

RECENTLY PATENTED INVENTIONS.

Electrical Apparatus.

DRY-BATTERY.—ERNEST MEYER, Boulevard de Clichy 60, Paris, France. About the centrally-located negative electrode, a depolarizing mass is located. A positive electrode surrounds the depolarizing mass. A layer of peat fiber or moss is interposed between the cloth cover and the positive electrode and is impregnated with an exciting liquid. A filling of plaster contains some of the exciting liquid and extends at the top of the battery between the electrodes. The compactness, simplicity of construction, and high efficiency of this battery are noteworthy.

Gas-Generating Machines.

ACETYLENE-GAS GENERATOR.—JAMES WALTON, Phenicia, N. Y. This apparatus comprises a gasometer and a generator connected by a valved pipe. A bracket is carried by the gasometer-bell, from which bracket a rod projects downwardly, provided at its lower end with an arm. A chain or cord is secured to an arm of the pipe-valve and has its ends secured to the bracket and arm, so that the rise and fall of the bell will close or open the valve in order to control the generation of gas. The action is automatic. Care has been taken to provide means for cooling the gas before distribution.

ACETYLENE-GAS GENERATOR.—WILLIAM H. MCGOLDRICK, San Antonio, Tex. The generator and gas-holder in this machine are combined in one apparatus comprising a tank in which a bell is mounted to move vertically, and has a generator-dome consisting of inner and outer walls separated to form a water-space. A pipe leads from the interior of the dome through the water-space to the interior of the bell above the water-level. A vent is connected with the pipe and controlled by a valve in the pipe. A generator-cylinder is extended upwardly from the bottom of the tank. A jacket of water surrounds the bell and the cylinder. The pressure of gas in the bell forces the water downward in the bell, causing it to rise at the outer surface and to pass through the feed pipe to the generator-cylinder.

ACETYLENE-GENERATOR.—AUGUSTUS F. SHRYVER, Arbutuckle, Cal. The generator-cylinder is arranged on the lower portion of the gasometer. In the generator is a spray-pipe connected with a valved supply-pipe. From the stem of the valve an arm is extended, the free end of which is adapted to be engaged by a cam-shaped projection on the top of the gasometer-bell. A curved arm, attached to the bell and projected over the cam-shaped projection, is adapted to engage the arm as the bell moves downward. The rising of the bell closes the valve of the feed-pipe; the falling of the bell opens the valve.

Railway Appliances.

LIFE-GUARD FOR TRAM-CARS.—WILLIAM T. WATSON, Victoria, British Columbia, Canada. The bed of the car-fender is divided into two parts hinged together and connected by means of chains with a frame normally stationary. The two parts are yielding; the force of a shock is further broken by a rubber buffer and by mounting the front bed so that it can slide rearwardly against the tension of springs. The invention is an improvement upon a similar contrivance devised by Mr. Watson.

Vehicles and Their Accessories.

VELOCIPEDE.—ERNST H. NEUBERT, Independent Hill, Prince William County, Va. The inventor has devised a velocipede which can be driven by the hands of the operator and in which the grips held in the hands may be moved to set the clutch devices into and out of adjustment to key the wheels upon the drive-shaft. An adjustable platform forms a support for the operator.

SEAT-COVER.—ARTHUR B. JONES, Lincoln, Mass. The cover is primarily designed for use on single seats—such as are employed on mowers and vehicles—and is arranged to be quickly folded or extended. The seat-cover frame for supporting the top comprises a curved base having hook-bolts whereby it may be fastened to a seat, and a vertically-disposed bearing. Upwardly-extending braces are secured to the base and have a clamping-bolt at their junction. A slotted standard receives the clamping-bolt and is fitted in the bearing of the base. A frame for the top is secured to the upper end of the standard and has braces connecting therewith. Adjustable straps are arranged to connect the upper end of the standard with the seat.

Mechanical Devices.

EDUCATIONAL DEVICE.—THOMAS L. MARTIN, Lewisburg, Ky. The invention is adapted for use in teaching writing, spelling, arithmetic, the fundamental principles of languages, or any subject that can be taught by copying. The device consists of a main frame; ribbon-winding rollers which are geared together; and a supplemental frame hinged to the main frame, so that it can be raised as required. Guide-rods are arranged at the front end of the supplemental frame, one guide-rod being higher than and in the rear of the other. A ribbon passes over the rolls and back to the winding-rollers. Upon the ribbon the words or signs to be copied are printed. The device saves the teacher much time and trouble.

CONVEYER.—JAMES W. BARNEY, Kansas City, Mo. This invention relates to a conveyer adapted particularly to the work of transporting brick from one point to another, particularly from kilns to a railroad, the invention comprising a hauling device having carriers adapted to receive the brick and arranged to run on trackways of novel form. The invention further comprises a novel manner of arranging the conveyer-runs so that they can be connected in various ways to carry the brick from any one of a number of kilns.

