





No. 632,158.

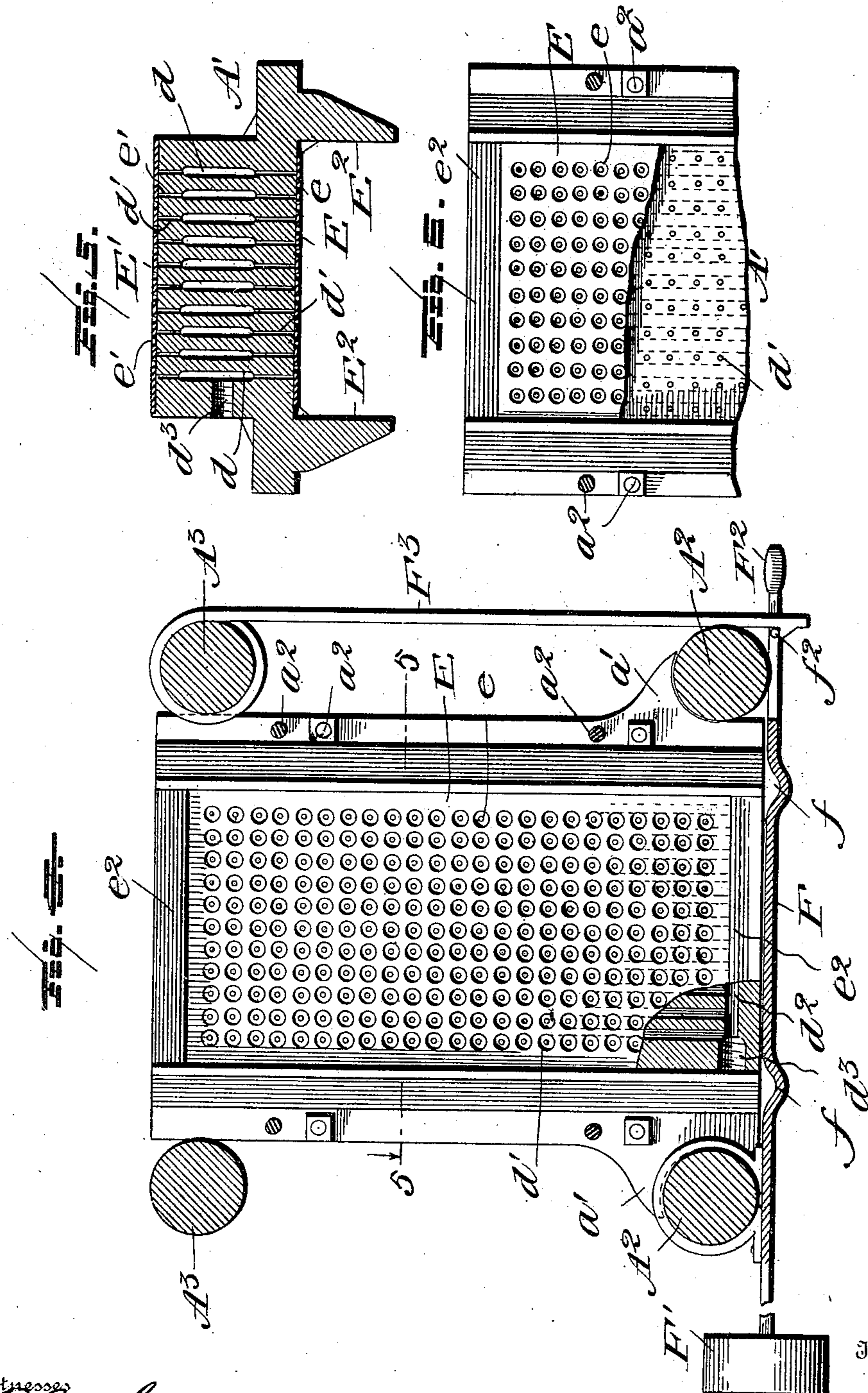
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C. E. SNYPP.  
PRESS FOR EXTRACTING OIL, &c.

(Application filed May 26, 1899.)

(No Model.)

3 Sheets—Sheet 3.



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# UNITED STATES PATENT OFFICE.

CHARLES E. SNYPP, OF GRETNA, LOUISIANA.

## PRESS FOR EXTRACTING OIL, &c.

SPECIFICATION forming part of Letters Patent No. 632,158, dated August 29, 1899.

Application filed May 26, 1899. Serial No. 718,418. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. SNYPP, a citizen of the United States, residing at Gretna, in the parish of Jefferson and State of Louisiana, have invented certain new and useful Improvements in Presses for Extracting Oil or other Liquids; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in horizontal presses particularly for use in expressing oil from cotton-seed meal and forming the meal from which the oil has been expressed into cakes, which have a commercial value, as well as the oil.

