No. 691,430. Patented Jan. 21, 1902.

G. W. ZODER & W. P. HAYNE.

PRESS FOR OLEAGINOUS SUBSTANCES.

(Application filed May 21, 1901.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1

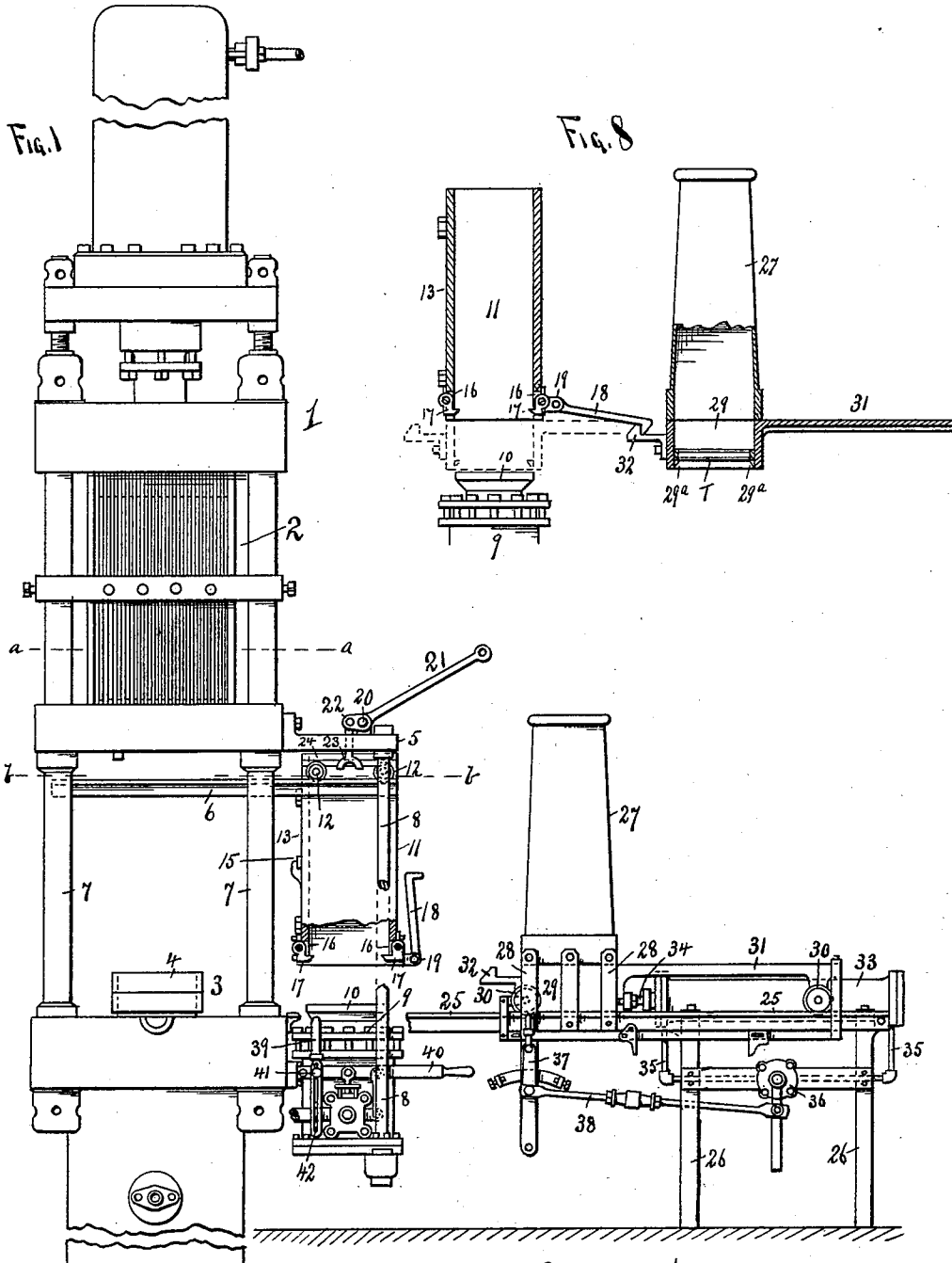


