

RECENTLY PATENTED INVENTIONS.

Pertaining to Apparel.

GARMENT HANGER.—R. C. THOMAS, New York, N. Y. This garment hanger is constructed with two arms, each made of two strands with their inner end twisted and adjustably pivoted to the other arm. At the outer end of each arm is a shoulder loop made longitudinally adjustable through the intermediary of a connecting block.

Electrical Devices.

SPARK-PLUG ATTACHMENT.—F. D. CASEY, North Water Gap, Pa. The object of this invention is to provide covers for the spark plugs of engines to prevent water or moisture from reaching the electrical connections on the spark plugs and thereby cause a short circuit. The device is particularly adapted for the engines of motor boats and motor vehicles.

TRANSPPOSITION BRACKET FOR INSULATORS.—J. E. SKINNER, Kingman, Kans. The purpose of this invention is to furnish means for transposing telephone wires at suitable intervals, so as to equalize induction effects on the several wires. The invention provides a device which may be supported by the wires themselves without the addition of extra cross arms on the pole.

Of Interest to Farmers.

FENCE POST.—A. M. WEATHERLY, Sr., Rome, Ga. The present invention is an improvement on a fence post previously patented by Mr. Weatherly. It is arranged to be cast in a single piece. Its form is such that it may be used as a corner post, as well as being provided with pockets or recesses which are closed at the back and separated by a recess extending at right angles to the above-mentioned recesses.

Of General Interest.

SMOKING PIPE.—W. R. KAUFMAN, Sulphur, Okla. This tobacco pipe is provided with a bulb in the stem which is adapted to trap the saliva. In the bulb is a central partition of screen material which strains, dries, and cools the smoke to be strained and dried. When desired the bulb, which is composed of two sections screwed together, may be opened and cleaned.

PLUG FOR GAS WELLS.—W. F. BURGESS, Atwood, W. Va. The invention provides means for plugging gas wells whose yield of gas has ceased. It consists of a hollow tapered body portion with devices slidable thereon and adapted to wedge and lock the body in the well, and an elastic extensible sleeve or cylinder fitted with a tapered plug which is slidable in the body and thus adapted to extend the sleeve.

TRAP.—A. O. THOMPSON, Wolverton, Minn. This trap consists of two ring-shaped jaws which are spaced apart to make room for an intermediate opposing jaw that operates between them. A simple latch is provided to hold the intermediate jaw and a trigger arm on this latch extends across the ring-shaped jaws so that it will be sprung by an animal endeavoring to pass through the jaws.

PRESSURE REDUCER FOR GASEOUS VAPORS.—H. A. REED, New York, N. Y. This invention provides a pressure reducer for ale, beer, and similar liquids, and has for its object to reduce the pressure of the fluid in drawing it from the barrel or cask so that the gas and liquid will pass out in proper proportions without waste of the gas, thus obviating the danger of the beverage becoming flat.

CALENDAR.—J. FERRERES, Habana, Cuba. This calendar is of the type provided with two members rotatable with respect to each other, one of the members bearing the names of the days of the week and the other the numerals of the days of the month. The calendar invented by Mr. Ferreres is so arranged that the names and numerals will be right-side up and easily read irrespective of the extent to which the rotary member is turned.

COLUMN.—C. T. CUNNIUS, Long Branch, N. J. Stave columns as generally constructed are apt to break at the joints and warp apart. The present invention aims to overcome this difficulty by constructing the column of a plurality of staves, all of approximately the same taper, with one stave having an inner and outer section, substantially equal to the length of the other staves. Through the staves a band is circumferentially passed with the ends emerging at the inner section of the sectional stave, where they are joined, to bind the staves together. The outer section is then applied to cover the joint.

ATTACHMENT FOR SEINES.—N. L. LEBILLE, Lockport, La. The object of the invention is to provide a stake which is to be used to secure the ends of the seine in place while the seine is being hauled. Means are provided for holding the seine close to the mud without damage to the seine. The stake is fitted with a number of points of different length, which may be applied as may be necessary for use on different bottoms where the depth of mud varies.

FILTER.—VIRGINIA TONINETTI, Milan, Italy. This filter is provided with two chambers, the upper one having a number of spouts projecting into conical holders supported in the lower chamber. These holders are adapted to be fitted with filtering material. The filtered liquid issues from the holders into the lower

chamber, where it may be tapped off as desired.

