

ENGINEERING INVENTION.

A furnace has been patented by Mr. John H. Weitmyer, of Harrisburg, Pa. The fire back contains an air chamber, from which highly heated air is made to issue into the furnace in small jets, the construction being such that all the air entering the furnace becomes heated from contact with heated surfaces, and is so distributed as to cause most effective combustion and utilization of the heat.

AGRICULTURAL INVENTIONS.

A combined corn and cotton planter has been patented by Mr. William Walker, of Weimar, Texas. It is so constructed that by simply shifting the connection between the corn slide and the crank arm of an agitator, the device may be adjusted to act as a planter of corn or cotton, or, by another simple change, may be made to serve both purposes.

A planter has been patented by Mr. Richard A. Fraser, of Mansfield, La. The machine is short, narrow, and light, can easily be guided close to stumps and other obstructions, and readily handled and adjusted by any person of ordinary intelligence for planting either corn, cotton, or other seeds, in drills or hills, with regularity and without waste of the seeds.

A plow has been patented by Mr. Pinkney H. Lequire, of Greenwood, Ark. It has a curved beam, with handles attached in the usual way, and auxiliary plows connected with the beam by pivoted cross bars, and held in the position of use by slotted pivotal braces, so that it can be used as a light ordinary plow, as a right or left double shovel plow, and as a right or left side harrow or cultivator.

A cotton planter and fertilizer distributor has been patented by Mr. James W. Voltz, of Marion Junction, Ala. It has a supporting frame with hopper, independently moving distributors, and means for operating them, whereby the seed or fertilizer will be distributed with certainty and uniformity, with other novel features, making a machine simple in construction and readily adjusted and controlled.

MISCELLANEOUS INVENTIONS.

A calf weaner has been patented by Mr. Max J. Ahlgrim, of Rose Lawn, Ind. It consists of a half muzzle, formed of wire, pivoted to a halter, and connected by rods to weighted levers pivoted to the sides of the halter, arranged to lift the muzzle when the animal is in position for grazing.

A rod for banners and similar uses has been patented by Mr. Rufus H. Sawyer, of Boston, Mass. It is an ornamental bar, with a cord composed of a metallic and a fibrous strand wound around it, making an improved article for banners and bannerets, and also for lambrequins, lace curtains, etc.

A photo-developing box has been patented by Mr. William H. Lewis, of New York city. The invention consists in hinging the sections of the box together by yielding hinges, to avoid danger of breaking the plate, and to hold films with or without plates, and plates of different thicknesses, together with other novel features.

A packing frame for paper has been patented by Mr. Charles F. Spaulding, of Elizabeth, N. J. It is made of bars with metallic couplings and longitudinal and transverse sockets, which can be packed in small space and readily converted into a knock-down frame for bundles of paper, to prevent the binding cords from marring the edges.

A shirt has been patented by Mr. Ferdinand Jacoby, of New York city. Its body has sleeves provided with re-enforcing pieces formed with straight edges, bound in with the wrist bands, whereby it is intended that the sleeves will be more than doubled in durability, at the wrist bands and to a point above the elbow, with but slight addition to the first cost of the shirt.

A sliding door hanger has been patented by Mr. James Allan, of New York city. Combined with the door and a casing having guideways are hanging bars pivoted together at about their centers, with other novel features, whereby such doors are so supported that they can be opened and closed without coming in contact with the floor or the carpet, which can be continued through the doorway.

A button hole marker has been patented by Anna Huffer, of Cowden, Ill. It is a device of simple construction, having a scale, regularly spaced slots, a guide plate, etc., whereby button holes can be expeditiously cut or marked without raising the marker from the goods, and all be same distance from the edge of the cloth, the same distance apart, and of the same length.

A veterinary operating table has been patented by Mr. Mathew L. Faling, of Tonawanda, N. Y. Combined with a main supporting frame having racks is a table leaf with toothed quadrants engaging with the racks, and an operating mechanism, whereby the throwing or casting of a horse with a side line previous to a surgical operation may be avoided, and the horse can be handled without danger to the operator.

A cigarette machine has been patented by Mr. Ambrosio de Zayas y Moreno, of Matanzas, Cuba. The tobacco is placed in a hopper, from which it passes to a distributing and other screws, and is discharged in a packed form into the wrapper and the operation completed, the invention covering numerous novel details and combinations of parts in a machine designed to be simple and effective for producing perfect cigarettes.

A street car heater has been patented by Mr. Theodore Wiseman, of Lawrence, Kansas. The heaters consist of a cast iron arch, the ends of which are closed by rectangular front and rear castings, which serve as supports for the grate and for the ash pan, which is suspended beneath the grate, the whole being under the platforms of the car, there being a smoke outlet, distributing chamber, separate register pipes, and various other novel features.

