RECENTLY PATENTED INVENTIONS.

Pertaining to Apparel.

GARMENT-SECURING DEVICE.—J. E. RHODES, New York, N. Y. The invention pertains to devices for securing garments in place, and more particularly to those adapted for use in connection with skirts and shirt-waists. Its principal objects are to provide such a device which will hold the skirt from sagging and the waist from crawling and which will also draw down the front of the waist to give the pointed effect.

BUCKLE.—L. SANDERS, New York, N. Y. The purpose of the inventor is to provide a buckle especially adapted for the back-straps of trousers, vests, and other garments in which straps are used, but which may be employed wherever a friction bite is desired, and to improve the construction of the buckle over that formerly secured to Mr. Sanders by Letters Patent.

Electrical Devices.

AUTOMATIC INSULATOR.—G. M. CORELL, New York, N. Y. This improvement relates to automatic insulators and closers for electric circuits. It is to be used especially in connection with line-wires carrying electric currents; the object being to provide means for automatically cutting out the broken end of a tightly-strung conductor, such as a line-wire. It provides a circuit arrangement whereby the flow of current in its circuit may be uninterrupted although the circuit has been severed at any point.

Of Interest to Farmers.

MILK-PAIL.—G. A. JONES, Ottawa, Kan. The object in this improvement is the production of a pail having a strainer attachment which will substantially close the mouth of the pail and protect milk from falling dirt and insects. The strainer may be readily removed or replaced. The invention relates to milk-pails, such as used on farms when milking.

Of General Interest.

COLLAPSIBLE SCREEN.—L. DEJONGE, JR., New York, N. Y. In the present patent the intention of the inventor is the provision of a construction of screen whereby it can be rolled up, making a small package for storage or transportation, and whereby also it can be quickly, conveniently, and firmly set up for use.

NON-REFILLABLE BOTTLE.—G. C. ALLEN, Port Townsend, Wash. From this very simple bottle the contents may be poured at will but it cannot be refilled fraudulently. By reason of the offset position of the inclined duct it is impossible for an instrument to be applied to the upper portion of the liquid-valve in order to open the same to allow a liquid to pass inwardly. This mechanism and bottle can be made for a cost of about ten cents.

WOVEN FABRIC.—H. SARAFIAN, Yonkers, N. Y. In this instance the object is the provision of a new and improved woven fabric designed for use as carpets, rugs, and the like and arranged with an exceedingly strong back to give the desired lateral stiffness to the fabric and to insure a soft tread.

COAT, HAT, AND UMBRELLA LOCK.—R. H. HEBERLING, Wilmerding, Pa. This inventor provides a combined holder for a coat, hat, and umbrella, the devices for holding the garments and umbrella and the hasp having spring acted pawls controlling the same within the containing case, and the arrangement is such that a single key serves to release the several pawls at one operation.

DIE.—J. J. BROSSOIT, Salt Lake City, Utah. The underlying object of Mr. Brossoit is to construct a single die formed of two members which may be used to perform all of the upsetting or hammering operations necessary in the construction of the drill. In attaining this end he provides a single die with two peculiarly-arranged working surfaces, so that by changing the position of the work in the die either one of two distinct operations may be performed.

Hardware.

COMBINATION-TOOL.—S. MORKERT, Querida, Col. This tool is especially useful in the construction or repairing of wire fences. It is manipulated as a wire-cutter and hammer and operates in this connection substantially like an ordinary hammer. Used as a screw-driver, the hammer-head operates as a handle to facilitate using of the driver. If leverage is not sufficient the lever of the cutter may be thrown out from the handle and used as a lever to facilitate the turning of the driver.

CHECK ATTACHMENT FOR PULLEYS AND CHOCKS.—R. KURELLA, Brooklyn, N. Y. A purpose of this improvement is the provision of an attachment to chocks, leading-pulley blocks, and the like which can be set to permit the free passage of a rope through the chock or pulley or set to clamp the rope in such manner that at such time the more strain to which the rope is subjected the tighter the attachment will hold the rope.

Household Utilities.

RECLINING-CHAIR.—J. LANDAU, New York, N. Y. In this patent the object of the invention is the provision of a new and improved reclining-chair arranged to allow the user to readily move the hinged back into an inclined position to suit the convenience of the user. Means allow the fitting of the operating mechanism on chairs of different sizes and construction.

FOLDING FURNITURE-LEG.—L. B. JEFFCOTT, New York, N. Y. The invention resides in peculiar features of construction and arrangement concerned with the provision with two legs or supports, of links respectively pivoted to the legs and extended toward each other, their adjacent ends being connected by a rotatable member of such arrangement that the parts may be thrown into either extended or folded position and held securely in either position.

PICTURE-HANGING DEVICE.—L. HORINKO, New York, N. Y. The device is especially adapted for hanging heavy pictures. They may be conveniently and expeditiously lowered to the floor without detaching them from their supports and quickly restored to their normal position on the wall, or the pictures may be adjusted up or down on the wall and held securely in adjusted position. The device supports a picture at the bottom as well as at opposite sides of the back.