Fig. 8

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Fig. 2

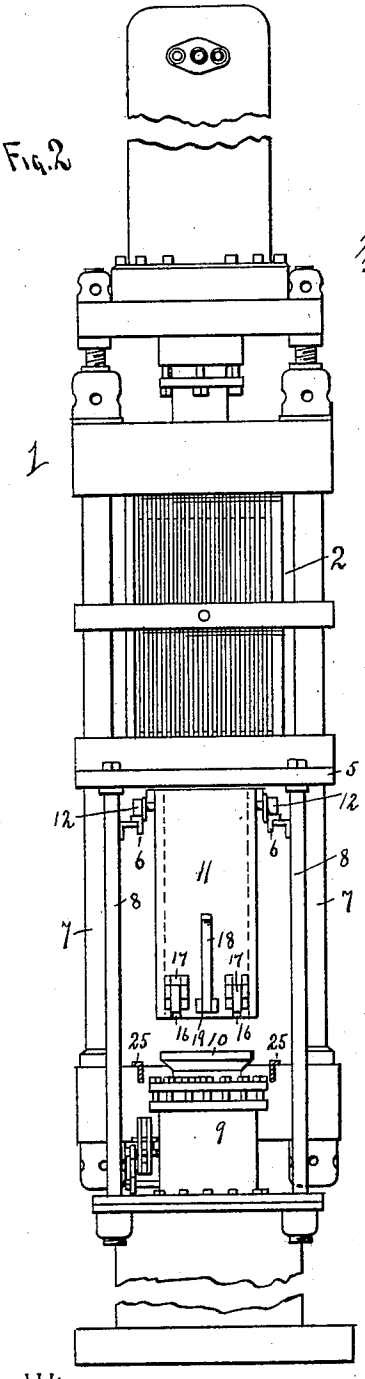


Fig. 3

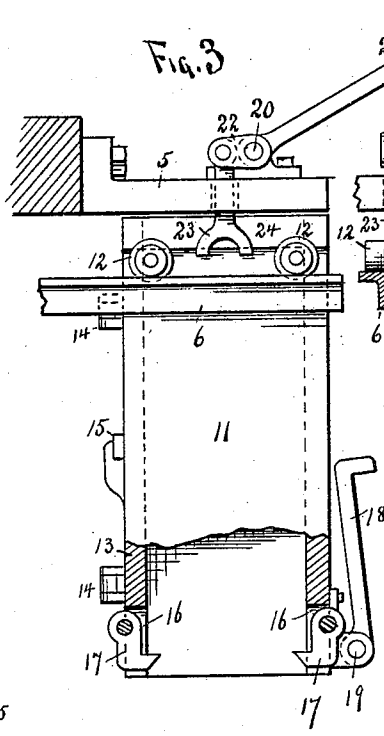
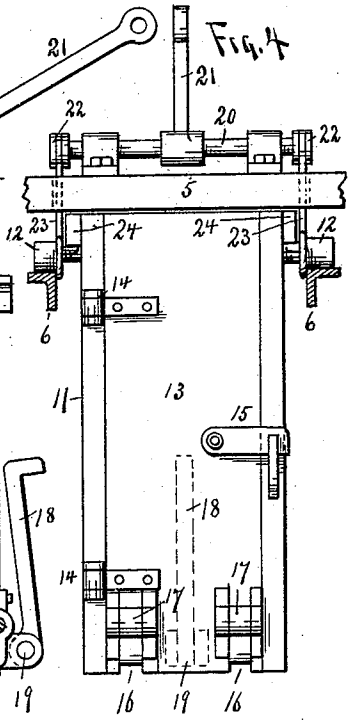


