

RECENTLY PATENTED INVENTIONS.

Electrical Devices.

**TELEGRAPH-TRANSMITTER.**—W. H. LEONARD, Mount Vernon, N. Y., and J. H. LEWIS, New York, N. Y. Devices which have been constructed for the purpose where the striking of a key will automatically transmit a character of the Morse alphabet upon a telegraph-line are open to many objections. They have to be wound up before they will operate; if the finger is kept too long upon a key it will transmit the same character repeatedly, and they are expensive in construction, therefore their use in practice is limited. The present device eliminates these disadvantages.

**TROLLEY.**—W. S. TICHENOR, Owensville, Ind. In Mr. Tichenor's patent, the invention has reference to improvements in trolleys for overhead electric-railway systems, the object being the provision of a trolley of simple and inexpensive construction and having shaft-bearings that are practically dirt and dust proof.

**MAGNETO-ELECTRIC GENERATOR.**—R. C. CROUCH and J. A. TITZEL, Sr., Newcastle, Pa. The invention relates to magneto-electric generators, the more particular object being to produce a type of generator suitable for the production of comparatively weak currents when subjected to movements—as, for instance, the movements of a person when the apparatus is carried in the pocket.

Of Interest to Farmers.

**PLOW.**—J. B. HUNTER, Woodlawn, Ill. One purpose in this invention is to provide a means for securing the share of a plow to the mold-board and the landside to the beam in a removable manner and without the use of bolts and nuts, and, further, to provide means for making the connection with rapidity and, at least possible trouble. Another purpose is to provide an attachment which while particularly adapted for turning plows of all kinds is equally well adapted to one-horse or two-horse plows, gang and sulky plows.

Of General Interest.

**SMELTING-FURNACE.**—H. L. WRINKLE and N. WRINKLE, Keeler, Cal. The invention is especially intended for use in connection with fluid or pulverized fuel, the arrangement being such that the material charged into the furnace lies in conical position in the crucible, the fuel gases being circulated around the sides of the conical mass of material. The furnace also involves a peculiar roof structure which not only strengthens the furnace but provides chambers facilitating heating the air blast.

**ORE-CONCENTRATOR.**—W. O. JOURNEY, San Antonio, Texas. This patentee's invention is designed to improve the construction of ore-concentrators whereby to better control the supply of the pulp and the water supplied thereto and to better regulate the discharge of the concentrates and tailings; the object being to give an increased capacity to the machine which is designed to operate continuously.

**DEODORIZING APPARATUS.**—J. B. SUTHERLAND, Seattle, Wash. One purpose of the inventor is to provide an apparatus for preventing the escape of objectionable odors or gases from cooking-tanks, rendering-tanks, or the buildings which contain said tanks, said vessels being of that character used in packing-houses, slaughter-houses, or fertilizer-works; and a further purpose to provide a readily applied means whereby the causes of the odors are trapped in their passage from the rendering-tank to the catch-basin or sewer.

**OVERHEAD-CONVEYER SYSTEM.**—J. F. MCKAY and D. J. MCKAY, Bowie, La. This invention refers to cableways, especially those for "skidding" logs. Difficulty has been met drawing out the skidding-line and the present improvements provide means for paying out the skidding-line after the outward movement of the carriage and preparatory to loading or re-loading it. The invention also contemplates a loading-carriage which is employed in connection with one of the guides for the main cable and which permits loading the logs on a wagon, railway-car, or like vehicle. It also contemplates other improvements; for instance—a tension-block, a double-block structure, and a detachable section for the skidding-line.

**ATTACHMENT FOR BARBERS' CHAIRS.**—A. D. KANBLE, Pencoys, Pa. Mr. Kanble provides means whereby to facilitate the insertion of the paper-roll in the cylinder and to guide such roll when in the cylinder in such manner as to prevent the edges of the paper sheet from tearing against the metal at the ends of the slot through which each sheet is guided, and also to brace the open end of the cylinder adjacent to the slotted way for the paper both internally and externally in the use of the invention. It is an improvement over a former patent granted to this inventor.

**DISPENSING-BOTTLE.**—C. B. FORSYTH, Alexandria Bay, N. Y. In the operation of the bottle the person wishing to use a portion of its contents will touch a stem, so as to unseat a plug in an upward direction. A quantity of the fluid will then flow down to a perforation and through a conical bore, as desired. As soon as released a spring will operate the plug once more and close the outlet from the bottle. The receptacle is for the use of anti-septic liquids, liquid soap, etc.

