

RECENTLY PATENTED INVENTIONS.

Engineering.

ROTARY ENGINE.—Nicholas J. Verret and Thomas H. Mooney, Pine Bluff, Ark. The engine devised by these inventors is designed to be very effective in operation, utilizing the steam to the fullest advantage, while being of very simple and durable construction. It has an annular cylinder provided with slidable steam-cushioned abutments, an inlet and an exhaust portion opposite the sides of the abutments, and a revolve piston having cam heads extending into the cylinder and adapted to move the abutments outward. There are three heads on the piston, and while one valve delivers steam to act on one head, the steam is acting under expansion on the following head, insuring a continuous rotary movement with full pressure.

Mechanical.

WISE.—William J. Wanless, Bay City, Mich. This vise has, in conjunction with a swivel bottom, a swiveled front jaw, constructed especially to hold either straight or tapered work, and after the jaws have gripped the work both jaws can be revolved, if desired, in a complete circle, or held at any point in a circle that the character of the work may call for. A hollow cylinder passed loosely through the inner jaw of the vise carries the adjustable jaw, which may be moved to any desired angle to the clamping face of the inner jaw, and when the front jaw is loosened for swiveling it is self-adjusting to any conical form of work.

COMPOUND CUTTER AND PLIERS.—Lucien H. Tissot, Montecheroux, France. A tool more especially designed for the use of electricians is provided for by this invention, as it is adapted to cut heavy wires without injuring the cutting edges of the cutters. One jaw has a rigid handle and the other jaw is formed with an extension carrying a pivot on which is fulcrumed the other handle, the latter having a forward extension adapted to bear against the under side of a projection on the rear end of the first jaw. An auxiliary fulcrum is thus formed enabling the operator to cut very heavy wire without exerting high pressure on the handles, and without wobbling the pliers. Messrs. Alfred Field & Company, of No. 93 Chambers Street, New York City, are the agents for the sale of the improved tool.

AUTOMATIC FEEDER FOR CIGARETTE MACHINES.—John O. Eaton, Fall River, Mass. For cigarette machines in which a continuous filler is formed, this inventor has devised an automatic feeder, to cause an even and steady shower or stream of tobacco to be deposited in the feeding mechanism, in sufficient quantity for the filler, thus obviating the feeding by hand as heretofore. The carrier or feeder belt which carries the tobacco from the hopper to the chute leading to the feeding mechanism is provided with curved carding teeth, and means are arranged to prevent the carrier from taking too great an amount of tobacco.

BALING PRESS.—William A. Ross, Hico, Texas. This is a machine for baling cotton and similar fibrous materials cylindrically by winding, a core being dispensed with. An endless apron is arranged to run on three flanged drums or pulleys, one fixed in the frame of the machine and the other two journaled in heads that receive a rotary reciprocating motion, changing their position and slackening the apron to enlarge its loop as required by the growth of the bale. This movement is resisted by other mechanism whose action is automatically regulated to give a gradually increased compression to the bale as it increases in diameter.

Electrical.

TIME CHECK AND RECORDER.—Alexander Davidson, New York City, and Charles G. Armstrong, Chicago, Ill. This is a device designed mainly for use in connection with an electric ticket selling device of the same inventors, whereby reserved seats may be sold at different points without interference, but the invention is also applicable for noting the lack of synchronism in clocks, and other purposes. It comprises a set of annunciators, synchronized clocks, and commutators, with batteries and circuit wires to indicate automatically to a remote station the sale of any ticket at the selling station, also making a record showing the time of sale of every ticket.

AMALGAMATOR.—William Wright, New York City. The body of this amalgamator consists of a box frame supported in inclined position, having at its upper portion a bed of steel with concave pocket and at its lower end a bed of copper with similar pocket, a copper surfaced cylinder revolving in the fret pocket and a steel cylinder in the second pocket. The arrangement constitutes electrodes arranged in pairs, the current being passed through from one bed to the other through the cylinders, and the reversal of the current reversing the action of the machine to effect a release of the material from its receiving surfaces. The copper surface is coated with mercury, to retain any gold coming in contact therewith, and the only chemical necessary is a solution of common salt, which is fed in with the crushed material.

Agricultural.