Fig. 4



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Fig. 5

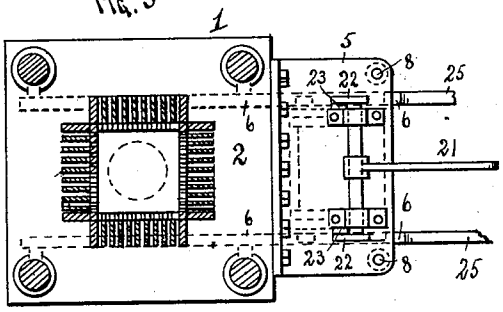


Fig. 6

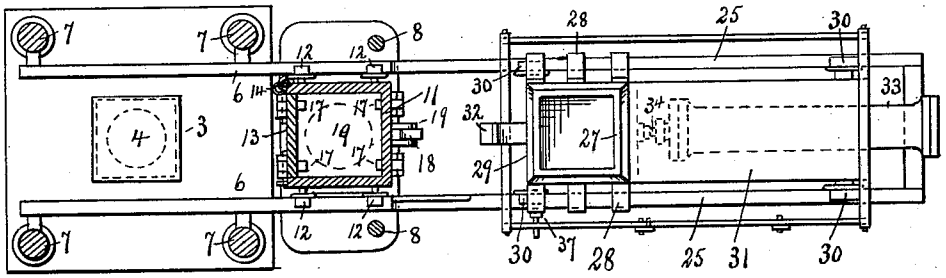
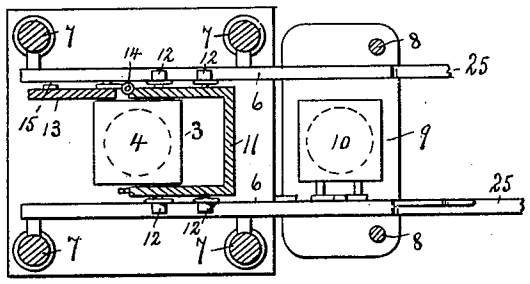


Fig. 7



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UNITED STATES PATENT OFFICE.

GEORGE WILLIAM ZODER AND WILLIAM P. HAYNE, OF BOYCE, LOUISIANA.

PRESS FOR OLEAGINOUS SUBSTANCES.

SPECIFICATION forming part of Letters Patent No. 691,430, dated January 21, 1902.

Application filed May 21, 1901. Serial No. 61,257. (No model.)

To all whom it may concern:

Be it known that we, GEORGE WILLIAM ZODER and WILLIAM P. HAYNE, citizens of the United States, residing at Boyce, in the parish of Rapides and State of Louisiana, have invented a new and useful Press for Oleaginous Substances, of which the following is a specification.

Our invention is an improved press designed particularly for expressing oil from cotton-seed meal and similar substances; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

Our present invention is an improvement on the press described and claimed in Letters Patent of the United States No. 649,503, which were granted to us May 15, 1900; and the object of our present improvements is to provide means for charging the press-box and for preparing a charge to be subsequently compressed in the press-box while the charge in the press-box is undergoing compression, thereby facilitating the operation of the press and increasing the output thereof by enabling one charge to be prepared for introduction to the press-box while the charge therein is being compressed.

In the accompanying drawings, Figure 1 is a side elevation of our improved press. Fig. 2 is an elevation of the same at right angles to Fig. 1. Fig. 3 is a detail elevation, partly in section, of the charging-box and the supporting-runway therefor. Fig. 4 is a similar view of the same at right angles to Fig. 3. Fig. 5 is a horizontal sectional view taken on a plane indicated by the line *a a* of Fig. 1. Fig. 6 is partly a top plan view and partly a horizontal section taken on a plane indicated by the line *b b* of Fig. 1. Fig. 7 is a horizontal sectional view through the charging-box, showing the hinged front side thereof open and showing the charging-box in a position assumed thereby when being run onto or from the follower of the ram. Fig. 8 is partly an elevation and partly a section taken through the hopper, measuring-box, and charging-box.

The press 1 is of the construction shown and described in our Letters Patent hereinbefore mentioned, and the press-box 2 thereof is open at its lower end and is fed from below by a ram 3, which may be either of the construction shown and described in the aforesaid Letters Patent or of any other suitable construction, the follower 4 of the ram being movable vertically and disposed directly under the press-box. A pressure mechanism A is disposed above the press-box and has a follower which operates in the press-box, as set forth in our Letters Patent aforesaid. The sides of the press-box are composed of vertical bars, as here shown, and are lined on their inner sides with perforated metallic plates, as in our aforesaid Letters Patent.