My invention will be understood by reference to the accompanying drawings, wherein the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a side elevation of my press, partly in section. Fig. 2 represents a top plan view of the same, the feeding mechanism being omitted. Fig. 3 is a section taken on the line 3 3 in Fig. 2 and looking in the direction of the arrows. Fig. 4 is a vertical section taken on the line 4 4 in Fig. 2 and looking in the direction of the arrows, the view also being partially broken away, showing the interior of the press-plate. Fig. 5 is a section taken on the line 5 5 in Fig. 4 and looking in the direction of the arrows; and Fig. 6 is an elevation of the press-plate, showing the face thereof as broken away to reveal the contracted openings in the backing.

The press comprises a horizontal set of adjacent press-boxes A, located between a series of plates, the latter being carried in frames A', having supports  $a'$ , which are mounted upon and also slide along the horizontal stays  $A^2$ . The pair of horizontal stays  $A^2$  and the similar pair of upper stays  $A^3$  are secured at their ends in cross-heads  $A^4$  and  $A^5$ , constituting the rigid frame of the press. The frames carrying the press-plates are connected together by means of rods  $a^2$ , over which the said frames also slide as the presses telescope together. The last press-frame (seen to the right in Figs. 1 and 2) remains stationary at all times and is secured in position by any suitable means, while the remaining press-

frames may move more or less with respect to each other, according to their location. The first press-frame, as seen most clearly in Fig. 3, has connected thereto a piston B, which works in a cylinder B', connected to the cross-head  $A^5$ . This cylinder is provided with a steam-inlet pipe  $b$  for the admission of steam or other fluid under pressure for forcing the press-frames together. To the first press-frame, as seen in Figs. 1 and 2, is connected a pair of rods C, which rods are connected at their rear ends to a cross-head C', and to the said cross-head C' is connected a piston C<sup>2</sup>, which works in a pressure-cylinder C<sup>3</sup>. The piston C<sup>2</sup> and its connections with the first press-frame serve to draw the series of frames apart after the operation of pressing has been completed and when it is desired to remove the cakes formed in the press-boxes. The cylinder C<sup>3</sup> is provided with steam or other fluid inlet pipe  $c^3$  for giving the necessary pressure, which pressure, it is obvious, need not be nearly so great as that required in the pressing operation.

The rearward movement of the piston C<sup>2</sup> is limited by means of the plurality of bolts  $c^2$ , which engage in flanges C<sup>4</sup> and C<sup>5</sup> on the said piston and on the cylinder, respectively, the movement allowed, however, being sufficiently great to draw the press-frames away from each other to the full limit permitted by their connecting-bolts  $a^2$ , as hereinbefore described.

The press-plates are of the form and construction shown and described in my pending application serially numbered 707,793 and filed March 4, 1899, and consist of a backing D, provided with grooves or slots  $d$ , located in the central portion of the backing, as seen most clearly in Fig. 5, and with holes  $d'$  running from the front and rear surfaces of the backing to the central grooves or slots  $d$ . Fitting over the front and rear faces of the backing are plates E and E', which are in contact with the said backing and are provided with holes  $e$  and  $e'$ , shaped in the form of truncated cones, with their apexes next the backing. These holes or perforations  $e$  and  $e'$ , however, are not arranged over the perforations  $d'$  in the backing, which is an important point in the construction of my press-plate. The plates E and E' are preferably

fastened to the backing to retain them in position; but this is not necessary, and they may be held in place in any preferred way.

At the bottom of each of the backings D is formed a transverse channel  $d^2$ , with which the slots or grooves  $d$  communicate and into which the oil passes from the said slots or grooves  $d$ . The channels  $d^2$  are provided with an outlet connection  $d^3$ , with which may be engaged a flexible pipe for drawing off the oil to a tank or other point of collection. (Not shown.)

Upon one side of each of the press-frames are formed vertical flanges  $E^2$ , between which the plunger side of the adjacent plate closely fits, the width of the flanges being so great that the plunger-face of the telescoping adjacent plate is never quite wholly drawn therefrom, so that the sides of the press-boxes are at all times closed and the material being pressed is effectually retained in the press-boxes. At the upper and lower ends, respectively, of the press-plates and upon both faces of the frames are provided moldings or inclined ribs, as seen at  $e^2$ , which when the faces of the adjacent plates are brought together upon the mass of material within the box impinge upon the upper and lower edges of the mass and prevent the extrusion of the material at these points, creating crimped edges upon the pressed cake.

F represents a door pivoted upon one of the horizontal rods  $A^2$ , so as to form a bottom for the press-box when in its horizontal position, as shown in Fig. 4. This door is made perfectly continuous throughout the system of boxes and is provided with a plurality of counterweights  $F'$ , which serve to render more easy the closing of the door. The swinging side of the door is provided with handles  $F^2$ , and spring-catches  $F^3$  are arranged to engage the said handles  $F^2$  or studs  $f^2$  thereon, as seen in Fig. 4, for the purpose of retaining the door in its closed position. The said door is provided with depressions or channels  $f$  beneath the edges of the press-boxes for the reception of the oil and through which the oil may be conducted to any suitable outlet. The said door serves to retain the cotton-seed meal or other material to be pressed within the press-boxes prior to the pressing operation; but after the pressing has been effected the catches may be detached from the door and the latter swung downward, so that when the press-frames are drawn apart the cakes may fall out.