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The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

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Notes & Queries

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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.

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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.

(1) P. H. asks: What is the best method and simplest for putting ebonized finish on small work-table? A. The stain is produced by successive applications of a decoction of logwood, followed by one of copperas; the article is then French-polished and rubbed up with oil and spirit.

(2) W. R. X. asks for a solution for waterproofing canvas horse and wagon covers that will be flexible. A. Take boiled oil fifteen pounds, beeswax one pound, ground litharge thirteen pounds; mix and apply with a brush to the article, previously stretched against a wall or a table, washing and drying each article well before applying the composition.

(3) T. L.—We do not know of any record of the first use of barrels. Their sizes were regulated by law in England over 200 years ago.

(4) H. W. L. asks the proper construction of condensers such as are used in telegraph lines. A. Use ordinary tin foil, with ordinary tissue paper between the sheets, the whole immersed in ordinary white melted paraffin, and then withdrawn. Each second sheet of tin foil is connected to one terminal, and the remaining sheets to the other.

(5) Ph. D. asks how to make gum tolu, ready for chewing. A. Take of balsam tolu 4 parts and of gum benzoin, white wax, paraffine, and powdered sugar, one part each. Melt together, mix well, and roll into sticks.

(6) J. S. McG. asks how it is that in numerous places along the Atlantic coast, a driven well, right through the salt water, will obtain pure, fresh water a few feet beneath. A. Because the Tertiary strata along the Atlantic coast from New York to Georgia slant toward and extend under the Atlantic. The subsoil water drains toward the sea, and finally issues as fresh water springs along the shore in the marshes and at the bottom of the ocean off shore. Thus artesian wells may be sunk in the sea bottom off the coast of New Jersey and fresh water obtained at the surface.

(7) F. P. L. asks: 1. Of what materials is the composition composed on picture mouldings? In what proportions are they mixed? How are they moulded in shape? How is the white grounding composition mixed and applied? A. Dissolve 1 pound of glue in 1 gallon of water. In another vessel boil together 2 pounds of resin, 1 gill Venice turpentine, and 1 pint linseed oil; mix and boil together until water has disappeared, when add finely powdered whiting until mass is of consistency of putty. This is hard when cold and soft when hot. It can be moulded in plaster of Paris or glue moulds. The white base seems to be mason's hard finish. It would be advisable to drive brads or tacks where the high parts come to be bedded in the composition, and hold it in place.

(8) J. D. asks: 1. In making the dynamo described in SUPPLEMENT, No. 161, with 12 and 14 instead of 16 and 18 wire, should it have 7 layers on the electro magnet the same? A. In general terms, it should, but we recommend exact adherence to the gauge given in our article. 2. I am making one, once and a half as high, once and a half as wide, using 9 and 11 wire; and one twice as high and twice as wide, and using 6 and 8 wire, for plating purposes. Is this the right size of wire to use? A. Your sizes of wire for the large ones will probably work, but how well we cannot say. 3. I want an apparatus for measuring currents like the one described in SCIENTIFIC AMERICAN, November 21, 1885, page 225, for the above machines. What thickness of wire would I want, and what length and width of tube, and what would be best to make the float and float rod from? A. The thickness of wire depends on the use it is to be put to. For an amperemeter it should be very heavy, for a voltmeter very fine. Make the core float of German silver or brass. 4. Would this apparatus effect the current much if constantly attached to a dynamo? A. It would not affect the current to any extent.

(9) T. H. H. asks: 1. How can I make a telegraph sounder so that the upward and downward stroke of the armature will be increased to double its present force? A. The power of stroke of a sounder is due to the size of magnet and coils and battery power. In general terms, you may increase its power by enlarging its core and armature and using larger wire, so as to secure the same number of turns in each bobbin. 2. If a single sounder will lift one pound (if attached to armature), will there be any increase in power, if the same battery is used, if another sounder was put in circuit, or would each lift only eight ounces? A. Two sounders would lift much more than one; under some conditions, nearly double with the same battery. 3. State the best practical method of collecting atmospheric electricity, aside from the lightning rod. A. For collection of atmospheric electricity, probably the rod is as good as any device. The ordinary static electric machine can hardly be said to collect electricity from the atmosphere.

TO INVENTORS.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

November 30, 1886,

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 'Adding machine, Lewis & Guarrant', 'Air brake, automatic compressed, A. S. Goode', 'Alarm. See Boiler water alarm. Burglar alarm', etc.