**FLY AND MOSQUITO GUN.**—R. PETERSEN, Asbury Park, N. J. This invention refers to improvements of guns by means of which any person can catch and destroy flies and other

insects. When operated, a person takes hold on a handle with one hand and the rear end of shooting-rod with the other and pulls his hands apart and then relieves the rod and it will shoot out quickly. If aimed at a fly on the wall, the fly will attempt to escape, then the catchers slam together and kill it.

**SOUND-AMPLIFIER PHONOGRAPH.**—R. B. SMITH, 153 Third Avenue, New York city, N. Y., and C. MCCARTHY, 2380 Broadway, New York. This invention relates to improvements in devices for amplifying sounds from phonographs or like machines, an object being to provide a reproducer comprising a plurality of diaphragms so arranged as to be acted upon synchronously, whereby the sounds from the several diaphragms will be so blended as to be emitted from the sound horn as a single sound, and much more distinct than is possible with the ordinary reproducer.

**ILLUSION APPARATUS.**—R. B. SMITH, 153 Third Avenue, New York, N. Y., and C. MCCARTHY, 2380 Broadway, New York, N. Y. Provision is made in this invention for effective and readily-operated means for securing a delusion effect, and the improvement is particularly adapted for the stage. The vehicle is capable of four distinct primary movements that may be applied singly or two or more impressed simultaneously upon the automobile floating in the air, so that it may be caused to describe complex curved paths, during which it turns to proceed in opposite directions. Any or all motions may be stopped at will. While the apparatus is upon the stage all elements except vehicle and occupants are concealed. Thus the car appears guided through air across the stage space, turns around and returns, then ascends until upside down and returns to the stage again, without support. Simple mechanism operates it from behind the scenes, a special system lights the stage, and motion to the wheels is given by silent electric means.

Household Utilities.

**SCREEN.**—J. STORK, San Diego, Cal. The invention relates more particularly to those window-screens which roll in the manner of a curtain and which are especially adapted to cooperate with the upper window-sash. Its principal objects are to provide an efficient arrangement in which positive movement in operation is imparted to both the screen and its support. It is slightly durable, keeps tight, and kinking upon the roll is impossible, while the movement of the sash is utilized to secure these results without complication.

**BABY-CABINET.**—MARY A. KUYKENBALL, Portland, Ore. One intention in this case is to provide a cabinet of convenient size, adapted for movement in any direction over the floor, comfortably padded, and having an open top, thus affording a box-like receptacle wherein an infant may be placed on a bed, and kept out of danger. Another is to provide inner handholds, which enable a baby to get upon its feet and learn to walk around the walls of the structure without being bruised in case of falling, and a further intention, to provide a holder to place playthings.

**WINDOW.**—C. CHABAU, New York, N. Y. This window belongs to the class designed to be swung into a room for the purpose of conveniently cleaning the outer side of the glass, the object being to provide a supplemental swinging casing in which the upper and lower sash are arranged to slide and whereby both sashes may be moved together in the inner side of a room.

Machines and Mechanical Devices.

**LOADING AND UNLOADING MACHINE.**—S. MUNSON, Fowler, Col. Mr. Munson's invention refers to a machine for loading and unloading which is capable of many uses, but is especially adapted for the transportation of rails. The objects are to provide convenient, efficient, and inexpensive means which can be mounted upon an ordinary flat or coal car for unloading rails therefrom or transferring them thereto.

**TYPE-CLEANING ATTACHMENT FOR TYPE-WRITING MACHINES.**—J. H. LADD, Falls Church, Va. This type-cleaning device is adapted to be detachably secured to the ribbon-carrying bar or plate of type-writing machines of the class represented by the "Remington," the "Densmore," and the "Smith Premier," in all of which machines the type-carrying levers are arranged in a circle and adapted to be thrown upward to bring the types in contact with the ribbon.

