

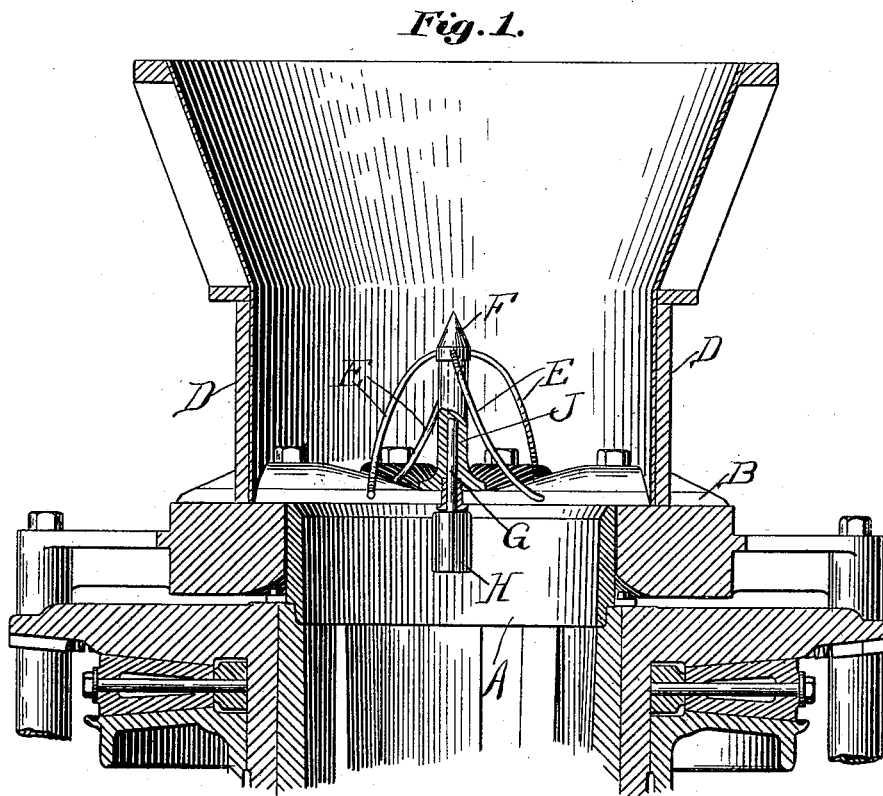
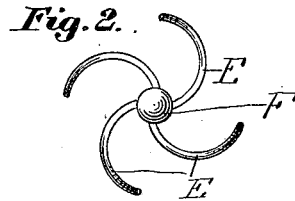
No. 645,730.

Patented Mar. 20, 1900.

G. A. LOWRY.  
FEEDING DEVICE FOR PRESSES.

(Application filed Sept. 1, 1899.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## FEEDING DEVICE FOR PRESSES.

SPECIFICATION forming part of Letters Patent No. 645,730, dated March 20, 1900.

Application filed September 1, 1899. Serial No. 729,245. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. LOWRY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Feeding Device for Presses, of which the following is a specification.

This invention relates to a feeding device for presses, and is designed as a specific construction embraced in and covered by the generic invention and claims of my application for patent for feeding devices for presses, executed by me on the 27th day of May, 1899, filed May 29, 1899, Serial No. 718,647.

The object of the invention is to provide means for efficiently presenting the material into proximity to the slots in the head-plate and to prevent the same from arching or bridging across the slots, thus providing for the efficient feed of the material to the press.

The invention consists, substantially, in the construction, combination, location, and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally set forth in the appended claims.

Referring to the accompanying drawings, Figure 1 is a broken view, in longitudinal central section, of a press, showing the application thereto of a construction embodying the principles of my invention. Fig. 2 is a detail view in plan of the feeding device embodying the invention.

