from ½-inch to 1-inch spark, when excited by a battery, were excited by an electric dynamo giving less than ½ ampere, but high voltage, would there be any output to the induction coil, and how much? A. The high voltage of your dynamo and the low resistance of the primary of the induction coil would cause the dynamo to act as if it were on short circuit and heat the primary of the coil. There would be little output except in heat. We would suggest Swoope's "Practical Electricity," as a good book for one to get hold of the principles of the science so as to be able to judge many conditions and tell what effects would follow such arrangements as you have suggested.

(9816) H. J. M. asks: We have been recommended to you as being able to give us some information in regard to tables of the force of vapor in inches of mercury, weight of vapor per cubic foot of saturated air, weight

per cubic foot of dry air, tables of humidity of air or percentages of full saturation from dry and wet bulb, table of temperature of dew point of different states of hygrometer ranging from 140 to 210 deg. If you are unable to give us the desired information, can you direct us to any one who could do so? A. Nearly all, if not quite all, the tables for aqueous vapor are to be found in the "Smithsonian Physical Tables." Any special figures could always be obtained from the U. S. Weather Bureau, Washington, or from the forecast official at your own city station of the bureau. These officials are always pleased to be able to do a favor to any of the people.

(9817) N. O. J. asks: 1. If a coil gives 1½-inch spark with two Grenet batteries, will it give a 3-inch spark with four Grenet batteries? If the voltage and amperage are doubled in operating a certain coil, will the spark be twice as long? A. Doubling the number of cells in a battery for a coil will not double the spark length, although it will increase the length of the spark. The reason is that the internal resistance of the cells and connecting wires is added to the former resistance of the circuit. This cuts down the current below double the current given by half the battery. Nor will the spark length be doubled by doubling the voltage, if the amperes remain the same. The ampere turns are the measure of the magnetizing power of the primary circuit. Hence the spark length will not be increased except by increasing the amperes. 2. I have a dynamo that has an output of 40 to 50 volts at about 2 to 3 amperes. Is this too high a voltage or too high an amperage for the induction coil described in SUPPLEMENT No. 160? A. The coil of SUPPLEMENT No. 160 requires perhaps 3 to 10 amperes at a pressure of 6 to 8 volts. Your dynamo will require an external resistance if you connect it with the coil. Its voltage is too high.

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