

No. 645,731.

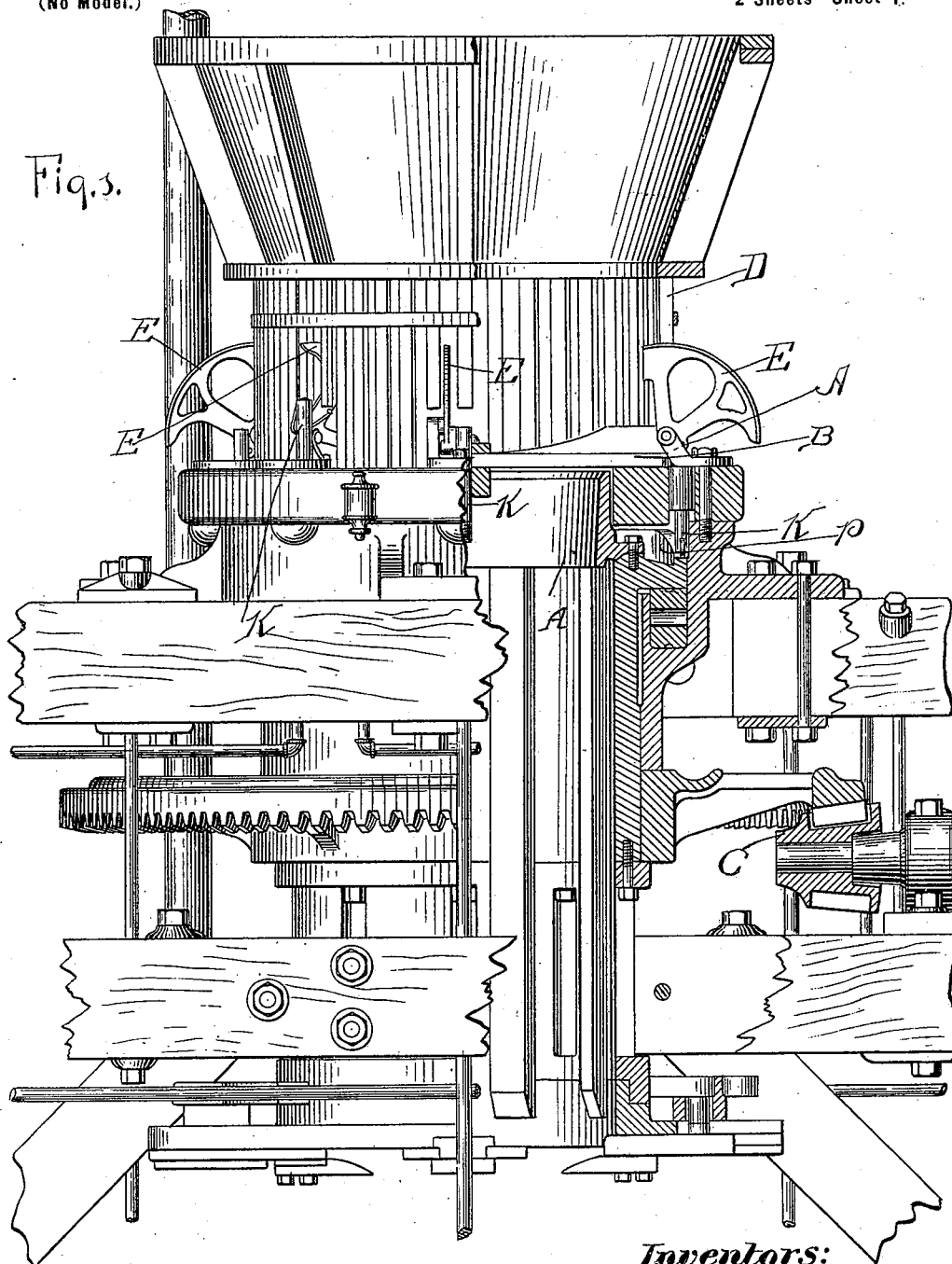
Patented Mar. 20, 1900.

G. A. LOWRY & W. M. HOLMES.
FEEDING DEVICE FOR PRESSES.

(Application filed Sept. 1, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

Fig. 2.

