

RECENTLY PATENTED INVENTIONS.

Agricultural Implements.

HAY-PRESS HORSE-POWER. — CHRISTIAN F. KOHLRUSS, Augusta, Ga. The invention is an improvement in horizontal, rotary horse-powers in which a horizontally-moving pitman is operated by a horizontal rotary horse-power, giving two full actions to the pitman at every revolution.

LAND-WHEEL ATTACHMENT FOR SULKY-PLOWS. GEORGE A. LITZENBERGER, Sunbeam, Ill. The inventor has devised means for connecting two land-wheels with a mounted or sulky plow, so effecting the attachment that the position of the plowshares is not changed relatively to the ground when the land-wheels travel over an undulating surface, enabling the implement to work perfectly either crosswise or lengthwise with the ridges and hollows of corn rows.

Electrical Apparatus.

CONTINUOUS-CURRENT TRANSFORMER.—ALFRED WYDTS and GUSTAV WEISSMAN, Rue Chaptal 3, Paris, France. The principle of the invention consists in rendering a continuous current alternating in order to enable it to be readily transformed by means of electromagnetic induction, the secondary alternating current of this transformer being then rectified by means of a commutator operated by the same mechanical device as that employed for rendering the original continuous current alternating.

ARC-LAMP.—EDWARD L. BROWN, McComb City, Miss. The inventor has provided a simple, ingenious device for automatically regulating and controlling the carbons to produce a constant light. The device is particularly adapted for search-lights, magic lanterns, and the like. The mechanism consists of spring-actuated gearing which is operated automatically as the current is cut out by the burning away of the carbons.

Engineering Improvements.

PACKING.—JOHN J. MOSS, 640 South Fairfield Avenue, Chicago, Ill. The packing is useful both for packing rods and joints and for various forms of machinery. The packing removes a certain amount of friction on the rod, and works automatically to the slightest friction. It can be placed in any position and oiled like a brass bushing. A packing-sleeve, comprising a spiral, is connected at one end with the stuffing-box. The other end of the sleeve bears between a spanner and the stuffing-box and serves continually to maintain the spiral under pressure.

Mechanical Devices.

FIRE-ESCAPE.—CHARLES H. SHIELDS and ALVIN SHAW, Spokane, Wash. The invention comprises a tubular ladder at each end of which a carrying-wheel is mounted. The wheels run on tracks secured to the building. A platform is attached to the lower end of the ladder and projects outwardly transversely. An extension-ladder is hinged to the platform and is capable of swinging up and down thereon. The carrying wheels are driven by a chain-gear.

DUMB-WAITER.—CHARLES W. HOFFMAN, Manhattan, New York city. By means of the improvements devised by the inventor, the manufacturer is enabled readily to change the cage-supporting rope-pulley to suit the width of the well or shaft and to bring the runs of the rope in proper alignment with the cage and the counterbalancing-weight, without the use of extra guide-pulleys. The arrangement also affords a convenient and simple support for the brake mechanism of the hoisting-drum.

ELEVATOR CONTROLLING APPARATUS.—JOHN J. COOK, Butte, Mont. The apparatus is particularly adapted to mine-elevators and is so constructed that a sure and effective means is provided for holding the elevator, these means being continually under the control of the operator. The car moves past a guide rail. Shafts are mounted on the car, and a dog is attached to each shaft and works with the guide-rail. Gears are attached to the shafts and mesh with rigidly connected racks fastened to a link. A lever, mounted on the car, is pivoted to the link. A hand-latch is mounted on the lever, and a quadrant on the rack, coacts with the hand-latch to hold the lever in the desired position.

WASHING-MACHINE.—CHARLES W. THOMSON, Ontario, Cal. The object of the invention is to provide an improved washing-machine, simple in construction and arranged to enable the operator to pick up and thoroughly wash any part of the clothes without the least danger of injuring the clothes. The machine has beaters and handled arms carrying the beaters. The fulcrum portions of the arms are reinforced; and bushings screw into the reinforced arms.

Railway Contrivances.

DUMPING-CAR.—GEORGE H. LAWRENCE, Middletown, N. Y. The car is a coal-car of the hopper-bottom type, and is provided with a winding-shaft located on the under side of the car and at one side of the dumping-doors. An equalizing-chain is arranged for winding at its ends on the shaft, the chain extending transversely across the dumping-door and having a traveling connection with the car to allow the chain to equalize. Unequal closing of the door and, consequently, loss of coal are thus prevented.