A horizontally-disposed bracket 5 is bolted to and projects from one side of the base of the press-box. A pair of supporting-trackways 6 are secured to the columns 7, which support the press-box, extend under opposite sides of the latter, and extend outward under the bracket 5. Columns 8 depend from the outer side of said bracket and partially support a ram 9, which is also supported by being bolted to one side of the ram 3. The said ram 9 has on its upper side a vertically-movable follower 10.

A charging-box 11 of suitable dimensions and which is open at its upper and lower ends and conforms in cross-section in size and shape to the cross-section of the press-box is provided near its upper end on opposite sides with supporting-rollers 12, which run on the track-rails 6, and thereby the said charging-box is adapted to be run under the press-box and disposed in vertical alinement therewith and over the ram-follower 4. The said charging-box has the side 13 hinged, as at 14, whereby the hinged side 13 may be opened to adapt the charging-box to be run onto the follower 4, as shown in Fig. 7. When the said side 13 is closed, the same may be secured and locked in a closed position by a bar 15 or other suitable device. In opposite sides of the charging-box, at the lower end thereof, are vertical slots or openings 16, in which are detent-pawls 17. On one side of the charging-box is a coupling-hook 18, which is hinged thereto, as at 19. A rock-shaft 20 has its bearings on the upper side of the bracket 5. Said rock-shaft may be moved by a lever 21, and is provided at its ends with rock-arms 22, from which depend clamps 23, which are adapted to engage ledges or flanges 24 on the sides of the charg-

ing-box 11, at the upper end thereof. By depressing the lever 21 the said clamps may be caused to engage said flanges 24 when the charging-box is run outward from under the press-box in the position shown in Figs. 1 and 3 and directly over the follower 10 of the ram 9 to lock the said charging-box in the said position.

A pair of trackways 25 extend from the upper portion of the ram 3 and over the ram 9 and on opposite sides of the follower 10 thereof, the said trackways being of suitable length and their outer ends being supported by any suitable means, a frame 26 being here shown for that purpose. A hopper 27, which is vertically disposed and open at its upper and lower ends, is supported at a suitable distance above the trackways 25 by vertically-disposed bars, as at 28, or by any other suitable means. A measuring-box 29, the cross-section or plan of which corresponds to that of the charging-box 11 and the interior diameter of which conforms in size and shape to that of the press-box 2, is supported on the trackways 25 by rollers 30, and the said measuring-box has a cut-off apron 31, which extends from the outer side thereof and is adapted to run under and form the bottom of the hopper 27 when the measuring-box is run from the position under the hopper shown in Fig. 1 to a corresponding position under the charging-box and upon and over the follower 10 of the ram 9. A coupling-hook 32 is carried by the said charging-box, which coupling-hook is adapted to be engaged by the coupling-hook 18 to connect the charging-box 11 to a measuring-box 29 to enable the latter when the same is drawn to the position shown in Fig. 1 under the hopper 27 to draw the charging-box 11 therewith to the position shown in the said figure over the follower 10 of the ram 9. Said measuring-box is provided on its inner sides with brackets 29^a to support a division-plate, as hereinafter described. We employ a suitable fluid-pressure mechanism to operate the measuring-box 29. In the embodiment of our invention here shown the cylinder 33 of the fluid-pressure mechanism is horizontally disposed and mounted on the frame 26, and the piston-rod 34 thereof is connected to the measuring-box 29. The said cylinder 33 may be supplied at either end thereof with fluid under pressure through the pipes 35. A suitable valve (indicated at 36) is provided to regulate the flow of fluid through the said pipes, and said valve is operated by a suitable hand-lever 37, to which it is connected by a rod 38.

The vertical movement of the follower 10 of ram 9 in an upward direction is limited by a slotted link 39. The lever 40, by which the said ram or fluid-pressure mechanism 9 is operated, is connected to the said slotted link by a pin or bolt 41, which operates in the slot 42 thereof.