SEED PLANTING MACHINE.—James C. McCormick, Findlay, Ga. This machine has a motor wheel which operates by chain and sprocket connection a toothed discharge wheel in the hopper, in connection with a grain discharge disk and brush, there being a slidable device connected with a hand lever for elevating the discharge wheel and closing a discharge valve. The machine has a plow or furrow opener, which may also be pushed down into the ground or raised by the adjustment of the lever, the raising of the plow enabling the planter to be readily moved from place to place.

CIDER PRESS.—Gerhard Baumann, Monmouth Junction, N. J. This is a press in which the whole apples may be supplied through a hopper and formed into pomace, which is carried forward between horizontally arranged extractors, consisting of endless traveling bands, between which the pomace is pressed to extract the juice. The apples are ground as they pass through the hopper, and the pomace is distributed by a spreader upon the carrier, the sheet of pomace being

carried beneath a presser where the pressure may be regulated by weights on the levers of the presser rollers. The meshes of the carrier and a band around the presser are cleared of particles of pomace by brushes.

COW MILKING MACHINE.—Modestus J. Cushman, Waterloo, Iowa. This invention is for an improvement in pulsating milking machines, where the air vacuum in the teat cups is made to alternately increase and decrease from a maximum of twelve degrees to a minimum of four degrees of air pressure, it being desirable that the alternating pulsations shall be regular and decided. The invention comprises a combination with differentiated vacuum chambers, a milk receptacle, and air and milk pipes, and a valve mechanism applied to the pipes with means for operating the mechanism whereby the chambers may be alternately put in connection with and cut off from the milk pipe and receptacle.

Miscellaneous.

BICYCLE SADDLE.—William Boulton, Alpena, Mich. The frame of this saddle is formed of a single rod, preferably round in cross section, bent ordinarily to an oval or pear shape, and with downwardly curved coiled front portions, the seat proper being formed of a net-like covering woven around the front and sides of the frame and being such a distance above the coils as to hold the sides out of contact therewith. The straight ends of the rod below the coils form arms by which the saddle may be readily attached to the saddle post.

FLOORING.—William McPherson, Quincy, Cal. For the making of tessellated floors of ornamental blocks practically watertight and arranging and connecting the blocks to prevent warping, this inventor provides the blocks with grooves on all of their edges, the grooves being engaged by long and short tongue strips, while around the outside edge of the design are arranged L-shaped base strips, which also have grooves for the reception of tongue strips engaged by grooves in the blocks, the vertical portion of the base strips engaging with the wall of the room and being adapted to serve as a base board. With this construction the water used for cleaning cannot penetrate between the floor and wall.

ILLUMINATED SIGN.—Charles P. Gates, Brooklyn, N. Y. This is a sign which may be alternately illuminated and darkened, the shutters remaining a short time stationary both at the closed and open position, to heighten the attractiveness of the sign. A series of shutters is pivotally carried on the inside of the casing, a bar being pivotally connected to the shutters and to a pitman connected to a crank shaft, and the casing has orifices which the shutters close and open. A clock-work motor or an electric motor may be used to operate the device, which may be cheaply manufactured and readily set up in front of a store or in a store window.

INKSTAND.—Alexander J. Bluntach, Olivia, Minn. An attachment is provided by this invention whereby the cover of the ink well may be removed during the act of carrying the pen to the well, the cover being automatically replaced as the pen is withdrawn, thus keeping the ink free from dust, etc. A ball pivoted in the stand and rocking over the ink well is connected with the cover by lever arms on which bear springs, to normally hold the ball in position to place the cover on the ink well. As the hand holding the pen is brought down on a cross bar of the lever arms the springs are placed under tension and the cover is removed, to be replaced as the hand is withdrawn.

SIPHON.—James B. Smith and Adolphe L. Julienne, Jackson, Miss. This invention relates to siphons having valves in both legs to retain the liquid and obviate refilling the siphon for every operation. It consists of a frame with a tube guide or support, two tube clamps and compressors and a lever mechanism mounted on the frame and adapted to simultaneously operate the clamps or compressors, which simultaneously close the flow through both legs.

BRIDLE.—Richard W. Evans, Baird, Miss. This is a simple bridle, especially adapted for work harness, and which may be quickly adjusted to the desired size, and made mainly of cotton rope or material always at hand on a plantation. It is made with fittings formed of light castings, all of which may be readily slipped by the fingers to adjust the bridle as desired, no buckles, seams or rivets being required.