DUMPING CAR.—WILLIAM H. ONION, New Orleans, La. The dumping-car does not require extra track-sections or alterations in the bridge or track upon which it is to be used. A stop or bumper is provided, capable of convenient and expeditious application to a rail at any point in its length. The car is so constructed that upon striking the stop, it will be automatically

dropped to dumping position and a section of the body operated to discharge the load. Means are provided for varying the inclination of the car-body when the load is to be dumped and supporting a car at its discharge end while dumping. The movements of the car are controlled by a cable which is directly utilized for raising a section of the car-body and caused, in connection with the stop, to incline the car-body suitably for dumping.

Miscellaneous Inventions.

WELL-PULLEY.—JAMES FOSTER, Goben, Tex. Connected with a winding drum and its frame is a guide device for a rope, adapted to guide the rope as it is wound upon and unwound from the drum. The guide device is mounted to travel upon a feed screw carrying a driving-wheel. The winding-drum has vertical movement in its frame to gravitate into driving engagement with the driving-wheel. The rope carrying the bucket can be automatically controlled in a manner to insure the rope's being guided to and upon the pulley in raising and lowering the bucket, thus preventing the hoisting-rope's coming in contact with the mud and water that usually accumulate around a well-curb.

PILING.—WILLIAM B. BONNELL and ROBERT F. SMITH, Macon, Ga. The object of the invention is to provide an improved tubular, metallic piling, designed to take the place of the wood piling now generally used in the construction of breakwaters, levees, and the like. The piling consists of a number of metal tubes arranged side by side. Over the upper edges of the tubes a cap is fitted. Through the lower edges of the cap, bolts extend transversely, which engage sundry tubes so as to hold the cap in place and stiffen the positions of the piles. Metal piles are more durable than wooden piles, are stronger, and are not liable to the attacks of insects.

GATE.—JOSHUA TENNANT, Carson City, Mich. The gate is capable of being swung from its swing-post to or from a team or person and of being slid past the swing-post and opened as far as desired. The gate can be raised or lowered while in either its normal position or when slid past the swing-post and held in the position to which it can be vertically adjusted in order to clear any obstructions, or can be held sufficiently from the ground to prevent snow-drifts from rendering the gate inoperative. The gate, in addition to its pivotal-support, has a crane-support, so that it will not be affected by lateral or vertical strain.

LEVELING ATTACHMENT FOR VEHICLES.—JOHN NASH, Dayton, Wash. The object of the invention is to provide a means for adjusting the body of a vehicle (especially a threshing-machine) to a level position, thus preventing the vehicle from capsizing and avoiding the labor of digging pits for the wheels, to level the body. A hinge-section is pivoted at one end to the running-gear and at the other end to a portion of the body. By means of adjusting-devices at each side of the body, the hinge-section can be swung to level the body.

GATE.—JAMES M. ADAMS, Deckertown, N. J. The gate is of the sliding and swinging class and is provided with a simple means whereby it can be adjusted vertically to clear it of snow or to permit small animals to pass underneath and to form a barrier for large animals. Connected with the gate and its foot-post is a guide-rail secured to the foot-post. A head or block is vertically adjustable on the rail and is provided with a perforated lug engaged by a pintle extended from a gate-supporting roller.

FIFTH-WHEEL.—AMBROSE E. ABBOTT, American Fork City, Utah. The fifth-wheel comprises a ring-plate to which springs are attached. Segmental plates are secured to the axle at opposite sides of the king-bolt. Rollers are mounted in depressions formed in opposite ends of the segmental plates. Heads on the ends of the rollers prevent their displacement lengthwise. The use of grease or other lubricant is unnecessary, thus preventing the accumulation of dust and dirt.

APPARATUS FOR PRODUCING DISTILLED WATER.—CHARLES F. CONOVER, Manhattan, New York city. The invention consists of a system of treating water by which it is evaporated and then condensed so as to produce pure water. One object sought to be accomplished is the utilization of waste sources of heat for the evaporation of water and the subsequent condensation of the water so as to form chemically pure or distilled water. The evaporation of the water heated by waste-heat is rendered possible by the employment of a vacuum-pump, which lowers the pressure on the water and causes it to boil at a much lower temperature than when subjected to atmospheric pressure.

Designs.

CANE OR UMBRELLA-HANDLE.—WILLIAM H. SPEARS, Queens, New York city. The design consists in alternate plain and fluted panels, the plain panels being circumferentially continuous and arranged in the same general plane.

CHIMNEY-CAP MEMBER.—JOHN COOPER, Brooklyn, New York city. The design provides a rectangular member for chimney-caps, such as are used on all houses in large cities.

HOLDER.—FRANK A. SMITH, Chicago, Ill. The device is designed to hold hats, coats, umbrellas, and cards. The holder can be nailed to the wall in any desired place.

BOX-BLANK. EDWARD E. PINKERTON, Sioux City Iowa. The blank is reinforced at certain portions so as to form a box stronger than that ordinarily produced from a one piece blank.

