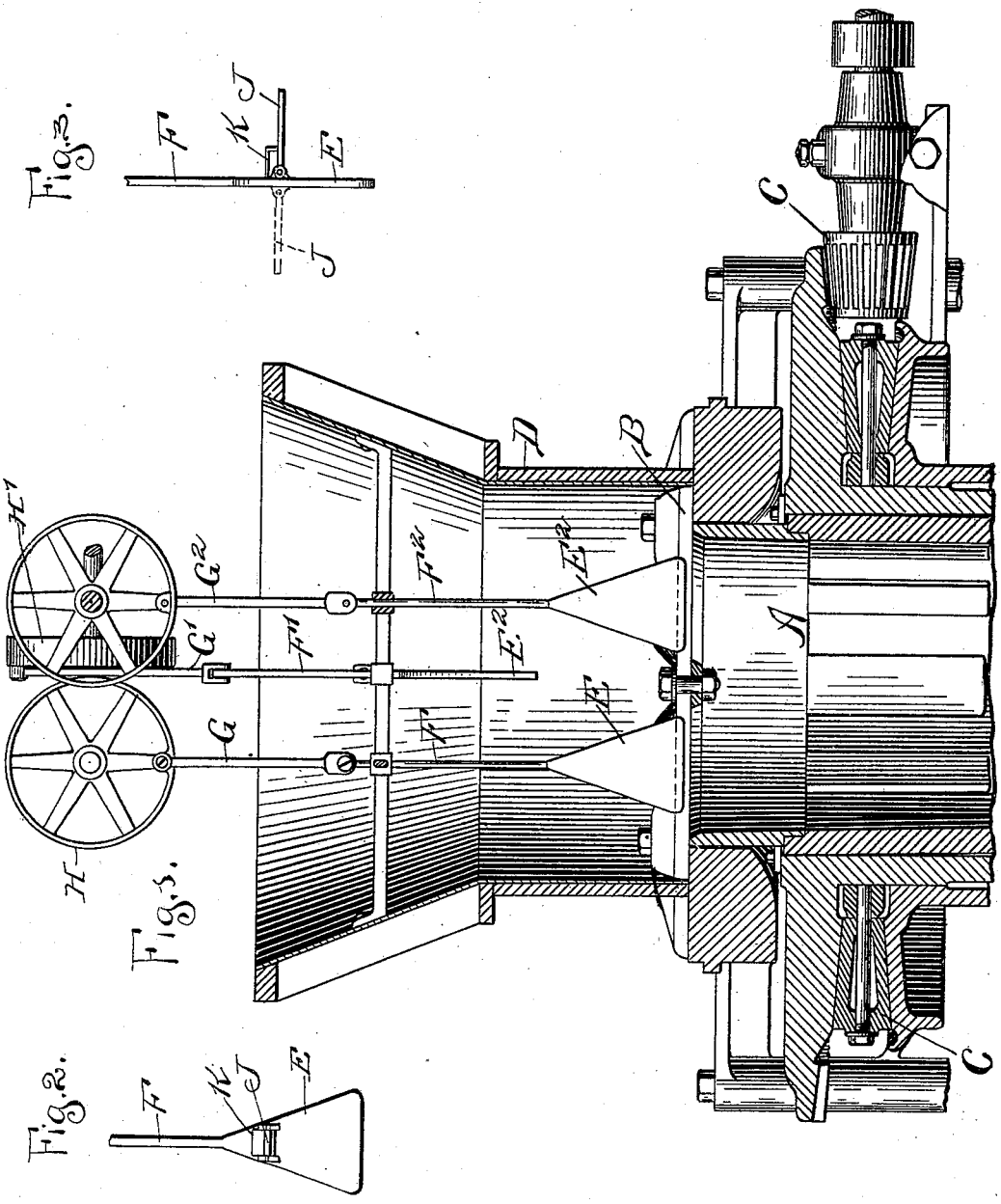
No. 645,727. Patented Mar. 20, 1900.

G. A. LOWRY.

FEEDING DEVICE FOR PRESSES.

(Application filed June 23, 1899.)

(No Model.)



Witnesses:
Walter E. Lombard
J. B. Weir

Inventor:
George A. Lowry,
by Brown & Darby
Atty.

UNITED STATES PATENT OFFICE.

GEORGE A. LOWRY, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PLANTERS COMPRESS COMPANY, OF BOSTON, MASSACHUSETTS.

FEEDING DEVICE FOR PRESSES.

SPECIFICATION forming part of Letters Patent No. 645,727, dated March 20, 1900.

Application filed June 23, 1899. Serial No. 721,550. (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 Improvement in Feeding Devices, of which the following is a specification.

This invention relates to feeding devices, 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 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 broken detail view, in side elevation, of a feeder-plate provided with a side flap or wing. Fig. 3 is an edge view of the same.

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 rotate. Rotation may be imparted to the rotating part in any suitable or convenient manner—as, for instance, through pinion C, driven from any suitable or convenient source. 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 chamber to fill the same to a point such as to cause the same 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 holder 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 this manner 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 a condensed highly-compressed column. Thus the chamber operates as a holder for the mass of material which is being compressed, and the head-plate operates as 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 pending application, Serial No. 682,947, filed June 8, 1898.