In the drawings reference-sign A designates a chamber or holder in which the material is compressed, and B a slotted head-plate therefor. These parts are suitably supported and mounted for relative rotation. For instance and in the form shown, to which, however, the invention is not limited or restricted, the head-plate is held stationary, while the chamber is mounted to revolve. Rotation may be imparted to the rotating part in any suitable or convenient manner. The chamber or holder A is open at both ends and, if desired, may be tapering in internal diameter. The head-plate is arranged over the larger end of the chamber or holder.

In the operation of a press embodying the features above noted a sufficient amount of material is preliminarily placed in the cham-

ber to fill the same to a point such as to cause such material to exert some pressure against the under surface of the head-plate. Now by imparting a relative rotation to the chamber and head-plate the material thus preliminarily introduced to the chamber and which moves in contact with the under surface of the head-plate effects a drawing action across the slot or slots in the head-plate as it moves across them. Therefore if additional material is presented to the slot or slots and in such close proximity thereto as to be brought into contact with the surface of the mass of material in the chamber or holders such additional material, the fibers of which are already more or less entangled or interlaced with each other, is caught or engaged by the material in the chamber and is thereby drawn through the slot or slots into the chamber and between the surface of the mass in the chamber and the inner surface of the head-plate, thus building up the bale in superposed flattened and condensed spiral layers or convolutions, each succeeding layer being compressed upon the preceding layers and adding, to the extent thereof, an increment to the compressed mass in the chamber. In practice the feed slot or slots in the head-plate do not extend quite to the center of such head-plate, and consequently in the building up of the compressed mass of material in the chamber in the manner above set forth a longitudinal opening or hole is formed centrally of the compressed column. Thus the material is compressed and correspondingly advanced through the chamber by each spiral layer added as an increment thereto, such material finally emerging from the chamber in the form of a condensed highly-compressed column having an opening through the longitudinal center thereof, the chamber forming a holder for the compressed mass and the head-plate forming an abutment against which the end of the compressed mass bears.

The construction and operation so far described embodies in its generic principles the features set forth and claimed, broadly, in my Patents Nos. 581,600 and 581,601, dated April 27, 1897, and in my Patent No. 630,369, dated August 8, 1899.

The material to be compressed may be delivered to the head-plate in any suitable or convenient manner. In the form shown, to which, however, the invention is not limited or restricted, a basket or receptacle D is arranged over the head-plate, and into this basket or receptacle the material to be compressed is delivered, and from which it is drawn into the chamber in the manner above described. It sometimes happens, where the material is light and fluffy, as in the case of cotton, wool, and the like, and is supplied in large quantity to the head-plate, that such material arches or bridges across the slot or slots in the head-plate. This is particularly true where in order to secure the desired rigidity in the construction of that portion of the head-plate which overhangs the open end of the chamber, to enable it to withstand the pressure against the inner surface thereof to which it is subjected, the head plate is so constructed as to leave a considerable ridge or elevation in the surface thereof between adjacent slots, the surface of which ridges or elevations slopes or tapers toward the edges or lips of the slot. This bridging or arching of the material also occurs sometimes in the basket or receptacle before the material reaches the head-plate. This is objectionable, for the reason that the material is thereby prevented from coming into sufficiently-close proximity to the slot or slots in the head-plate to enable it to contact with the surface of the mass in the chamber. It is the purpose of the present invention to provide means for preventing or breaking up these arches or bridges and for forcing or pushing the material into sufficiently-close proximity to the slots to enable it to be caught or engaged by the material in the chamber, and thereby drawn into the chamber. The purposes in view are accomplished in the present case by means of a series of arms or fingers E, carried by or connected to a cap F, mounted upon the end of a spindle G, suitably journaled in the center of the head-plate B. The spindle G is arranged longitudinally of the press chamber or holder and extends through the head-plate, and at its inner end is provided with an enlargement formed therewith or carried thereby, as indicated at H, and which enlargement enters the opening or hole formed at the longitudinal center of the compressed mass in the chamber. The free ends of the arms or fingers are arranged to project toward and may bear against the surface of the head-plate, and said arms or fingers may be of some stout spring material.

