

## RECENTLY PATENTED INVENTIONS.

## Bicycle-Appliances.

**PEDAL.**—CHARLES D. WALKER, Honolulu, Hawaii. The pedal comprises a disk held upon the crank and carrying on its periphery a pedal-ring having rotation upon balls running in raceways on the periphery of the disk. The pedal-ring carries a foot-support. As the pedal moves down, the rider's foot inclines the foot-support so that its rear end is lower than the front end, the greater portion of the support being in the rear of the pin. By reason of this arrangement, it is claimed that the rider secures a foothold which will reduce the strain on the pedal ball-bearings, and which will facilitate ankle-motion.

**DRIVING-GEAR.**—EDWIN C. POHL, Denver, Colo. On the bicycles in general use, the pedal is made to describe a complete circle, thus causing the foot to pass through a similar path while the effectual advance of the foot is equal only to the diameter of the circle. In the present invention, the pedals advance through sixty degrees and then return, thereby avoiding much of the usual unnecessary motion. The inventor gives a reciprocating motion to the pedals by the introduction of a connection between the crank-shafts, and by a piston-rod connection with the driving-wheel, so that the power applied to one pedal advancing, causes the other to return; or the momentum of the bicycle carries the pedals through this advancing and returning motion. The rider can, therefore, use his power either in driving or retarding the bicycle.

**ADJUSTABLE HANDLE-BAR.**—JESSE ALEXANDER, Brooklyn, New York city. The hollow cross-head of the bar is slotted in alignment with the steering-post. A spring-pressed slide-bar is adapted to engage a perforation in the handle-bar within the hollow cross-head. A bolt passes across the post through perforations therein, to clamp it and the hollow cross-head. By depressing the slide bar, the handles can be raised or lowered to any position. The slide bar, upon being released, springs into engagement with the slotted cross-head and holds the bar in position.

## Electrical Apparatus.

**ELECTRIC LIGHTING APPARATUS.**—ANDREW FLECHER, Savannah, Ga. This apparatus is designed to be employed for especial X-ray illumination, or for general electric lighting. The lamp used comprises a vacuum-bulb in which is located one pole of an electromagnet having a fluorescent surface. The helix of the magnet is arranged in a primary circuit-wire around which an insulated secondary wire is wound throughout its length between lamps. The helix extends the full length of the primary wire between lamps, and is provided in the bulb with cathode-terminals. The cathode rays, as they radiate from the terminals, are laterally deflected by the influence of the magnet, and in bombarding the especially prepared surface, cause that fluorescent surface to shine intensely.

## Mechanical Devices.

**GRAVITY-MACHINE.**—WILLIAM H. HAWKES, Ann Arbor, Mich. This machine is designed to measure the distances a body falls during successive equal intervals of time, in order to show experimentally the acceleration due to gravity, at the same time to record the measured distances. Upon the frame of the machine a pulley is journaled, about which passes a band carrying a weight. Over the band a pencil is mounted, which is actuated by the armature-lever of an electromagnet to leave a mark upon the moving band. In the circuit of the magnet a mercury-cup is placed, into which dips the lower end of a pendulum. The pendulum in swinging dips into the mercury at the end of each down stroke, completes the circuit, and causes the pencil to leave a mark upon the band. These marks represent the distances fallen by the body carried by the band during the beats of the pendulum.

## Miscellaneous Inventions.

**BARREL-COVER-TIE HOLDER.**—COLONEL F. DEAN, Carmel, N. Y. The holder provided by this inventor is designed to hold a cloth cover on the barrel. The holder consists of a single length of wire bent to form two concentric rings and having the ends turned around the rings at top and bottom and then turned outwardly to form prongs to be driven into the barrel. The device is to be permanently attached to a barrel, and is designed to be used many times for shipment and re-shipment.

**FUMIGATING SHOE-TREE.**—JOHN S. BUSKY, Brooklyn, New York city. The tree is hollowed to form a cavity in which an antiseptic or fumigating apparatus is placed, provided with means for impregnating it with an antiseptic liquid. The tree has openings from the interior cavity to the outside, through which the liquid may act upon the shoe.

**GARMENT-HANGER.**—ADAM K. BOWMAN, Greensburg, Pa. This hanger for skirts and the like consists of skeleton wings extended in opposite directions. Each wing has an upward and outward inclination and is provided with an inclined end supporting-section. A coil connects the lower members of the wings, and a shank extends upwardly from the junction of the two wings. If the waistband should become unbuttoned, the skirt could not drop from the device, since the weight of the skirt would carry the wings down until they had spread apart sufficiently to hold the skirt.

