

RECENTLY PATENTED INVENTIONS.

Electrical Devices.

**PRINTING-TELEGRAPH.**—J. D. WHITE, 50 Clanciarde Gardens, London, England. The object of this invention is to provide a "compound selective relay" for use in connection with an apparatus like that described in the specification of Mr. White in his former United States patent, so that the various local circuits which control the mechanism may be operated by a main circuit in such a way that messages transmitted along that circuit from an ordinary Morse or similar transmitter may be printed automatically in the proper characters at the receiving end.

Of Interest to Farmers.

**GROOVING AND DITCHING PLOW.**—W. M. BENSON, Newport, Pa. The purpose of the inventor is to provide a tandem gang grooving-plow, particularly adapted for use in semi-arid land, and to so construct the implement that the plows are set tandem or one directly behind the other, each consecutive plow-point being set deeper in the furrow than the preceding one for the purpose of producing a deep groove at one operation, and wherein also the plow-points are of graduated width, the lowest one being narrowest, the uppermost the widest.

**FENCE-POST.**—M. C. WIX, Milburn, Ky. Definitely stated, the invention has to do with the strand or fence wire fastening means, the object being to provide means of the character stated which shall not only facilitate securing of the strand-wires to the posts, but provide inexpensive and ready means for effecting the securing of the strand-wires to the posts.

**PLOW OR CULTIVATOR.**—W. T. GEORGE, Fayetteville, Tenn. The object of the improvement is to enable the distance between the shovels of the plow to be adjusted in a transverse direction with respect to the direction of advance of the implement, and, further, to provide an arrangement which will enable the degree of advance of certain shovels with respect to the others to be adjusted.

**WEEDING AND CULTIVATING DEVICE.**—T. J. KING, New York, N. Y. In this case the invention pertains to improvements in devices for extracting weeds, plants, and the like from the ground, the object being to provide a device of this character by means of which weeds or the like may be readily drawn from the ground with but little manual labor.

**FERTILIZER-DISTRIBUTER.**—H. T. YOUNG, Florence, S. C. The center of revolution of the wheels being eccentric to that of the sleeves, the knives are projected upon one side of the cylinder and retracted upon the opposite. By adjusting the collars circumferentially of the shaft the commencement of point of projection of knives may be varied. Edges of the knives in passage beneath the hopper follow the outline of the bottom thereof and remove a thin layer of fertilizer, and continued revolution of cylinder drops fertilizer on the ground. After dropping it the knives begin to retract into the cylinder thus cleaning themselves from the fertilizer. A continuous layer is spread, of a width equal to the cylinder's width.

Of General Interest.

**SHIP FOR CARRYING LIQUID CARGOES IN BULK.**—C. E. BURNEY, Newport News, Va. The invention is an improvement in ships for carrying petroleum or other liquid cargoes in bulk. It is steady in a seaway, operating on the same principle technically known as "winging the weights," which consists in removing weights on board of a ship from the center line out to the sides, causing her to be steadier and roll more easily.

**COMPOUND CONDIMENT-HOLDER.**—L. B. PARKER, Sulphur, Ind. Ter. The inventor has for objects the production of a device in which the caps of the shakers or distributors adapted to contain salt and pepper and other condiments can be readily removed and replaced and the perforations therein remain in a free and open state by the action of means carried by a closure-lid operable to close that shaker not in use.

**APPARATUS FOR SMOKING MEAT.**—C. SCHMITT, New York, N. Y. One purpose of the invention is to provide for a perfect combustion of the gas, and, further, means for heating and for producing smoke entirely independent of the chamber in which the articles are placed for smoking and cooking, thus preventing them from absorbing the odors peculiar to gas when burning, and also preventing the deposit of carbon on the products, which occurs at times under ordinary conditions.

**SPEED-INDICATOR.**—W. C. PLANK, Las Flores, Mexico. The object of this invention is to overcome the difficulty of taking the speed of shafts by producing an indicator in which there will be no danger of the spindle communicating its movement to the indicator-dial until such time as desired by the user. This is done by making the spindle in two sections, which are adapted to be automatically connected by pressing the indicator forward.

**ATTACHMENT FOR MOUTHPIECES OF TELEPHONE-TRANSMITTERS.**—W. C. PLANK, Las Flores, Mexico. The mouthpiece of a transmitter through constant use becomes foul and unsanitary. The invention consists of numer-

ous concentric removable linings of antiseptic paper so molded as to properly fit the mouth-piece and fastened therein and which is adapted to be readily removed sheet by sheet as the inner sheet becomes soiled or unsanitary.