BARREL TAP.—Ignatz Wasserstrom, New York City. To facilitate the tapping of barrels containing liquids under high pressure, this inventor has devised a tap in which the pressure will have a tendency to force the valve tightly to its seat, thus preventing any possible leakage when the valve is closed. It comprises a bushing to be engaged in the bung hole, a tapered valve seat having opposite ports at the inner end of the bushing, a tapered valve having ports in its opposite sides, a perforated cap on the inner end of the bushing, and a key for turning the valve.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co. for 10 cents each. Please send name of the patentee, title of invention, and date of this paper.

NEW BOOKS ETC.

The Century Dictionary and Cyclopaedia, published by the Century Company, of New York, was accepted as a very high authority, and became an acknowledged standard, on its first appearance. It was unique in that it combined an unabridged dictionary with a comprehensive but condensed cyclopaedia. In order to extend the sale of this great work, the company is now putting in operation a plan which comprises the offering of prizes for the best answers to three examination papers containing fifty questions each. Sixty-six prizes in all are thus offered, two of them being for \$500 each, and the questions are such as combine pleasure with mental exercise in a most attractive form, certain to be of benefit to all who engage in the competition.

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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, 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.
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.

(7146) C. H. B. writes: I have lately made a dynamo from directions in the SCIENTIFIC AMERICAN SUPPLEMENT, No. 600, following the directions given there, except that I wound six windings on the fields instead of four, (i. e., 12 layers of wire instead of 8), and instead of winding the armature with No. 20 wire, wound the first time around with No. 19 and the second time with No. 18 wire. The machine seems to light up 14 incandescent lamps of 52 volts and 16 candle power each in quite a satisfactory manner. Am I correct in supposing that so long as the same speed is kept up the machine will keep up its voltage, however many lamps may be connected on, and that it will therefore keep on lighting up more and more lamps until so much current will be flowing that the armature will be burned out? If my supposition is correct, how many lights such as I have described ought the machine to carry without danger to the armature? During one of my early trials with the machine, it suddenly commenced sparking, and on examination I found that the wooden sleeve inside the armature had shrunk, thus allowing the iron rings to slip on the sleeve and neighboring coils of wire to get short circuited at the commutator. A few of the windings, as I found on unwinding it, had burned out. I have thoroughly repaired the armature, made it so that the rings cannot slip, and rewound it with well insulated wire. Is there any way in which I can make a cut-out or circuit breaker of some kind which will absolutely protect the armature against burning out again? Is there any number of the SCIENTIFIC AMERICAN or SCIENTIFIC AMERICAN SUPPLEMENT which describes such a device? Will you please tell me the internal resistance and also the amount of current required by a 52 volt 16 candle power Edison lamp? A. If series wound, the E.M.F. at constant speed will tend to increase as more lamps are put on; if shunt wound, the reverse will be the case. There is danger of burning out the armature if too many lamps are run from it. Your armature will carry easily 3 1/2 to 4 amperes—enough for 3 to 4 lamps. You can make or buy a four ampere fusible cut out which will protect your armature. You have tried to make your machine give probably 14 amperes, or over three times its proper current, so it is no wonder that it burned out. The 52 volt 16 candle power lamp needs 1.38 amperes and has 37 ohms resistance.

(7147) J. N. W. asks: 1. What is the amount of current in volts and amperes that run the 641 motor with efficiency? A. It can take four or five amperes at seven or eight volts. 2. How many storage cells with five 6 inch by 5 inch plates would it take to run the above named motor with efficiency? A. The batteries are of rather small plate area. You might place them two in parallel and three in series, a total of six, for the motor. 3. I wish to make a few storage cells, with five 6 inch by 5 inch plates in each; how many positive and how many negative should I have, and what kind of paste should I fill the holes in the plates with? A. It is somewhat difficult to get good results with storage batteries. In our SUPPLEMENT, No. 845, we describe their manufacture; price 10 cents by mail.

(7148) S. W. B. writes: I have a lot of rubber garden hose that is cracking on the outside from exposure to the sun and rain. Can you tell me what to apply to stop it? Also tell me how to make a waterproof paint or coating for the inside of an iron tank to keep from rusting. A. Rubber Hose, etc., to Soften.—1. Dip in petroleum, expose to the air, and repeat the operation if necessary. 2. Ammonia, 2 parts; water, 4 parts. Expose for a few minutes. 3. If very hard, soften with vapor of carbon bisulphide, with the further application of vapor of kerosene. Coat your iron tank with asphaltum varnish to prevent it from rusting.

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MARCH 30, 1897,

AND EACH BEARING THAT DATE.

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