**HINGED BUCKLE.**—JESSE R. YOUNG, 710 Bank Street, Kansas City, Mo. Considerable difficulty is experienced in sewing a buckle to a strap or rein because the rigid metal keeper is in the way of the needle and presser-foot of the sewing-machine, so that several stitches have to be sewn by hand. To overcome this difficulty, the inventor hinges his keeper to the buckle, folding it over so that the sewing can proceed without interference. After the stitching is completed, the keeper is folded back over the strap, and riveted in place.

**VEST.**—JOSEPH G. EWING, McDonald, Pa. In order to economize material and labor, and thus reduce the cost of manufacturing coats and vests, means have been devised for providing false lapels which resemble those of the usual construction. The means consist in turning the cloth over at the front edge of the vest and holding

it in place by a piece of inelastic tape stitched to the cloth. This line of stitching and the lapped edge of the cloth form a pocket which is stuffed to form a swell resembling the lapel ordinarily seen on a coat or vest.

**FILTERING APPARATUS.**—CHARLES V. F. LUDWIG, St. Louis, Mo. The purpose of the present invention is to provide a filtering apparatus designed to purify the water of rivers and streams, the apparatus being arranged to filter the water directly and to return the sediment to the source of supply. The filter has a filtering-wall of porous stone constructed with arches. Revolvable brushes are in contact with the arch-surfaces and have propellers which are actuated by the current. The propellers turn the brushes so that any sediment passing under the arches is scraped off. The sediment thus removed readily floats off or settles.

**ACETYLENE-GAS GENERATOR.**—OLIVER H. HAMPTON, Williamsburg, Ind. The bell of the gasometer has a sliding connection with a weight normally resting on a support in the tank and is connected with the generator by a vertical gas-pipe. A bell in the generator-tank is provided with a depending tube sliding on the gas-pipe, and is apertured at its upper end to permit the escape of the gas. The acetylene generated flows into the gasometer-bell, and when the pressure of the gas has risen within this bell to the desired degree, the gasometer-bell overbalances the generator-bell, and the latter is forced upwardly by the pressure of the gas.

**ATTACHMENT FOR TYPE-FORMING MACHINES.**—CHARLES A. HOLLENBECK and RICHARD F. WILSON, Albany, N. Y. The generally-employed method of forming lino-type or line slugs, consists in casting a line of one table on one slug and a line of the other on the other slug; and, after cutting off the blank parts of the slugs, the portions containing the tables are placed end to end. In order to overcome the difficulties of this tedious process, the present invention provides an assembling-slide carrying an adjustable upright and a fixed upright. By means of the improvement the inventors are enabled to cast on one slug a portion of each table, and at the same time maintain an alignment of the tables.

**PUZZLE.**—HERMAN SCHLIRF, Ashland, Wis. This puzzle or game consists of a board in which are sunk stalls in the shape of the numerals "1900." These stalls communicate with a circular pathway around a disk, which circular pathway communicates with other pathways. In the pathways large and small balls are adapted to travel the board being so tilted that one large and one small ball shall roll into each of the stalls constituting the numeral "1900." Owing to the peculiar form of the stalls, the inventor has termed his game "The Nineteenth Century Puzzle."

**SEAT FOR MARKET-WAGONS.**—GEORGE A. KINSEY, Springland, Queens, New York city. A simple, revolving, canopy-top seat has been devised by this inventor, which is especially adapted for use upon market-wagons and which is capable of facing the front or rear, so that when the wagon is at the stand the farmer may face his load and at the same time occupy the seat of the wagon and enjoy the protection of its attached canopy. The seat is pivoted at the transverse center of the body so that it can be readily swung.

**PRODUCT FROM BLAST-FURNACE SLAG.**—ALEXANDER D. ELBERS, Hoboken, N. J. Pulverized blast-furnace slag cannot be desulfurized in a practical manner by roasting it without suitable admixture, or in its crude state, because it is apt to resulfurify before the sulfur is fully removed. The roastings are liable to become too dense for the proper admission of air before even the first half of the sulfur has been expelled, and will hence certainly resulfurify during the progress of the heating. In order to obviate these and other difficulties, the inventor combines his pulverized desulfurized slag with three-fourths of one per cent and upward of sodium or potassium oxid in the fritted state. The products of this treatment are useful as a flux for the manufacture of glass and pottery, and as an admixture to hydraulic cements.

**MEANS FOR DETACHING HARNESS FROM SHAFTS.**—FREDERICK DICKERBOOM, Mankato, Minn. The attachment comprises a casing having an undercut groove in which a slide having a notch moves. A lock-bar is fitted in the casing and has a shoulder adapted to engage in the notch of the slide, the lock-bar moving bodily toward and from the slide. A bow-spring bears with its ends on the lock-bar and with its intermediate portion on the casing to push the lock-bar toward the slide. An eccentric-pin is mounted in the casing and engages the lock-bar at the side opposite to the spring by which to move the lock-bar against the spring and away from the slide. The attachment is to be applied to the thills and to be connected with the harness.