Hardware.

**NUT-LOCK.**—W. S. MASON, La Salle, Ill. The device may be employed with nuts of square, hexagonal, or other shape. An object of the invention is to provide a lock which will securely hold the nut upon the bolt against accidental displacement or loss, and which may easily and quickly be placed in position or removed.

**ECCENTRIC CUTTING-BIT.**—J. H. TOMBRAGEL and J. F. SCHUNDER, Covington, Ky. The invention relates to bits used in boring holes in wood or metal; and one object of the improvement is to provide novel details of construction for a bit of the character indicated which is easily adjusted, enabling the lateral adjustment of the bit to the axis of its shank, whereby the bit will bore a hole of any desired diameter and depth within its capacity.

Household Utilities.

**IRONING-BOARD.**—L. C. KRANS, East Greenwich, R. I. In the present patent the invention relates to ironing-boards, such as used in laundries for ironing clothes; and the object of the improvement is to produce an ironing-board which can be quickly set up in position, which will maintain itself rigidly in position when erected, and which will normally be folded into small space when not in use.

Heating and Lighting.

**WATER-HEATER.**—J. A. FREY, Washington, D. C. This portable heater is adapted to be connected with a source of water-supply and is provided with an eduction-pipe by which water which has circulated through the apparatus and become heated may be drawn off. The heating is effected very rapidly and economically by a kerosene or other burner. There are improvements in the heater proper or interior part through which the water circulates, and in connecting parts, comprising the casing, the flame-deflector, and supports thereof.

Machines and Mechanical Devices.

**CRYPTOGRAPHIC MACHINE.**—H. BURG, Mollkirch, near Rosheim, Germany. The invention is applicable to all type-writing machines in which the type are carried by a circle, even when they are mounted on type-bars or movable levers, and, indeed, all that need be done is to render movable the type-carrying circle and to connect the same with a mechanism of a kind to produce a predetermined series of various motions of said circle or a cylinder in order to obtain the discrepancy between the types marked on the keys struck and the types printed.

**FILTER FOR DEFECTION.**—R. M. VILLARINO, Campechuela, Cuba. A tank is employed for containing molasses or other syrup to be defecated and within which are disposed stirrers for the molasses in connection with shafts, means being employed for revolving the same in opposite directions. Means regulate the speed of each of the shafts, and further means clean the structure, and still further means are associated with the tank for receiving the overflow and which may be caused to return to the tank at will, said means embodying a valve-controlled discharge-pipe for lees or sediment collecting therein.

Prime Movers and Their Accessories.

**MUFFLER AND WHISTLE DEVICE.**—M. ZWICKL, New Durham, N. J. This device is especially useful for small water-craft propelled by explosion-engines. Such water-craft must use a whistle for signaling purposes, and these are commonly blown by compressed air. The use of this air has a serious disadvantage, in that there is no visible signal when the whistle is blown, so that navigators of other craft have difficulty in locating the signal. The object is to produce a device adapted to be used in connection with an explosion-engine which will enable the steam-whistle to be operated when desired.

**STOP MECHANISM FOR STEAM-ENGINES.**—A. A. FULLER and D. K. CARTER, Jasper, Ala. The invention is in the nature of a stop device for at will throwing a Corliss steam-engine or other engine out of gear from any part of a plant or by the automatic action of its governor when racing or running wild. It consists of the novel construction and arrangement of electromagnetic tripping devices and their connection with the valve-gear.

Railways and Their Accessories.

**MINE-CAR.**—C. A. KELLER, Rosedale, Ind. The object in this improvement is to produce a car adapted to be used for transporting the material mined and constructed so as to facilitate automatic dumping of the material carried; at the same time the car is made so as to enable the same to be readily adapted for carrying dirt or similar material which is to be shoveled from the car.

**CAR-STAKE.**—R. L. EDWARDS, Perry, Oklahoma Ter. The invention refers to car-stakes

such as used at the sides of freight-cars employed for carrying lumber or logs. The object is to produce a stake having a mounting which will permit it to be readily adjusted into an erect position, but which will enable it to be quickly folded down in an inoperative position.