STRETCHER-PLATE FOR CARPET-TACKING DEVICES.—CHARLES P. KNAPP, Deposit, N. Y. This inventor has produced a stretcher-plate of novel form adapted to be used in connection with a carpet-tacking device. The plate is of triangular form and has a series of prongs on its lower face adapted to engage with the carpet and stretch the same. The plate is also intended to be reversed when necessary, and by its peculiar form is very useful in stretching carpet in the corners and along the sides of rooms.

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.

Marine Iron Works. Chicago. Catalogue free. For bridge-erecting engines. J. S. Mundy, Newark, N. J. "U. S." Metal Polish. Indianapolis. Samples free. Yankee Notions. Waterbury Button Co., Waterbury, Ct. Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O. Book "Dies and Die-making," \$1, post paid. J. L. Lucas, Bridgeport, Ct. Send for index sheet. Ferracute Machine Co., Bridgeton, N. J., U. S. A. Full line of Presses, Dies, and other Sheet Metal Machinery. Special and Automatic Machines built to drawings on contract. The Garvin Machine Co., 141 Varick St., N. Y. The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Fort of East 138th Street, New York. The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4. Munn & Co., publishers, 361 Broadway, N. Y. Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

Notes & 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, such 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.

(7852) J. A. DeV. asks: Can such a current be passed over a cable, composed of six number 6 wires of the Brown and Sharpe gage for copper wire, that will deliver 200 amperes at 2,000 volts to a motor at the end of the line without danger of breaking through the insulations and forming a short circuit with the returning cable of the same size, which lies close along beside it. The cables to be five miles long and submerged in the sea but protected by gutta percha insulation to an amount that will equal the cables themselves in weight. A. The underwriters allow a No. 6 wire in waterproof insulation to carry 65 amperes. Your six wires could carry about 400 amperes. If the insulation is all right, there is no reason why the return may not lie alongside of the other cable. Much higher voltages are now put in the same sheathing.

(7853) W. J. I. asks: What proportions are required in the building of a dynamo which is 3/4, 7/8 or anything in that vicinity of a horse power? The Edison with a drum armature is the one I want to build. Give all about size of pieces in the armature and commutator plates, and amount of wire and size of it required. Also, give size of the iron cores of the field magnets and amount and size of wire used in the winding of them. A. Your request is too indefinite. You do not even state the voltage you expect to have from your dynamo. We recommend you to purchase Parkhurst's "Electric Motor Construction for Amateurs, price \$1 by mail; or Watson's "One-quarter Horse Power Motor," price 50 cents and follow the plans given there.

(7854) J. E. C. asks: Have you anything on subject of Clarke's wireless telegraphs as per page 213 SCIENTIFIC AMERICAN, issue of April 2, 1898, so one can build the machine. In the issue given above no measurements or data are given. A. We have no plans with details of the instruments used in the Marconi system of wireless telegraphy, so that one could build machine.

(7855) X. Y. Z. asks why the following rule is incorrect for calculating the area of a circle or "squaring the circle." I have no doubt it is fallacious, but why? The area of a circle equals the square of one-fourth of the circumference. A. The area of a circle is found from the formula: Area = πr², in which π = 3.1416. To apply the rule given above, —The circumference = 2πr. (1/4 of circum.) = πr/2. Substitute for π² its value given above and we have for the area of a circle 2/4786 R², while the true value is 3.1416 R². The rule above cannot in any case give the correct area of a circle. Its only fallacy is that it is false.

(7856) S. E. A. asks: 1. What is the exact temperature required to change steam into the gaseous state? A. Steam is already a gas formed by the evaporation of water. The question perhaps is intended to ask for the temperature of the separation of steam into its constituent gases, oxygen and hydrogen. The dissociation of steam begins at 2,200° Fahr. and is complete at 4,500° Fahr. 2. How can the two gases of which it is composed be most easily separated without the use of electricity? A. This is done in great quantities in the manufacture of water gas. Coal is raised to a high temperature in a furnace, which is then closed and the steam is blown through the hot coal, raising it above the temperature of dissociation. The SCIENTIFIC AMERICAN SUPPLEMENT has contained several articles upon this subject. 3. What is the temperature of the oxy-hydrogen blow-pipe flame? A. It is estimated at about 4,000° Fahr. 4. Can oxygen and hydrogen be introduced into the blow-pipe in a mixed state without danger of an explosion? A. They are so mixed in the mixed jet commonly used in the stereopticon. Special care must be had in the arrangement of such a blow-pipe to avoid explosions.

TO INVENTORS.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending

MARCH 27, 1900. AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing various inventions and their patent numbers, including items like 'Accountment support, C. Dodge', 'Air compressor, J. D. McKinnon', 'Alcoholic liquids, purification of, De Chanterac & De la Baume', etc.

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