Machines and Mechanical Devices.

TILE-MOLDING DEVICE.—H. BESSER, Alpena, Mich. In the present patent the invention has reference to a device for simultaneously molding a plurality of tiles in vertical position. The principal objects of the improvement are the provision of a simple form of mold for this and similar classes of work and to provide an efficient mechanism for operating it.

MOLDING DEVICE.—H. BESSER, Alpena, Mich. This device carries out the "hand" method of molding building-blocks and other articles from plastic material. The mold, which constitutes most of the device, is manipulated by hand to form a molded article; and the principal objects of the present invention are to provide means whereby manipulation of the handles used for lifting the mold will result in automatically and simultaneously withdrawing all the mold-walls from the surfaces of the molded article before the lifting operation is commenced, whereby these operations are made practically continuous one with the other.

MOLD FOR HOLLOW ARTICLES.—H. BESSER, Alpena, Mich. In this case the invention refers to a mold for hollow articles, especially that class which are molded in a vertical position—as, for example, drain-tiles and the like. The principal object of the invention is to provide means whereby an expansible core can be readily and positively expanded and contracted by a very simple motion and to provide for this in a simple and convenient manner.

ALARM.—F. M. HOBBS, Halesboro, Texas. The object had in view in this invention is to provide an alarm for attachment to windows, whereby upon raising the lower sash thereof or lowering of the upper sash a bell forming part of the alarm will be sounded, indicating to inmates of the house that a burglar or other person is attempting entrance thereinto through the window.

PILE-FABRIC LOOM.—J. K. DALKRANIAN, New York, N. Y. The aim of this inventor is to provide a loom more especially designed for weaving woven pile fabric—such, for instance, as shown and described in his former application for Letters Patent of the United States. The loop-forming devices for the pile warp-threads, the tension device for drawing the loops tight around the weft-threads, the beating-in mechanisms, the heddles, and the shuttle mechanism all operate in unison to produce the results intended by the improvement.

Prime Movers and Their Accessories.

WAVE-MOTOR.—D. H. MOWEN, Myersville, Md. The motor is designed to be operated by the action of the waves or tide; and it consists in the novel construction and arrangement of parts in which a weight is raised by the action of a float as a source of power and in which a construction of gears is arranged to transform the movements of the float into a continuous rotary motion for any useful purpose.

OILER.—D. HERRMANN, Guttenburg, N. J. The improvement pertains to oilers and admits of general use, but is of peculiar value in relation to oiling of wrist-pins, high and low-speed engines, and other prime movers. It is based upon the principle that a falling liquid is unable to follow a line of continually-changing direction at high speed.

Pertaining to Vehicles.

BUGGY-BOOT AND FASTENER.—P. J. BLASER, Fostoria, Ohio. One of the objects of Mr. Blaser's invention is the provision of a buggy-boot so constructed that it will be waterproof and padded, enabling it to be utilized as a seat, and so that it will be strong enough to support objects of considerable weight.

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.

A SIMPLE ADDING MACHINE.

The accompanying engraving illustrates an adding machine which, unlike most machines of this class, is the acme of simplicity. It consists of a square plate beneath which a large disk is mounted to revolve. The disk is provided with a ring of numbers running from zero to 99, the numbers showing through a slot in the base-plate. The disk is perforated along its periphery. Nine wider holes, which are large and pear shaped,

serve to guide a wire point, secured to a pencil, into the proper perforations of the disk when the machine is being used; thus its operation is made very simple and positive. That the machine is the result of experience is shown by the employment (and their convenient arrangement) of only nine numbers for the operator to use, which reduces chances for mistake, as well as making the operating very easy.

The Eagle Adding Machine Company, 106 Wall Street, New York, are the manufacturers.

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

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

Inquiry No. 8151.—Wanted, address of firms installing alcohol lighting.

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Inquiry No. 8155.—For manufacturers of thermometers registering as high as 600 deg. F.

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Inquiry No. 8156.—For manufacturers of crimped elbows, 2¼ inches in diameter, from sheet copper, 10 ounces.

Inquiry No. 8157.—For manufacturers of roller window and door screens.

Inquiry No. 8158.—For manufacturers of grindstones, such as have bicycle frame with seat and two pedals.

Inquiry No. 8159.—For manufacturers of machines for making men's clothing.

Inquiry No. 8160.—For manufacturers of vending and amusement machines.

Inquiry No. 8161.—For manufacturers of machinery for pressing charcoal into bricks for fuel.

Inquiry No. 8162.—For manufacturers of cheap flexible rubber specialties.

Inquiry No. 8163.—For manufacturers of Artisan Dongaree clothing.

Inquiry No. 8164.—Name and address of manufacturers of American Diamond Light Oil Burner.

Inquiry No. 8165.—For manufacturers of the Graham Safety Lamp Filler.