The operation of our invention is as follows: Initially a partition or division plate T, such as is shown and described in the Letters Patent hereinbefore mentioned, is placed in the measuring-box 29, on the brackets or supports 29^a thereof, and the measuring-box is then run under the hopper 27. Sufficient heated oleaginous substance from which the oil is to be expressed and which is contained in the hopper passes into the said measuring-box to fill the latter when the same is thus run under the hopper. The measuring-box, with the filled section therein, is then by the fluid-pressure mechanism hereinbefore described moved to a position under the charging-box 11 and over the follower 10 of the ram 9, the said follower having been previously lowered sufficiently for this purpose. It will be understood that when the measuring-box is thus run outward from under the hopper 27 the cut-off apron 21 thereof forms the bottom of the said hopper. The section in the measuring-box, together with the substance with which the same is filled, is then by the action of the follower 10, the ram 9 being operated for this purpose, moved upward in the charging-box 11, through the open lower end thereof, and as the said section passes the pawls 17 the latter engage the lower side of the said section, and thus support the same in the lower portion of the said charging-box. The follower 10 is then lowered and the operation hereinbefore described repeated, thus causing another filled section to be placed in the charging-box through the open lower end thereof, each section as the same is introduced in the charging-box raising the sections which have preceded it until the charging-box is full. The charging-box is then run under the press-box and over the follower 4 of the ram 3, whereupon said ram is placed in operation and the follower 4 is caused to move upward in and through the charging-box, thereby forcing the charge therein into the press-box 2 through the lower open end of the latter. The follower 4 is maintained in this elevated position, the door 13 is opened, the charging-box coupled to the measuring-box by the coupling-hooks 18 32, and the said charging-box then drawn by the measuring-box to the initial position shown in Fig. 1, when it is uncoupled from the measuring-box, the door 13 thereof closed and fastened, and the operation before described repeated. It will be understood that while the charging-box is being charged by the measuring-box and the ram 9 the charge in the press-box is being subjected to pressure between the follower 4 and the follower of the pressure mechanism A, and as it takes some time to express the oil this time is utilized in preparing a subsequent charge for the press-box. Hence the press may be kept almost continuously in operation, and consequently the output thereof is greatly increased.

Having thus described our invention, we claim—

1. The combination of a press-box, a charging-box movable to and from the same, so

that said charging-box may be disposed in line with an opening in said press-box, a follower adapted to be run through said charging-box toward said press-box, when said charging-box is thus disposed, to force a charge from said charging-box into said press-box, a hopper, and means to convey material therefrom to said charging-box, when the latter is out of line with the opening in said press-box, substantially as described.

2. The combination of a press-box, a charging-box movable to and from the same, so that said charging-box may be disposed in line with an opening in said press-box, a follower adapted to be run through said charging-box toward said press-box, when said charging-box is thus disposed to force a charge from said charging-box into said press-box, a hopper, a measuring-box adapted to be charged from said hopper, means to run said measuring-box from said hopper to a position in line with an opening in said charging-box, and a pressure mechanism having a follower adapted to move the charge from said measuring-box to said charging-box, substantially as described.

3. The combination of a press-box, a charging-box movable to and from the same, so that said charging-box may be disposed in line with an opening in said press-box, a follower adapted to be run through said charging-box toward said press-box, when said charging-box is thus disposed, to force a charge from said charging-box into said press-box, a hopper, a measuring-box adapted to be charged from said hopper, means to run said measuring-box from said hopper to a position in line with an opening in said charging-box, a pressure mechanism having a follower adapted to move the charge from said measuring-box to said charging-box, and means to connect said measuring-box to said charging-box, to move the latter from said press-box, substantially as described.

4. The combination of a press-box, a charging-box adapted to be run to and from said press-box, and disposed in line with an opening in the latter, and a pressure mechanism having a follower adapted to be run through said charging-box toward said press-box, when said charging-box is thus disposed, and said charging-box having one of its sides adapted to be opened and closed, and being thereby adapted to clear said follower and run outward from said press-box, a hopper, and means to convey material therefrom to said charging-box, substantially as described.

5. The combination of a press-box, a traveling charging-box, for the purpose set forth, a pressure mechanism having a follower adapted to be run through said charging-box, toward said press-box, a hopper, a traveling measuring-box adapted to be alternately disposed in line with said hopper and said charging-box to convey material from said hopper to said charging-box, when the latter is run out from said press-box, and a pressure mechanism having a follower adapted to run through said measuring-box to said charging-box, for the purpose set forth, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

GEORGE WILLIAM ZODER.
WILLIAM P. HAYNE.

Witnesses:
W. F. TEXADA,
J. B. DYER.