HOSE-WASHER.—JOHN J. KRESS, Perth Amboy, N. J. The purpose of the invention is to provide a washer of simple construction, which will thoroughly wash and clean the hose of fire-engines. In a boxing comprising two separable sections, two cylindrical brushes are superimposed. Forward of the brushes feed-rollers are superimposed. The brushes and the rollers are geared together. Water inlet and outlet pipes are provided. The boxing having been filled with water, the

machine is set in motion. The hose as it is fed through is scraped by the brushes. The surplus water is squeezed out by the rollers.

STREET-SWEEPER.—CHARLES Z. O'NEILL, Manhattan, New York city. The object of the invention is to provide a new and improved street-sweeper, simple and durable in construction and very effective in operation. The machine is arranged thoroughly to sweep the dirt from the street-surface into the buckets of an elevator, which in turn delivers the sweepings into a wagon or cart, with the rear end of which the sweeper is removably connected. Upon moving the vehicle forward, the sweeper is dragged along to sweep the street and to deliver the sweepings to the vehicle-body. When the body is loaded, the sweeper is detached to repeat the operation.

GRATE-BAR.—GEORGE S. SERGEANT, Greensborough, N. C. The grate-bar is formed in sections which are so connected at their ends or joints as to form a self-supporting connection at such point, thus avoiding the necessity of any cross-bars or similar supports between the opposite ends of the grate-bars.

AWNING FOR MINE SHAFTS OR TUNNELS.—BENJAMIN B. WHEELER, 934 Fifteenth Street, Denver, Col. The drip of water from the roofs of mines and tunnels is a serious annoyance to miners and workmen and is a constant source of danger to health. Mr. Wheeler has devised a drip-averting awning which is light, conveniently portable, and cheap, and which can be easily and quickly put up or removed. The awning consists of two sets of telescoping tubes, each tube having a pointed outer end to engage the tunnel-wall. Screws clamp the two tubes of each set together. The awning has hems to receive the tubes.

WATER-STOP OR GATE.—WALTER S. FISHER, Artman, Colo. This invention is a water-stop in the form of a gate for use in ditches such as are employed for purposes of irrigation. The water-stop comprises a main plate on which are extension wings projected and retracted by lever devices. These lever devices are pivoted independently of and connected with the wings. By these means water may be stopped at any point in ditches of different widths within the range of the stop. The stop can be easily handled and applied and removed by a boy or man. Moreover, the stop can be handled whether or not the ditch contains water or is empty, and avoids destroying the level of the land.

Miscellaneous Inventions.

RUNAWAY-HORSE CHECK.—CHARLES E. WILLIS, Manhattan, New York city. By means of this novel device, a runaway or fractious horse is instantly subdued, and made tractable, by a very slight pull upon a check-rein within convenient reach of the driver. The check-rein operates a leather-covered tongue or projection set within the throat-latch and acting, when pulled, at right angles with and directly upon the wind-pipe. The arrangement is simple, inconspicuous, and perfectly harmless to the animal, thereby doing away with the often cruel curb-bit, and can be readily attached to any bridle for either riding or driving, and without detracting from the appearance of either the horse or harness.

FEED-BOX.—ROBERT C. JARVIS, West Pullman, Chicago, Ill. The feed-box is so constructed for a team or for a single horse that it can be readily attached to the body of an animal and held in convenient position for feeding or be quickly secured to a pole or tongue or detached therefrom. In the box, feed may be packed and stored and the box be used as a seat when not needed for feeding the horse. The box can be attached to the body of the vehicle like an ordinary seat.

RECEIVER FOR DISCHARGED SHELLS.—CHARLES H. DIETERICH, Cooperstown, Ill. The receiver consists of a frame arranged for attachment to a gun. To the frame, members are pivoted capable of assuming a parallel position or a position at an angle to each other. A bag or net is attached to the members for the purpose of receiving the ejected shells. The device can be used with any repeating gun from which the shells are ejected from the side portion of the frame.

NECKTIE-RETAINER.—THEODORE S. WOOLF, Brooklyn, New York city. The retainer is made of a single piece of metal and embraces a receiving member for a collar-button, a locking member for the button, and cheek-sections which carry spurs serving to fasten the device to the shield of the tie.

Designs.

AXLE-SHIELD.—GILBERT Y. LOWE, Washington, Ga. The inventor has designed a shield which is intended to prevent sand from entering the space between the end of the axle and the hub of the wheel.

KEY-RING AND BOTTLE-SEAL BREAKER.—WILLIAM S. LORD, JR., Portland, Me. The key-ring and bottle-seal breaker is essentially heart-shaped, the apex being a plate or web.

BOTTLE.—GEORGE W. and HERMAN F. KLUMPP, Manhattan, New York city. The body is enlarged at its central portion; and the neck terminates in a bulb-like upper end.

WRAPPING-PAPER.—GEORGE A. C. GOETTING, Manhattan, New York city. The inventor is a drugist who has devised a paper which is to be used in wrapping up poisons. The paper is printed with skulls and crossed bones; and the words "poison" appear beneath the skulls and crossed bones. The paper should find its way into every drugist's shop.