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 pressed is delivered and from which it is drawn into the chamber in the manner above described.

In order to secure the desired rigidity in the construction 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 may be so constructed as to leave a considerable ridge or elevation between adjacent slots, the surface of which slopes or tapers toward the edges or lips of the slot.

In the case of light fluffy material—such, for instance, as cotton, wool, and the like—when delivered in large quantity upon the head-plate it sometimes occurs that such material bridges or arches across the depressions in the surface of the head-plate, at the bottom of which depressions the feed-slots are located. In fact, it sometimes happens that these bridges or arches form in the basket or receptacle before the material reaches the head-plate. This bridging or arching of the material across the slots or in the basket is objectionable, for the reason that it prevents the material from coming into sufficiently-close proximity to the slot 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 the arches or bridges and for crowding or pushing the material into sufficient 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 feeder-plates E E′ E^2, arranged to be reciprocated toward and from the head-plate and which operate to crowd or push the loose material supplied to the head-plate down toward and in proximity to the slot or slots therein, whereby it may be efficiently engaged by the material in the chamber and drawn into such chamber. I have shown a simple and efficient construction for operating the feeder-plates wherein each plate is carried by a rod F F′ F^2, mounted to slide through a suitably-arranged bearing, each rod being connected to a pitman G G′ G^2, which is pivotally connected to a wrist-pin on the face of a wheel or disk H H′ H^2. Thus by imparting rotation to the disk or wheel a reciprocation toward and from the head-plate is imparted to the feeder-plate, thus agitating the mass of loose material to prevent the formation of arches or bridges across the feed-slots or in the receptacle D and crowding or pushing such loose material down into proximity to the slots in the head-plate. I have shown three feeder-plates and operating means therefor; but it is obvious that only one or any desired number of such plates may be employed. It is also evident that the plates may occupy any desired relation with respect to the head-plate or the slots therein. In practice, however, and in order to secure the best possible results I prefer to arrange each feeder-plate to operate in a depression in the surface of the head-plate—that is, the plane of the feeder-plate and that in which it operates intersects the slot in connection with which it operates lengthwise thereof. In this manner the material to be fed to the press-chamber is pushed or crowded toward the slot and in proximity thereto. In order to enable the feeder-plates to free themselves while being withdrawn from the material on its outward movement from the head-plate, so as not to carry the material with it, I prefer to make such plates somewhat triangular in shape, as shown, with the base thereof forming the crowding edge.

If desired, I may associate with the feeder-plate, on one or both sides thereof, a pivoted flap J, hinged or pivoted on an axis at right angles to the line of reciprocation of the feeder-plate. The momentum of movement of the plate when reciprocated or moved toward the head-plate, together with the engagement of the side flap with the mass of material, will cause said flap or flaps to swing outwardly away from the feeder-plate, as shown in Fig. 3, thus aiding in crowding the material toward the head-plate and into position for the feeder-plate to engage and present or push the same to the slot in the head-plate. A stop K may serve to limit the outward swing of the flap. The movement of the feeder-plate away from the head-plate will cause the side flap to fold down against the side of the feeder-plate, and hence enable the feeder-plate and flap to be withdrawn without carrying loose material along.

Having now set forth the object and nature of my invention and a construction embodying the same, 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 or holder, a slotted head-plate therefor, and means for relatively moving these parts, in combination with one or more feeder-plates carried by said head-plate, and means for reciprocating said plates toward and from said head-plate and in the plane of the slot therein, as and for the purpose set forth.

2. In a cotton or other press, an open-ended chamber or holder, and a slotted head-plate, and means for relatively rotating these parts, in combination with one or more pitmen mounted upon and arranged to reciprocate toward and from said head-plate, a feeder-plate carried by each pitman, said feeder-plate arranged in the plane of the slot of said head-plate, and means for reciprocating said pitmen, as and for the purpose set forth.

3. In a cotton or other press, and in combination with means for rotating a mass of compressed material, a stationary slotted head-plate, a feeder-plate having the edge thereof

presented in a line parallel to the slot in said head-plate, and means for reciprocating said feeder-plate in the plane of said slot, as and for the purpose set forth.

4. In a cotton or other press, and in combination with means for rotating a mass of compressed material, a stationary slotted head-plate, a triangular-shaped feeder-plate having its base edge arranged parallel to the slot in said head-plate, and means for reciprocating said feeder-plate toward and from said head-plate and in the plane of said slot, as and for the purpose set forth.

5. A feeding device for presses, comprising a feeder-plate and means for reciprocating the same, and a side flap pivoted to said plate to swing at right angles to the line of reciprocation thereof, as and for the purpose set forth.

6. A feeding device for presses, comprising a feeder-plate and means for reciprocating the same, in combination with a side flap pivoted to said plate to swing at right angles to the line of reciprocation thereof, and a stop for limiting the outward swing of said flap, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 27th day of May, 1899, in the presence of the subscribing witnesses.

GEORGE A. LOWRY.

Witnesses:
FRANK T. BROWN,
S. E. DARBY.