**TYPE-CLEANING ATTACHMENT FOR TYPE-WRITING MACHINES.**—R. C. HAMMILL, Woodbridge, Va. Mr. Hammill's invention is adapted to be detachably secured to and supported by the ribbon-carrying bar or guide of type-writing machines of that class represented by the well-known "Remington," in which machines the type-carrying levers are hinged and pendent in a circle traversed diametrically by the ribbon-guide. It is small in size, may be quickly applied to and removed from the ribbon-guide, and is self-fastening and self-supporting in the guide.

Railways and Their Accessories.

**COLLAPSIBLE BLIND OR SHUTTER.**—G. McMULLEN, Perth, Western Australia, Australia. This improvement has reference to lath blinds and shutters, and more particularly to that kind of blind usually fitted in tram and railway cars and such like vehicles for intercepting the rays of the sun and also

allowing the air to pass freely through the car, such blinds acting as auxiliaries for the ordinary glass windows.

**EXTENSION CAR-STEP.**—G. G. COMER, Kalama, Wash. In this patent the invention pertains to improvements in extension-steps for passenger cars or coaches, the object being to provide steps that may be readily attached to the ordinary fixed steps and so arranged as to be easily moved to and held in its lowered position and moved automatically to its upper position when not required for use.

Designs.

**DESIGN FOR A POCKET SAFETY-CLIP FOR FOUNTAIN-PENS AND PENCILS.**—M. H. DURYEA, Hackensack, N. J. Mr. Duryea has invented a new, original, and ornamental design for a pocket safety-clip for fountain-pens and pencils, comprising a human hand firmly gripping the ring portion of the clip.

**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. 7290.**—For manufacturers of moving and gypsy wagons.

Have you much figuring to do, chiefly multiplication and division? The "Brunsviga" will save you 90 per cent of time and all mental effort. 18 and 13 figures products. Automatic devices make error impossible. Simple. Lasts lifetime. Sent on trial. FELIX HAMBURGER, 90 William Street, New York.

**Inquiry No. 7291.**—Wanted, manufacturers of collapsible lead tubes, for pastes, also for makers of small pasteboard boxes for tablets.

"U. S." Metal Polish. Indianapolis. Samples free. **Inquiry No. 7292.**—For makers of tin mucilage brushes and caps.

For bridge erecting engines. J. S. Mundy, Newark, N. J. **Inquiry No. 7293.**—Wanted, machinery for manufacturing or converting sisal or hemp from the plant.

Drying Machinery and Presses. Biles, Louisville, Ky. **Inquiry No. 7294.**—For parties to make small stamped steel novelty work, also makers of machinery and outfits for such work.

Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O. **Inquiry No. 7295.**—For makers of engine gang plows for use behind traction engines.

Adding, multiplying and dividing machine, all in one. Pelt & Tarrant Mfg. Co., Chicago. **Inquiry No. 7296.**—For makers of hand swinging acetylene lamps.

Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt. **Inquiry No. 7297.**—For a machine for cutting "scrub," i. e., small trees of hardwood varying from the diameter of a straw to two inches.

I sell patents. To buy, or having one to sell, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y. **Inquiry No. 7298.**—Wanted, catalogues and prices of soap manufacturing machinery, and estimate on complete outfit for making 1,000 to 5,000 pounds of soap per 10 hours.

**WANTED.**—Patented specialties of merit, to manufacture and market. Power Specialty Co., Detroit, Mich. **Inquiry No. 7299.**—For manufacturers of aluminum paper.

**Wanted to manufacture some light, quick-selling article. Fully equipped plant.** E. G. Waterhouse, Flatiron Bldg., N. Y.

**Inquiry No. 7300.**—Wanted, drawing and patterns for making small rowboats. The celebrated "Hornaby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company, Foot of East 138th Street, New York.

**Inquiry No. 7301.**—For makers of tinfoil. **WANTED.**—Ideas regarding patentable device for water well paste or mucilage bottle. Address Adhesive, P. O. Box 773, New York.

**Inquiry No. 7302.**—For makers of metal horns such as used on talking machines. **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. 7303.**—Wanted, right to build a good make of gasoline engine in Canada. **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. 7304.**—Wanted, a machine for filing small saws. **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. 7305.**—For the manufacturers of the Buffalo Hot Air Engine, also of the "Essex," or for a small hot air engine, 1-40 to 1-8 h. p. **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. 7306.**—Wanted, hand-braided cotton line 1/4 inch diameter, in loops of about 20 inches; endless, braided at ends. **Inquiry No. 7307.**—Wanted, a first-class pattern maker, to do accurate work from blue prints.