CONSECUTIVE NUMBERING APPARATUS.—C. SPIELMAN and F. W. WICHT, New York, N. Y. The object of this invention is to provide an improved consecutive numbering apparatus fitted with a number of sets of numbering wheels, actuated simultaneously and of which any set may be placed in print in either a transverse or a lengthwise direction. The sets may be adjusted toward or from each other and quickly fastened in the adjusted position.

HEDGE TRIMMER.—F. L. GILMAN, Engene, Ore. This hedge trimmer is of the hand-operated type, consisting of a hand-operated mechanism which may be strapped to the person and a many-bladed cutting shears operable by this mechanism and adapted to be guided by the hand along the hedge.

TIE FASTENER.—J. P. CHAMBERS, Chattanooga, Tenn. This invention provides a simple flexible member which may be used to rapidly secure the ends of a cord tied about a package. It is particularly adapted for tying packages of letters and the like, and should be useful for the mail service as well as for lawyers, bankers, insurance men, and the like, where numbers of packages of papers are kept on file. The particular advantage of the tie is that it holds the ends of the cord in such a way as to permit the package to be untied at a moment's notice.

COIN-CONTROLLED LOCK.—F. W. KASSLER, St. Louis, Mo. This invention relates to a coin-controlled lock adapted particularly for use in connection with public telephone booths, the object being to insure the payment of tolls. The lock is provided with means for closing the coin chute when a person is using the booth so that it is impossible for any other person to interfere with the lock.

GAME PIECE.—F. WALSTEIN, New York, N. Y. This game piece is adapted for use in out-of-door apparatus for playing chess, checkers and the like. It is arranged to permit of conveniently moving the piece about over the game board and to securely hold the same in position in a field of the game board when at rest.

HITCHING-WEIGHT HOLDER.—H. H. TOTHELL, Lockport, N. Y. A means is provided by this invention for supporting a weight employed temporarily for putting a check on a hitching strap. The weight is hung from the floor of the vehicle body. Normally it clears the ground, but when desired the driver may release the weight, without leaving his seat, and permit it to fall to the ground.

FLASHLIGHT FOR PHOTOGRAPHIC USE.—E. B. MOORE, Los Angeles, Cal. When photographing an object by means of the ordinary flashlight, the high lights are apt to be accentuated and there is a sudden change to the deep shadows without any middle tones. The present invention aims to overcome this objection by providing a source of illumination having a relatively large area. In this way the harsh effect produced by an arc light or common flashlight in which the light emanates from the concentrated point is largely overcome.

COMBINED LADDER, STEP LADDER, AND SCAFFOLDING.—H. H. THOMPSON, Lawrence, Kans. The invention provides a ladder which may readily be converted into a step-ladder or may be employed as a portion of a scaffolding. The present invention is an improvement on a construction previously patented by Mr. Thompson. The design is such that two ladders may be connected so as to serve as the support of the scaffolding.

Machines and Mechanical Devices.

SOUND REPRODUCER.—W. A. CHAPMAN, Smithville, Ark. This sound reproducer is particularly useful in connection with talking machines of the disk type. Its object is to provide an efficient sound reproducer which will eliminate harsh, shrill, and metallic tones and exactly reproduce the volume, register, and tone shading of the original sound.

CALCULATING MACHINE.—E. LEDER, Berlin, Germany. The object of this invention is to provide a machine by means of which the logarithms of numbers can be ascertained, and logarithmic calculations be effected. With this machine ordinary arithmetical calculations can be made rapidly and accurately by the employment of logarithmic principles.

TALKING MACHINE.—W. A. CHAPMAN, Smithville, Ark. The invention provides means for supporting the sound tube of a talking machine so that the tube is free to swing in two directions without interrupting the propagation of the sound waves through the sound tube and the horn which communicates therewith.

WASHING MACHINE.—J. BECKER, Canal Dover, Ohio. A strong and efficient washing machine is provided by this invention which can be manually operated, which can be adjusted to adapt it for use with varying quantities of articles to be washed, and which can be taken apart so that it can easily be shipped or stored when not in use.

COMPUTING BALLOT BOX.—C. A. BALL, Marion, Ind. This computing ballot box is specially adapted for use of fraternal and benevolent societies, lodges, clubs, and the like, whereby a more reliable and secretive method of conducting the election of applicants for membership is obtainable than at present. The

invention provides a method of conducting a secret, affirmative, or negative ballot, without the aid of tellers or the use of paper ballots.