**ATOMIZER.**—WILLIAM E. WHITTIER, Brooklyn, New York city. An improved atomizer has been provided by this inventor, which is arranged to atomize a liquid and vaporize another in a very simple manner. The device comprises an inner and an outer receptacle. Air-inlet pipes lead to the inner and outer receptacles and are adapted for connection with an air-supply. Separate outlets extend from the inner and outer receptacles, each of the outlets terminating in a separate discharge-nozzle exteriorly of the receptacles, whereby the medicaments contained in the receptacles may be successively applied.

**ADVERTISING MEDIUM.**—JOHN A. ANIELLO, New Orleans, La. The medium consists of a wheeled vehicle in the body of which a shaft is arranged to be driven by the movement of the vehicle. Another shaft is provided which, when turned, operates a musical instrument. The various shafts have pulleys and belts to transmit power from one to the other. When the vehicle moves, motion is given to endless advertising bands carried by the vehicle; music is produced to attract attention; and in addition a figure is made to appear periodically to attract still further attention.

**CHEMICAL FIRE-EXTINGUISHER.**—ABRAM H. VAN RIPER and PATRICK F. GUTHRIE, Nutley, N. J. The apparatus comprises a main cylinder connected with a gas-pressure cylinder, an auxiliary cylinder connected by a pipe with the main cylinder, a plunger operating in the auxiliary cylinder, and a hopper containing a chemical cartridge and having a connection with the auxiliary cylinder. The main cylinder, filled with a chemical solution, is charged with gas from the gas-cylinder, the pres-

sure causing the solution to be discharged through a hose. Water is poured into the hopper, and this water, passing through the chemical cartridge will form a solution which can be forced into the main cylinder by means of the plunger.

**REVOLVING BLACKBOARD.**—MARTIN W. TUBBS, Portville, N. Y. The revolving blackboard is arranged to carry a number of flexible blackboards normally wound on rollers, but adapted to be singly unwound and extended over and fastened to a fixed support, and used like an ordinary blackboard. The whole arrangement requires wall space for but a single blackboard, with the advantage of having the use of several, and of concealing or exposing work at the pleasure of the teacher.

**INCANDESCENT-ELECTRIC-LAMP FIXTURE.**—BENJAMIN F. ROUR, Stanford, Ky. The lamp-fixture comprises a support on which a casing-section is rigidly mounted. Another casing-section is mounted to rotate relatively to the fixed section. A drum is secured to the rotatable section and is designed to receive and wind the electric conductors. A spring moves the drum and rotatable section; and a socket on the rotatable section receives the incandescent bulb. The lamp may be used both as a hanging lamp or as a standing lamp. In the former case the lamp, when drawn down, causes the rotating drum to unwind the conductors and to wind up the spring. The lamp upon being released from its position, is drawn up by the spring.

**GATE-LATCH.**—OLIVER E. POTTER, Cameron, Miss. This invention provides a gate composed of two parts pivoted to swing toward and from each other. Upon one-half of the gate a double latch is mounted, composed of toothed plates pivoted one upon each side of the gate, the outer or free ends thereof flaring outwardly to form a guide in order properly to register the two halves of the gate. Locking projections upon each side of the other half of the gate are engageable by the toothed plates.

**BRACKET-SUPPORT FOR WINDOW-SHADES.**—DAVID D. O'CONNELL, Wallace, Idaho. The bracket-support comprises bars held to slide upon each other, each bar being provided with a series of keyhole-slots. Buttons on the inner end portions of the bars are adapted to enter and to slide in the keyhole-slots. Each bar also has vertical openings near its outer ends. Angular hangers are provided, one member of the hangers being adapted to enter the openings. Clamping devices are located on the outer ends of the bars. The bracket-support is readily adjustable to any width of window and can be secured so as not to injure the window-casing.

**HINGE.**—LYMAN G. HILZHEIM, Jackson, Miss. This hinge consists of four leaves or sections, and three pivotal joints or points of articulation, the outer leaves being somewhat narrower than the inner leaves, and having screw-holes and free outer edges for connection with the door and the jamb respectively. The hinge, when the door is closed, is entirely concealed. Hence for safes, whose hinges should be carefully protected, for piano-tops, or for other smooth surfaces, the hinge is of especial service.

**HORSE-POWER AND PUMPING-JACK.**—BENJAMIN F. DARLINGTON and EDWIN P. CLARY, San Antonio, Tex. The present invention provides, in connection with a rotating head or turn-table, a sweep or shaft which rotates with the turn-table or head, being journaled therein, and which has a crank connected with the pumping-devices and a wheel rolling on the ground, or other suitable bearing, and operating to turn the shaft or sweep as the turn-table or head is rotated.