**Inquiry No. 7308.**—Wanted, address of manufacturers of metal diaphragms, such as are used in telephone transmitters and receivers. **Inquiry No. 7309.**—For makers of evaporators for evaporating apples.

**Inquiry No. 7310.**—Wanted, catalogues of machines for cleaning fiber sisal. **Inquiry No. 7311.**—Wanted, catalogues of running gears, equipped with wheels and differential gear, to be bevel-driven, not chain; also for catalogues of magnets for jump spark ignition, with or without coil, also of clutches.



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.

(9784) J. A. H. asks: Will you kindly explain in your Notes and Queries column a fact that has puzzled me a good deal? Why is it that lightning should splinter a tree up as it does? Now, lightning being electricity, has no shape or weight, and consequently can have no momentum or purely mechanical energy which it would impart to the tree in tearing it to pieces. Will you kindly try to clear up this question? A. Although electricity is not supposed to have ordinary mechanical properties such as momentum, weight, etc., it yet has the ability to produce these effects in other bodies. A shock of a small coil will give a very savage jerk to an arm or a leg, and the blow or kick given is a striking mechanical effect. The shattering of trees and structures by lightning may be in part accounted for by the sudden evolution of heat, vaporizing the water in the tree, expanding the gases, and producing all the effects of an explosion.

(9785) F. G. S. asks: Is there any simple formula for calculating the power of a magnet when the size of wire, number of turns, and E. M. F. of battery are known? Will this formula apply in the case of a solenoid? A. The tractive power of a magnet is found by the

$$\text{formula Pounds} = \frac{T C M \sqrt{V A}}{2661 L}$$

in which *T* is the number of turns of wire, *C* the current in amperes, *M* the permeability of the iron of the core, *A* the area of pole pieces, and *L* the mean length of the magnetic circuit. For a solenoid without iron the permeability is 1, since the permeability of the air is the standard of comparison, and hence is unity. For a straight coil the result will be of little value because of the great leakage of lines of force, and the great length of the circuit of the lines in the air.

(9786) E. C. S. writes us: Solution of problem of soldiers and couriers, SCIENTIFIC AMERICAN September 2, 1905, page 186, No. 9750.

Let *A B* represent the column at the time of commencing its march, the courier being at *A*. While the column moves a distance equal to *B C*, the courier moves from *A* to *C*; and while



the column moves a distance equal to *C D*, the courier moves from *C* to *B*.

Let *x* represent *B C*, and *y* represent *C D*. Then  $x + y = 25$  (1)  $x + y - 25 = 0$  (2)

Now, as the column moves at a uniform rate of speed throughout, and that of the courier is also constant:

$$(x + 25) : x :: x : y \quad (3)$$

$$xy + 25y = x^2 \quad (4)$$

$$xy + 25y - x^2 = 0 \quad (5)$$

$$\text{Multiplying (2) by } x, x^2 + xy - 25x = 0 \quad (6)$$

$$-x^2 + xy + 25y = 0 \quad (7)$$

$$\text{Subtracting (5) } 2x^2 - 25x - 25y = 0 \quad (7)$$

$$\text{Multiplying (1) by } 25, 25x + 25y = 625 \quad (8)$$

$$\text{Then by addition: } 2x^2 = 625 \quad (9)$$

$$x^2 = 312.5$$

$$x = \sqrt{312.5} = 17.6776+$$

Therefore the distance the courier traveled was equal to 25 miles plus  $2x =$  Ans. 60.3553+ miles. I do not think the rate per hour necessarily enters into a consideration of this problem, as it could quite as well be a rate per minute or per year, or even that of Mark Twain's famous glacier.

(9787) J. A. T. writes: Yesterday about four o'clock in the afternoon, while looking toward the east, I saw what looked to be a meteor in the heavens traveling toward the east—quite a ball of fire, about the size of a child's head, with a long tail. Now, this looked to be very near, so much so that one would believe it fell as near as three miles from where I was standing. Now, do you think this possible, or is it very deceiving to the sight, and could it have been in some other atmosphere? I think I have read of where they have fallen on the earth, and it would interest me very much to have this reported. A. The observation of a meteor in the air by daylight is interesting. It is not likely that it was as near as three miles, however. Had it been no farther away, it