From the above description it will be seen that when relative rotation is imparted to the chamber and head-plate—as, for instance, by rotating the chamber—then, by reason of the engagement of the compressed material in the chamber with the enlargement H of spindle G, a corresponding axial rotation is imparted to said spindle and to the cap F, carrying the spring arms or fingers E, and such

rotation, by reason of the free ends thereof bearing against or presented toward the surface of the head-plate, causes such free ends of the fingers to ride over the surface of the head-plate, and hence push or press the cotton, wool, or the like down against the head-plate, thus breaking up or preventing the formation of bridges or arches and also effecting a crowding of the material toward and in proximity to the slots in the head-plate, whereby it may be efficiently engaged or caught by the material in the chamber and drawn in and compressed. It is evident that the same result may be attained in the case where the head-plate revolves and the chamber is stationary. In such case the spindle will be held against rotation by reason of its engagement with the material in the stationary chamber, and hence the moving surface of the head-plate past the free ends of the feeding-fingers effects the same results as above described. It is also obvious that other means may be employed for rotating the spindle. The arrangement shown, however, is simple and efficient for the desired purposes.

In order that the loose material supplied to the head-plate in bulk may not be caught by the spindle revolving therein during the operation of the apparatus, I may, if desired, provide a stationary sleeve J and arrange the spindle to pass longitudinally through the said sleeve. Thus the sleeve not only protects the spindle against winding the cotton, wool, or the like thereon, but also serves as a journal-bearing and support for such spindle.

Having now set forth the object and nature of my invention and a form of construction embodying the principles thereof and having explained such construction, its function, and mode of operation, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent of the United States, is—

1. In a cotton or other press, a press-chamber, a slotted head-plate therefor, and means for relatively rotating these parts, in combination with feed fingers or arms arranged to bear upon the surface of said head-plate, and means for imparting relative movement to said finger or arms and head-plate, for crowding or feeding the loose material to said slots, as and for the purpose set forth.

2. In a cotton or other press, a press-chamber, a slotted head-plate therefor, and means for relatively rotating these parts, in combination with a series of spring arms or fingers held at one end and bearing at their free ends upon the surface of said head-plate, and means for imparting relative movement to said fingers or arms and head-plate, whereby the loose material supplied to said head-plate is crowded or fed to said slots, as and for the purpose set forth.

3. In a cotton or other press, an open-ended chamber, means for rotating the same, and a stationary slotted head-plate for one end of said chamber, in combination with a spindle

mounted centrally with respect to said head-plate and carrying arms or fingers, the free ends of said arms or fingers bearing upon the surface of said head-plate, as and for the purpose set forth.

5 4. In a cotton or other press, an open-ended chamber, a slotted head-plate therefor, and means for relatively rotating these parts, in combination with a spindle journaled in said head-plate and centrally with respect thereto, said spindle extending through said head-plate and engaging the material in the chamber, and spring-arms carried by the outer end of said spindle and having their free ends presented toward the surface of said head-plate, as and for the purpose set forth.

15 5. In a cotton or other press, and in combination with means for rotating a mass of compressed material, a slotted head-plate against which one end of said compressed mass bears, a spindle arranged to pass through said head-plate and engaging said compressed mass, and feeder arms or fingers carried by said spindle and projecting toward the sur-

face of said head-plate, as and for the purpose set forth. 25

6. In a press, a press-chamber, a slotted head-plate therefor, and means for relatively rotating these parts, in combination with a sleeve carried by said head-plate, a spindle journaled in said sleeve, and feed arms or fingers carried by said spindle, as and for the purpose set forth. 30

7. A feeding device for presses, comprising a spindle, a cap carried thereby, and a series of feeder arms or fingers carried by said cap and operating to feed the material to the press, in combination with a press-chamber and a slotted cap, these parts being mounted for relative rotation, as and for the purpose set forth. 40

In witness whereof I have hereunto set my hand, this 24th day of August, 1899, in the presence of the subscribing witnesses.

GEORGE A. LOWRY.

Witnesses:

WM. M. RHEEM,

DANIEL W. HOWLAND.