Prime Movers and Their Accessories.

AUTOMATIC STARTING VALVE.—J. B. LANE, Glenwood Landing, N. Y. The invention relates to improvements in machines for controlling the pressure in conduits, containers, and the like, and more particularly relates to that type of controller in which the flow of liquid through one conduit, for instance a motive fluid for operating a pump, is controlled by the pressure in a separate conduit or container, for instance, air compressed by a pump operated by the motive fluid.

ENGINE STARTER.—L. S. TUTTLE, Eastport, N. Y. A hand-operated starting device for internal combustion engines is here provided in which danger while cranking the engine due to back firing will be eliminated. The crank automatically operates to release the driven shaft or other mechanism for driving the engine, should the engine back fire, and it is ejected from the shaft as the engine starts in the proper direction under the influence of its motive agent.

Railways and Their Accessories.

CAR COUPLING.—O. L. ALBERTSON, Richmond, Va. The invention relates to an improvement in car couplings of the twin jaw type and provides an improved method of interlocking the jaws so that when closed they will not exert any pressure upon the opening lever.

MAIL BAG CATCHER AND DELIVERER.—W. R. MORRISON, Derry, N. H. Mr. Morrison's invention is an improvement in devices used on railways for receiving mail sacks from a passing train and delivering the same thereto. The device is arranged to relieve the impact of the mail bag so that injury to the same or the crane will be avoided.

TIE PLATE.—F. A. PIPER, Redlands, Cal. The invention provides a strong and inexpensive tie plate formed of sheet metal and having shoulders at the ends to engage the outer edges of the rail bases. The plate is provided near the ends with openings to receive the spikes at opposite sides of the rail, and with laterally disposed flanges constituting spurs which are forced into the tie to secure the plate thereon.

CAR MOVER.—C. H. SHOTWELL, Akron, O. This car mover consists of a lever composed of two members which are pivoted together, the fulcrum being adjustable to operative position after the load arm has been disposed against the car wheel. The load arm, which serves as a shoe, has a surface which conforms with the configuration of the tread of the car wheel. The device may be attached to the periphery of the car wheel in such manner that when power is applied to the lever it will be locked to the wheel and turn with it.

METALLIC RAILROAD TIE.—A. M. BAIRD, Topeka, Kans. The present invention is an improvement on a construction previously patented by Mr. Baird. It is provided with an open channeled body and is fitted with metallic clamps for the rail, the clamps being secured in cross pieces or top plates connecting the sides of the channeled body. The tie is particularly adapted for use on sharp curves of a railroad or any other portion of the road bed that may incline more or less laterally. The tie body is fitted with wings or lugs which prevent endwise creeping.

RAIL BENDER.—D. BELLONI, Edri, Pa. This device is designed for bending the rails or track to the necessary curve or for straightening the rails. It belongs to that class of benders in which a bowed yoke with hook shaped ends is provided at the center with a screw-threaded enlargement adapted to receive a screw stem which passes through the enlargement and bears against the rail at a point midway between the hooks of the bowed yoke.

Vehicles and Accessories.

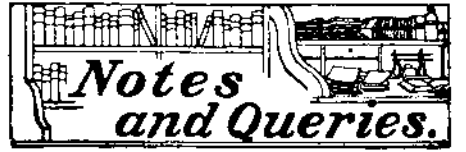
MOVING VAN.—A. B. YETTER, New York, N. Y. The invention provides an extension for the rear end of a moving van whereby the capacity of the van may be increased whenever necessary, and which will protect articles ordinarily strapped outside the end of the van. The attachment is adaptable to any type of van and will not interfere with the opening or closing of the doors.

TRACTION WHEEL.—F. BOTTRILL, Tintinara, S. Australia, Aus. This invention has been devised to facilitate the movement of traction engines over sandy or yielding surfaces, and its novel features consist in the provision of a series of oscillating bearers, flexibly mounted upon and attached to the wheel rim in one or preferably two circles, the bearers in each circle being arranged end to end between suitable flanges extending around the rim.

Designs.

CLOCK STAND AND PICTURE FRAME.—G. KEPPLER, New York, N. Y. The design consists of an ornamental frame supported by a pair of legs in the form of dolphins. The frame is provided with a shell effect at the upper end, while at the sides are conventional flower effects.

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.