**AIR-BRAKE SYSTEM.**—W. H. EICHELBERGER, Royalton, Pa. The improvement provides a reliable safety attachment for the weakest point of an air-braking system—that is, the coupling between the sections—and that the attachment is operative under any abnormal condition which may be present. To prevent dragging of chains when the cars are uncoupled, they may be attached by any suitable means to the free end of the hose.

Designs.

**DESIGN FOR A COVER-DISH.**—R. L. JOHNSON, Stoke-upon-Trent, Staffordshire, England. In this ornamental design the cover-dish is of oval form. From the cover handle down to the edge of the cover the slope is gradual, varied, and pleasing. There is a gracefully scrolled handle at each end of the body of the dish. The body lines show a beautiful curve from the top to the base.

**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.



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.

(10383) B. W. N. asks for information concerning transfer ornamenting. A. There are many different ways of putting on the ornament, some preferring one way, others a different method, according to circumstances and individual skill. We shall endeavor to give the most simple and successful method known. First, let it be understood that all pictures that show the colors complete are only suitable for white or very light colored brown; those that are covered with a white grounding, gold, metal, or silver leaf, can be used on any color, light or dark. After getting the work ready for ornamenting, give the picture a smooth, thin coat of some quick-drying copal varnish, thinned with turpentine (other preparations are used of which we will speak hereafter), being careful not to go beyond the outline of the design. Allow it to dry until it has a good tack, and put it on the work in its proper place. Roll it smooth with an India-rubber roller, or smooth it with a paper folder, until every part adheres well. (For very large pieces, it is well to lay them, after they have the right tack, between two sheets of damp blotting paper. It will stretch the paper and make a smooth transfer.) Now wet the paper, smoothing it down at the same time, until it has absorbed all the water possible; leave it about a minute, and pull off the paper carefully. Should any parts of the design still adhere to the paper, press it down again, wet-rub it until it separates easily. After having removed the paper, press the design on well and wash and dry it off. Should any blisters appear, prick them with a pin and press down. In a few hours the design may be varnished, which will increase the brilliancy of the colors. An improved method has been introduced which saves time and works with more certainty. The design is coated with a transfer cement of his own manufacture, without regard to outline, transferred as usual, and the traces of the cement around the design washed off, with the detergent (also his own invention), which will remove every particle of cement without injuring the colors or gold in the least. A few drops poured on a sponge or chamois skin are sufficient. For fine ornaments, having many fine lines and touches, it is necessary to use these preparations to make a neat job.

(10384) G. E. D. asks how to wind a small 75-watt dynamo to run same as a motor on a 110-volt direct current. How to reduce a voltage of 110 direct current to one of 20 volts most advantageously and in the simplest manner in order to run a motor wound for only 20 volts in circuit with a 110-volt current. A. Seventy-five watts are a tenth of a horse-power. We do not know where the winding for so small a dynamo can be found. The nearest we can come is a machine with a sixth horse-power. This is in Poole's "De-

signs of Small Dynamos," price \$2. We cannot give you directions for reducing a 110-volt current to 20 volts, without knowing the amperes also which flow. You can do the calculating as well as we. Divide 90, the rest of the voltage, by the number of amperes. The quotient will be the ohms of wire to be used. A small iron wire will be a proper one for the resistance.

(10385) G. G. asks: 1. Is there a paper on the market which, when damaged, will be discolored by the passage through it of a mild electric current, such, for instance, as would be generated by five dry cells? A. Perhaps a paper for determining the pole of a circuit can be purchased. If not, it may be made as follows: Dissolve one part of phenolphthalein in ten parts of alcohol, and add 100 parts of distilled water. Soak blotting paper in this and dry it. Then soak again in a 20 per cent solution of sodium sulphate in water and dry again. To use this moisten a piece of the paper in water and apply the wires to it. The space around the negative pole turns a bright red. 2. Is there any harmless chemical preparation which would cause paper dampened in it to take a dark color by the passage through it of such a current? A. Dissolve some potassium iodide in water, add starch and bring to a boil. Soak paper in this, and while damp apply the wires as before. A dark color is formed around the positive wire. By moistening the paper of No. 1 with the starch solution two colors would be formed.

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February 12, 1907.