H represents a cylinder within which runs a spiral conveyer  $H'$  for feeding the meal or other material to be pressed to the press-boxes. The bottom of this cylinder is provided with an opening the length of the series of press-boxes, and in this opening is mounted a sliding bottom or plate  $H^2$ , having a small opening  $h^2$  at one end thereof of the width approximately of press-boxes when the latter are open. At the extreme end of this sliding plate is rigidly mounted a downwardly-ex-

tending and inclined plate or chute  $h^3$  for the purpose of directing the material as it falls through the opening  $h^2$  in the sliding plate  $H^2$  under the action of the spiral conveyer  $H'$  to any one of the press-boxes.

The operation of this feeding device is as follows: The meal enters one end of the cylinder  $H'$  from any suitable source of supply, (not shown,) and the conveyer being rotated by any suitable means (not shown) the plate  $H^2$  is moved to bring the opening  $h^2$  therein over one end box of the series of press-boxes and held in this position until this box is filled, when it is drawn along to the next box, and so on through the series, the boxes being thus filled in succession, after which the conveyer may be stopped. The press-boxes being all filled, pressure is admitted to the cylinder  $B'$ , which, acting on the piston B, forces the press-frames together, as hereinbefore described, and the pressing operation, during which the oil is expressed from the meal in the press-boxes, takes place. The pressure in the cylinder  $B'$  is now released and pressure is turned into the cylinder  $C^3$ , which pressure acting upon the piston  $C^2$ , carrying the cross-head  $C'$  and rods C, connected to the first press-frame, draws the said frames apart, leaving the cakes free from the press-plates in the press-boxes. If the door F be now released and dropped, the cakes will fall out through the bottoms of the press-boxes into a suitable receptacle. Upon the door being returned to its closed position again the operation of filling and pressing may be repeated.

In operation it may be found that the press-plates E impinge so closely upon the backing as to retard to an undesirable degree the passage of the oil or other liquid or that the oil may partially solidify, and thus seriously retard the operation of the press, and in such case I propose to use a sheet of haircloth or other similar fabric interposed between the plate E and the backing, which will prevent the plate E lying too closely to the backing, while at the same time permitting of a perfect straining effect.

Before starting the press it may be desired to clean or heat the press-plates and the channels therethrough, and this may be done by connecting the pipes attached to the discharge-openings  $d^3$  with a steam-supply, and thus steam may be admitted to the channels  $d$  and  $d'$  in the backing D and caused to escape under restriction through the face-plates E and  $E'$ , by which operation a thorough cleaning and heating may be effected.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a press for expressing oil or other liquids from substances containing the same, and which is arranged to work horizontally, the combination of a framing, a number of press-frames telescopically mounted in said framing and having at their upper and lower edges, beveled ribs extending into the press-boxes

and oppositely disposed therein; a door hinged to one side of the press-frames and arranged to cover the lower ends of the press-boxes, counterweights upon the said door and catches 5 for retaining the said door in its closed position, substantially as described.

2. In a press for expressing oil or other liquids from substances containing the same, and which is arranged to work horizontally, the 10 combination of a framing, a number of press-frames telescopically mounted in said framing and joined loosely together, said frames having at their upper and lower edges, beveled ribs extending into the press-boxes and oppositely disposed therein for confining the edges 15 of the material; a door hinged to one side of the press-frames and arranged to cover the lower ends of the press-boxes, said door being provided with liquid-channels for guiding the 20 liquid from the lower ends of the press-boxes, and a catch for engaging the door in its closed position, substantially as described.

3. In a press which is arranged to work horizontally, the combination with a series of 25 press-boxes, of means for feeding the material to be pressed, into said boxes, consisting of a hollow casing mounted horizontally above the said press-boxes and having an elongated opening through its bottom, a movable bottom 30 mounted in said opening and provided

with a reduced opening for allowing the discharge of material from the said casing, a chute depending from said movable bottom for directing the material to a single one of the press-boxes at a time, and a conveyer 35 mounted in the said casing, substantially as described.

4. In a press for expressing oil or other liquids from substances containing the same, and which is arranged to work horizontally, the 40 combination with a series of press-boxes telescopically arranged; of means for feeding the material to be pressed into said boxes, consisting of a hollow casing mounted horizontally above the said press-boxes and having 45 an elongated opening through its bottom, a movable bottom mounted in said opening and provided with a reduced opening for allowing the discharge of material from the said casing, a chute depending from said movable bottom 50 for directing the material to a single one of the press-boxes at a time, and a spiral conveyer mounted in the said casing, substantially as described.

In testimony whereof I affix my signature 55 in presence of two witnesses.

CHARLES E. SNYPP.

Witnesses:

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