The full name and address must accompany all letters, or no attention will be paid thereto. This is solely for our information. All queries are answered by mail, and a few of the selected answers are afterward published in the paper. We cannot undertake to furnish information on matters of personal interest, without reasonable compensation. To answer questions which are not of general interest usually costs us from \$2.00 to \$3.00 each upward, and this sum should invariably be remitted in such cases. When there are questions involving building or other construction, or when calculations must be made, an estimate of the cost will be furnished upon request. We cannot give answers to examination papers, or decide wagers, nor can we undertake to solve mathematical problems of any description whatsoever. Do not use postal cards.

Queries from this vicinity not answered within fourteen days should be repeated in full. Queries from points more remote will require a longer time.

We do not make chemical analyses; but we are always pleased to give the names of minerals which are submitted to us, when it is possible for us to do so. The minerals should be sent marked distinctly with the name of the sender, and should be sent fully prepaid.

Buyers wishing to purchase any article not advertised in our columns will be supplied with the addresses of the houses manufacturing or carrying the same, as soon as possible, or if we are unable to do so, their queries can be advertised in our special classified column.

Any books on any scientific or technical subject can be furnished. We solicit requests for quotations. The SCIENTIFIC AMERICAN SUPPLEMENTS referred to are mailed for ten cents each. Book and SUPPLEMENT catalogues will be sent free on request. A careful reading of these "Hints to Correspondents" will prevent any misconception as to the uses and will prevent abuses of this column.

(10980) C. H. C. says: Can you inform me of the philosophy of the curving of a tennis ball when struck with a "cut," and why some balls, with a forward twist, drop, and others, with a reverse twist, carry a long way without dropping? Is the cause gyroscopic action, or the result of the climbing motion of the ball against the air, or what? A. The curving of a tennis ball is probably due to the same cause as that of a base ball. The rotation of the ball is such that the air pressure is greater on the side toward which the ball rotates, pushing the ball in the opposite direction. See SCIENTIFIC AMERICAN, July 16, 1904, for a discussion of this question. This explains upward and downward motions of balls, as well as sideways motions. There is no gyroscopic action, so far as we can see.

(10981) C. E. D. asks: In your reply to query 9606, you state that daylight is gone after the sun is 18 deg. vertically below the horizon. It seems to the writer that this is an error. On almost any clear night in the latter part of June, the sun's light can be traced, decreasing as the hours pass, farther and farther north until the North Pole is passed, when it begins increasing until dawn. If this is not daylight, what is it? It is a well-known fact that the nights in summer are not so dark as in winter, and this must be because the daylight is not so fully excluded. A. You are quite right in supposing that the light seen in the sky after the sun sets is sunlight. It is reflected from the dust particles in the upper air. This is twilight, not daylight, since daylight implies the seeing of objects distinctly, while twilight implies a dim, indistinct vision. *Twil* here means *between*, that is, neither light nor darkness. The twilight zone is about 1,500 miles broad, to the east and west of the sunset line. At different times in the year a different time is required for the sun to reach an altitude of 18 deg. below the horizon. In our latitude this is more than two hours in midsummer, and the shortest possible duration of twilight in the torrid zone is one hour twelve minutes, all the year round. The writer has lived there, and seen the night fall almost as soon as the sun sets. Twilight is not reckoned upon for working in the torrid zone, as it is here in the summer. The twilight illumination of the sky swings around toward the north as the sun itself does, and in the most northern portions of the United States the twilight zone does not dip below the horizon, even at midnight. About latitude 48 deg. twilight of morning meets evening twilight at the north. Even in Montreal or Edinburgh the evenings of summer are very long, and the streets are filled with people much later in summer than with us. But wherever on the earth the sun is 18 deg. below the horizon, it is night, and no light of the sun is to be seen above the horizon. Another fact in this connection, is that the sky is never dark. This, however, is not due to the sun, but to the stars. The Milky Way is above the horizon in summer in our latitude, and it gives a great deal of light by night, enough to make the night sky of that time brighter than when it is not a part of our night sky, as is the case in winter. Then, too, the stars which cannot be seen by the unaided eye give us much light. The stars which are not visible to the eye give more light than those which are visible. We quote Todd's "New Astronomy," p. 424, on this point: "Accepting a sixth-magnitude star as the standard, and expressing in terms of it the light of all the lucid stars registered by Argelander (a catalogue of 324,000 stars to the 9½ magnitude), they give an amount of light equivalent to 7,300 sixth-magnitude stars. But cal-