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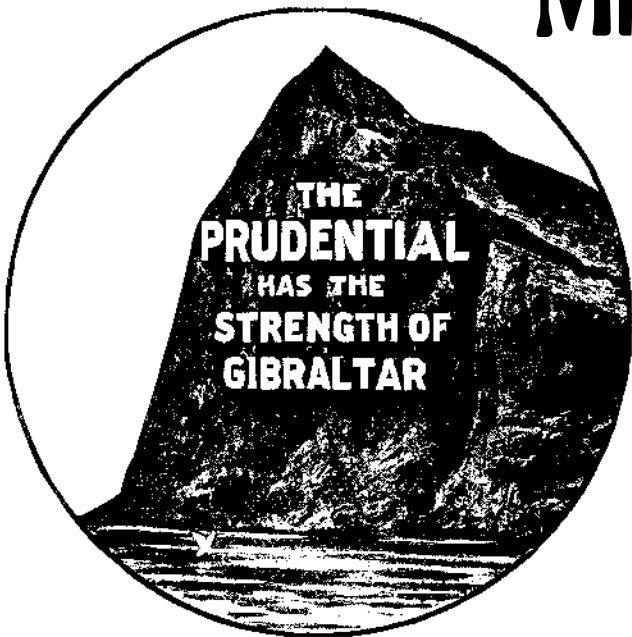
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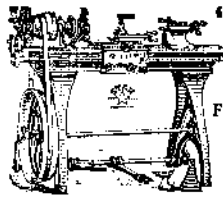
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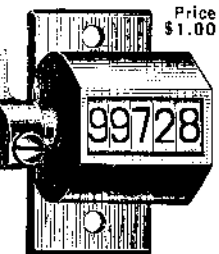
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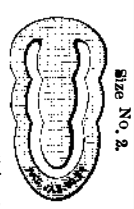
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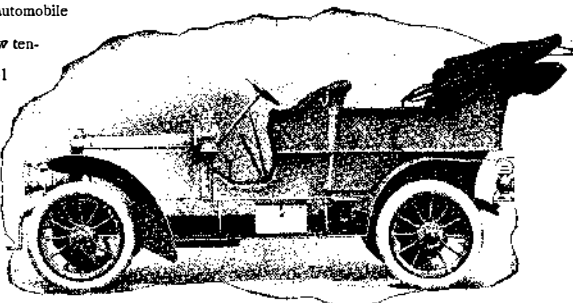


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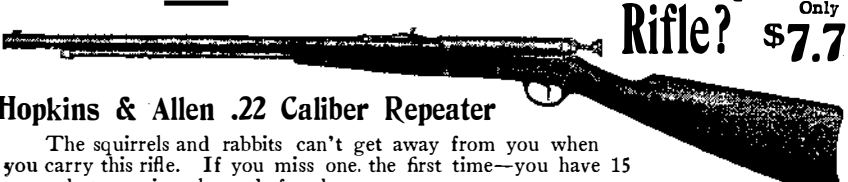
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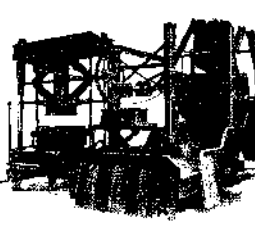