**OIL-WELL PACKER.**—JOSEPH DARLING, Chicora, Penn. The improvement devised by the inventor provides, in connection with the usual packer and the slips co-operating therewith, detent devices for restraining the slips, which may be set and reset. In connection with the slips a spring is furnished, secured at one end to the slips. A holder at the other end of the spring binds within the well-hole. The detent devices may be automatically readjusted to secure the resetting of the packer at either a higher or a lower level.

**AUTOMATIC LUBRICATOR FOR LOOSE PULLEYS.**—KARL WIDMANN, Patendorf, Austria-Hungary. The lubricator is designed to be used on loose pulleys, and is especially adapted to those pulleys which are driven at very high speeds. On the shaft a sleeve is mounted, which carries a dripping cup. The pulley has a hub formed in two hollow sections. Each section has a ring loosely mounted on the sleeve, which ring forms an oil chamber through which the dripping-cup moves. The oil is thus constantly brought into contact with the revolving parts.

**OIL-GAS LAMP.**—JAMES A. YARTON, Omaha, Neb. This invention comprises an improved form of generator and shield therefor, together with a method of supporting the lamp so that it may be swung to one side, and thus drawn from under the generator. The invention also comprises an improved construction of controlling-valve and settling-chambers, whereby any sediment in the oil is prevented from entering the generator-tube. A further novel feature is found in the direct contact of the filling wires in the generating-tube with the tip, whereby the tip is more thoroughly heated and condensation of the vapors and consequent clogging of the tip prevented.

## Designs.

**SHOULDER-GARMENT.**—FRANK F. AMSDEN, Malone, N. Y. One of the features of this design consists in forming the shoulder-garment with straight lower edges at back and front, and with curved lines at the sides.

**PENCIL-HOLDER.**—MALCOLM WILLIAMS, Pasadena, Cal. The pencil-holder is a tube having a studded exterior surface, the studs serving to prevent the pencil's falling from the pocket.

**CHURN-FRAME.**—MATTIE O. MORROW, Sulphur Springs, Tex. The churn-frame supports the heater and aerating devices entirely from the upper end, so that the latter are maintained in a suspended position in order that any kind of churn-receptacle may be placed on the frame and used in churning the butter. This saves the farmer the expense of buying an entire churn. The frame is built of wood and may be constructed by any carpenter, or farmer familiar with the use of woodworking tools.

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(7674) G. S. W. writes: I have looked in many books of reference here and have been unable to find a receipt for kalsomine. Will you kindly answer in your inquiry column. A. Prepared kalsomine can be readily purchased at any large paint store, but some of our readers may wish to prepare their own kalsomine. The following rules are given for the purpose of enabling them to do so: Soak 1 pound of white glue over night, then dissolve it in boiling water and add 20 pounds of Paris white, diluting with water until the mixture is of the consistency of rich milk. To this any tint can be given that is desired. Lilac.—Add to the kalsomine 2 parts of Prussian blue and 1 part of vermilion, stirring the mixture thoroughly and taking care to avoid too high a color. Brown.—Burnt umber. Gray.—Raw umber, with a trifling amount of lampblack. Rose.—Three parts of vermilion and 1 part of red lead, added in very small quantities until a delicate shade is produced. Lavender.—Make a light blue and tint it slightly with vermilion. Straw.—Chrome yellow with a touch of Spanish brown. Buff.—Two parts of spruce, or Indian yellow, and one part of burnt sienna. Blue.—A small quantity of Prussian blue will give a soft azure tint. Dark blue is never desirable. Delicate tints in the foregoing varieties of colors are always agreeable and tasteful, and so great are must be taken that they are not too vivid. The tints will always appear brighter than in the kalsomine pot, and this fact must be kept in mind when adding the coloring powders.

(7675) A. R. W. writes: Please send prices of the first books necessary to be studied in taking an electric engineer's course. A. We should advise you to begin with Thompson's "Elementary Lessons in Electricity," price \$1.40; Crocker's "Electric Lighting," price \$3; Hawkins & Wallis' "Dynamo," price \$3; all by mail.

(7676) Subscriber asks: If a stream of water is played on a trolley wire from a 1/4-inch nozzle what effect will it have on the man holding the pipe, if any, standing on dry or wet ground? A. We should not expect any effect either agreeable or disagreeable.

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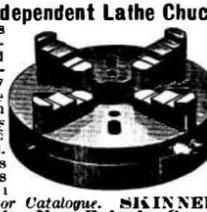
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Shipping case, J. B. Hopper	626,406	626,407
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(Continued on page 401)

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