Inquiry No. 8166.—For manufacturers of overshot water wheel.

Inquiry No. 8167.—For manufacturers of the Gilbert heel cushion; also Eagle Claw fish trap.

Inquiry No. 8168.—For manufacturers of compressed air meters.

Inquiry No. 8169.—For manufacturers of machines, tools and instruments for the construction of farm drainage systems.

Inquiry No. 8170.—For manufacturers of carpet-cleaning wheel or other machines, also makers of feather-renovating machines.

Inquiry No. 8171.—For manufacturers of machines for making straw brooms and root brushes.

Inquiry No. 8172.—For manufacturers of the magnetic compass, such as is used in watch charms.

Inquiry No. 8173.—For manufacturers of rubber goods such as tubing, hot water bottles, etc.

Inquiry No. 8174.—For manufacturers of animated toys, such as men, etc.

Notes and 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.

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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.

(10011) C. D. R. asks: Can you give me a receipt for transparent etching ground, for retouching? Silicate of soda is transparent, but leaves a ragged edge in the lines. Is there anything I could add to it for the purpose that would not destroy its transparency? A. Retouching varnish, sandarac 1 ounce, castor oil 80 grains, alcohol 6 ounces.

(10012) F. C. asks: How can I cover a pulley with paper or leather? Pulley is of cast iron 9 inches by 8 inches with an extra smooth face. A. Scratch the face of the pulley with a rough file thoroughly, so that there are no bright or smooth places. Then swab the surface with a solution of nitric acid, 1 part; water, 4 parts; for 15 minutes; then wash with boiling hot water. Having prepared a pot of the best tough glue that you can get, stir into the glue a half ounce of a strong solution of tannic acid, oak bark or gall nuts, as convenient to obtain, to a quart of thick glue; stir quickly while hot and apply to the paper or pulley as convenient, and draw the paper as tightly as possible to the pulley, overlapping as many folds as may be required. By a little management and moistening of the paper, it will bind very hard on pulley when dry, and will not come off or get loose until it is worn out. Use strong hardware wrapping paper.

(10013) DeF. H. asks: 1. How many volts and amperes does the simple plunge battery described in "Experimental Science" give? A. Each cell gives an average of 1.8 volts, so that in series you would have 1.8 × 8 or about 14 volts. In parallel it will give 1.8 volts. The amperes depend upon the external resistance principally, since the internal resistance is very small. You can safely take 4 amperes. 2. How long can this battery be used without decreasing in strength? A. Any battery begins to be exhausted as soon as it begins to do work, of course. You will obtain about 60 ampere hours from the battery, before renewing the solution. The zincs will last a long time, the carbons indefinitely. 3. What would the materials for this battery cost (approximately)? A. If you can make the case, windlass, etc., the cost is much reduced. The jars, plates, and other materials will cost about $15. 4. Directions for making a small and inexpensive Ruhmkorff induction coil giving a 1-inch spark, for use with the two chromic acid cells? A. You will find the directions, full instructions with drawings, in Bonney's "Induction Coils." Price by mail, $1. The coil described in "Experimental Science" is a good one, and gives a longer spark. It will cost but a little more than one giving an inch spark.

(10014) L. E. T. writes: Steel being a conductor of electricity, why is it that the steel balls used in the coherer of a wireless telegraph system, being in contact with one another as they are, do not make a continuous circuit in the receiving apparatus? A. Steel balls in the ordinary sense of the word have not been used in the coherer of the wireless telegraph so far as we are informed. The coherer contains a powder, composed of metal filings. Various metals have been employed simple or mixed. Any powder, even of a conductor, is a very poor conductor. The principal reason is that the particles are *not* in close contact with one another. When an electric wave strikes this powder, its electrical resistance is very greatly reduced, as if the particles had cohered. This state continues till a jar is given to the powder, when the high resistance is restored. See Fahie's "History of Wireless Telegraphy." Price $2 by mail.

(10015) L. A. S. asks: 1. What per cent of electricity, going out through the trolley wire, gets back to the dynamo through the rails or ground? A. All the current returns to the dynamo in one way or another. 2. Would it be possible under existing conditions of insulation, to send the current out through the rails and back to the dynamo through the trolley wire, and if so, would the electrical efficiency be the same? A. The trolley wire is made plus, not as you seem to think, because the current might not go out properly if sent out by the rails, but to protect metals, water and gas pipes, etc., from corrosion as much as possible. It makes no difference to the electrical efficiency which wire is attached

to the trolley, the plus or the minus. If, however, the current flows from the trolley wire to the ground on its way back to the station, it will not act by electrolysis so much upon the metal which it traverses, as if it flowed in the opposite direction. Iron and lead are positive, and tend to attach themselves to the negative pole of the circuit. If then the rails, and water and gas pipes are in the direction of the flow of the circuit, they are not reduced by electrolysis as they should be if the current were flowing the other way, from the rail to the trolley wire.

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