PLATE.—CHARLES J. SEITER, Manhattan, New York city. The design consists of a group of rabbits eating cabbages.

BOTTLE.—CHAUNCEY J. KILMER, Brooklyn, New York city. The body of the bottle is cylindrical. The outer surface of the neck is concave at its lower end and cylindrical at its upper end. The inner surface of the neck is tapered downwardly at its upper portion and flares with a downward convexity at its lower portion. The distance between the concave and convex portions increases upwardly.

NOTE.—Copies of any of these patents can 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.

"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, postpaid. J. L. Lucas, Bridgeport, Ct. Send for index sheet.

Machine Work of every description. Jobbing and repairing. The Garvin Machine Co., 141 Varick St., N. Y.

The celebrated "Hornby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot 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.

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Notes & Queries

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(8008) T. O. asks: 1. I have a continuous current dynamo giving 40 amperes at 125 volts which I use for lighting purposes. I wish now to transmit 15 amperes a distance of 3 miles; what is the best way to do so with the least loss? A. You cannot transmit the direct current at 125 volts to the distance of three miles without very great loss. You should use the alternating current at high voltage for transmission. Consult the General Electric Company, Schenectady, N. Y.; or the Westinghouse Electric Company, Pittsburgh, Pa. 2. How is a lightning arrester coupled to an electric light circuit? A. The mode of connecting the different lightning arresters to the line varies. The particular type you have should have its directions accompanying it, or you should write to the maker of it for instructions. Generally, there are two binding posts for the circuit through it, and one for the ground wire. 3. What is meant by ground line detector lamps, and how are they connected to the dynamo? A. A ground detector lamp is, as its name implies, to show the presence of a ground immediately. They are connected in a variety of ways, depending upon the dynamo and system. In the three-wire direct current system, three lamps may be put in series between the outside wires of the circuit. A wire is put to earth between the first and second of the lamps. If a ground comes on the side of the first lamp, that lamp will light to full brilliancy. If the ground is on the other side, the two lamps there will be brighter, but not lighted fully.

(8009) J. H. S. asks how to construct a water telescope. Reference is made to this instrument in Hopkins' "Experimental Science," 17th edition, page 269. What is the cost of Nicol prisms suitable? Are such telescopes on the market? If so, about what price are they? A. There are two kinds of water telescopes. The one is a watertight tube or box of wood 6 inches or so square, one end of which is open and the other end is a plate of clear glass. This is used in examining the bottom of lakes or in looking down into the water for seeing fish, or anything else. It operates by destroying the ripples which prevent clear vision below when looking upon the surface of water. The glass end of the box is pushed down into the water and the surface of the water in contact with the glass is entirely smooth. Hence one sees clearly objects at a much greater depth than without its aid. In this sense it acts like a telescope, though it has no lens or other magnifying apparatus. The other water telescope is a complete telescope so made that the tube may be entirely filled with water. So far as we know, they are not in the market. They have been used by astronomers for determining certain matters connected with the motion of light. To this a Nicol prism may be attached for ascertaining whether the light is polarized. The Nicol prism in large sizes is very difficult to obtain at present. Small sizes can be purchased from dealers in microscopes or other optical goods.

(8010) G. J. asks the name or names of liquid that boil at 60 degrees, forming steam in the same way that water does at 212 degrees? A. We know of no substance which has its boiling point at 60° Fahr. We give you a few which boil near this temperature: Sulphurous acid, 16°; hydrofluoric acid, 68°; ethylacetylene, 64°; ether, 95°; carbon bisulphide, 117°; chloroform, 142°. The vapors of most of these are violently explosive, and must be handled with the utmost caution in the presence of fire. The vapor of hydrofluoric acid is extremely corrosive and cannot be allowed to escape into the air in the room where any one is; nor can it be held in glass receptacles, since it consumes glass with readiness.

(8011) I. S. W. asks: How can I make a simple sal ammoniac cell? A. A stick of zinc, a plate of carbon, and a saturated solution of sal ammoniac in a glass cell are the materials for a simple cell. The carbon should have many times as much surface as the zinc. The zinc is usually a rod of about $\frac{3}{16}$ inch in diameter.

NEW BOOKS, ETC.

A CATECHISM ON THE COMBUSTION OF COAL AND THE PREVENTION OF SMOKE. By William M. Barr, M.E. New York: Norman W. Henley & Company. 1900. 12mo. Pp. 349. Price \$1.50.

The popular question and answer system has been extended to combustion. The subject is one of prime importance, and while it has been treated before, there is an ample field for the present volume, which is handsomely illustrated and printed. The author deals with his subject in a thoroughly competent manner, and it is a successful contribution to the literature of steam engineering. It should be welcomed by all engineers, firemen, and all those who are interested in fuel economy. With the present high price of coal, the success of the book should be assured.

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