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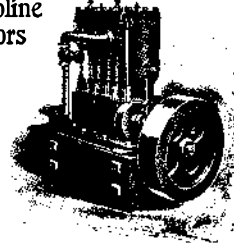
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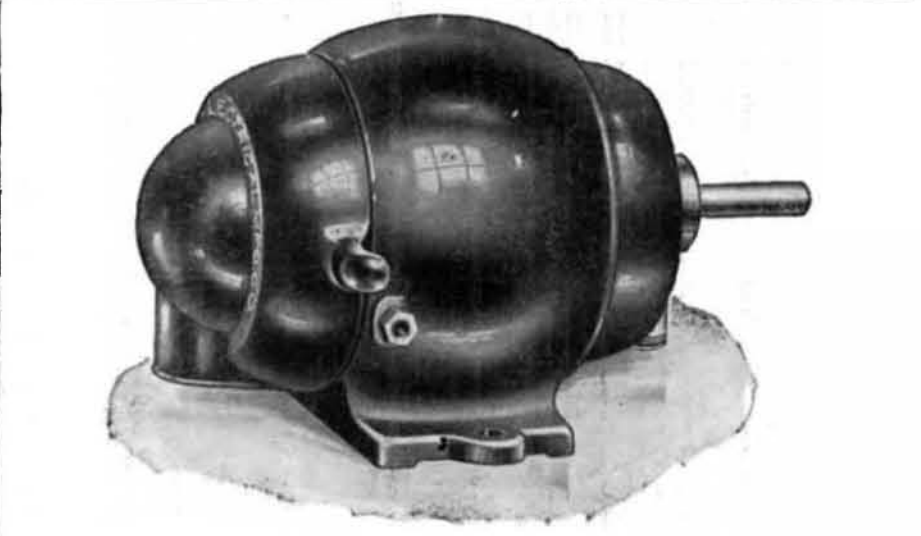
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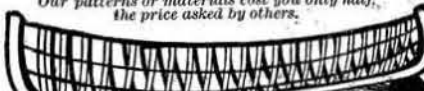
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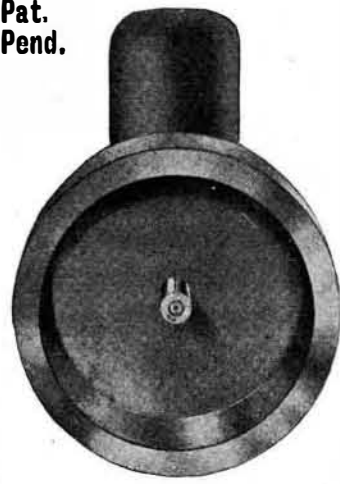
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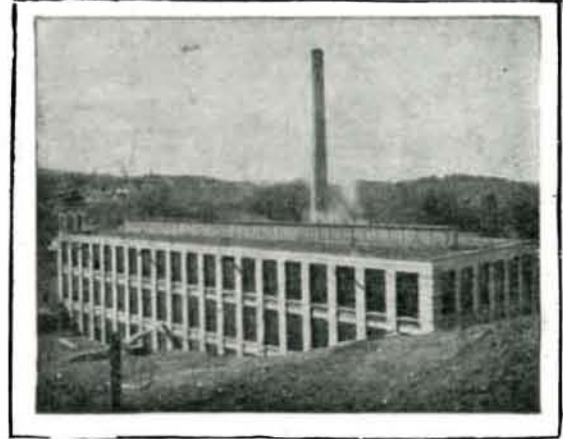
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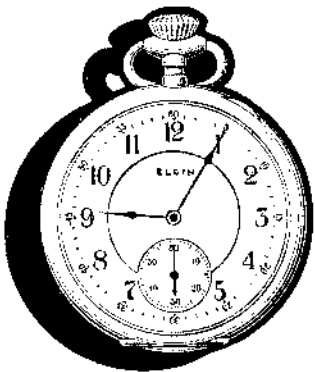
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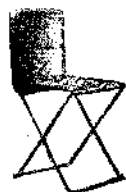
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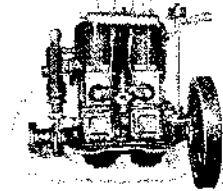
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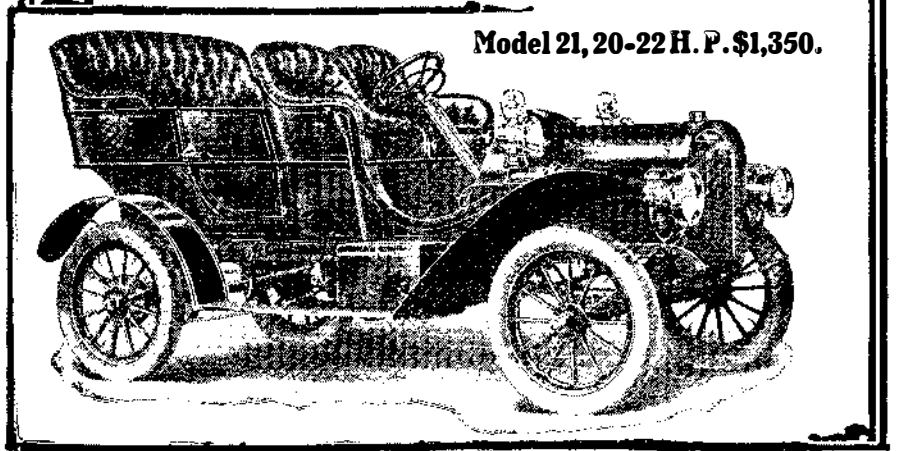
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