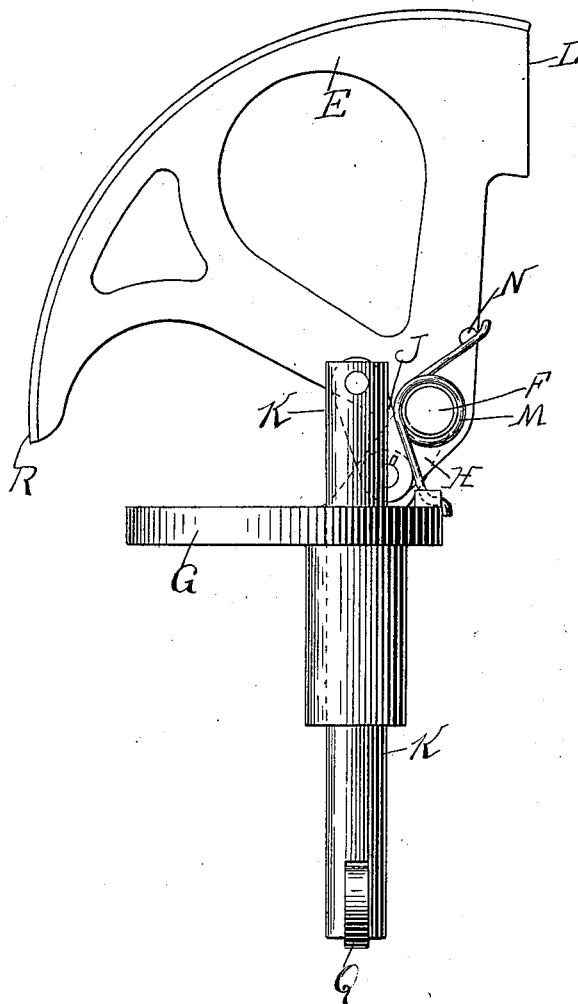


Fig. 3.

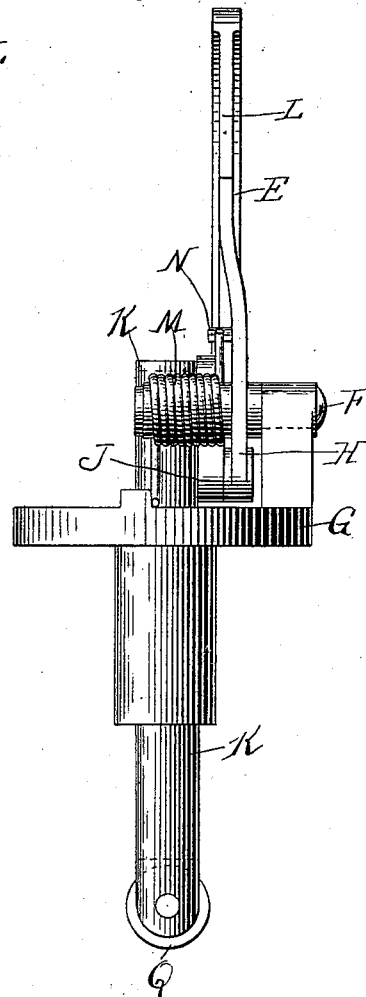
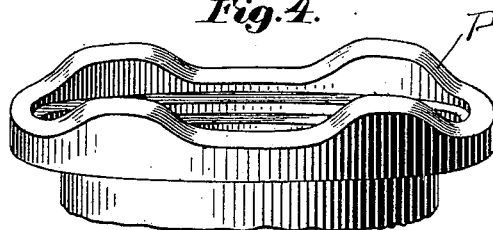


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE A. LOWRY, OF CHICAGO, ILLINOIS, AND WATSON M. HOLMES, OF
HOOSIC FALLS, NEW YORK, ASSIGNORS TO THE PLANTERS COMPRESS
COMPANY, OF BOSTON, MASSACHUSETTS.

FEEDING DEVICE FOR PRESSES.

SPECIFICATION forming part of Letters Patent No. 645,731, dated March 20, 1900.

Application filed September 1, 1899. Serial No. 729,246. (No model.)

To all whom it may concern:

Be it known that we, GEORGE A. LOWRY, residing at Chicago, county of Cook, State of Illinois, and WATSON M. HOLMES, residing at Hoosic Falls, county of Rensselaer, State of New York, citizens of the United States, have invented a new and useful Feeding Device for Presses, of which the following is a specification.

This invention relates to feeding devices for presses, and is designed as a specific construction embraced in and covered by the generic invention and claims of the application of George A. Lowry for feeding devices for presses, Serial No. 718,647, filed May 29, 1899.

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 and to the various views and reference-signs appearing thereon, Figure 1 is a view in elevation, parts in longitudinal section and parts broken off, of a press, showing the application thereto of a construction embodying the principles of our invention. Fig. 2 is a detached detail view, in side elevation, of a feeder-arm and its operating connections. Fig. 3 is an edge view of the construction shown in Fig. 2. Fig. 4 is a detached detail view of the cam for actuating the feeder-arms.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

Reference-sign A designates a chamber or holder in which the material is compressed, and B a slotted head-plate therefor. These parts are mounted and suitably supported for relative rotation. For instance, 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 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 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 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 the form of a condensed and highly-compressed column, the chamber operating as a holder for the mass of material which is being compressed and the head-plate operating as an abutment against which the end of the compressed mass bears.

The construction and operation so far de-

scribed embodies in its generic principles the features set forth and claimed, broadly, in Patents Nos. 581,600 and 581,601, issued April 27, 1897, and No. 630,369, issued August 8, 1899, to George A. Lowry.

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, this invention is not limited or restricted, a basket or receptacle D is arranged over the head-plate, and into this receptacle or basket the material to be pressed 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 said elevations or ridges tapering or sloping toward the edges or lips of the slots. This bridging or arching of the material, which also sometimes occurs in the basket or receptacle before the material reaches the head-plate, 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 crowding or pushing the material toward the head-plate and into sufficiently-close proximity to the slots therein to enable it to be caught or engaged by the material in the chamber and drawn thereinto. These purposes are accomplished in the present instance by means of one or more feeder-arms E, arranged to be rocked toward and from the head-plate. Each feeder-arm is pivotally mounted on a stud or pin F, suitably carried or mounted in a supporting-plate G, the latter being suitably mounted or arranged on a stationary part of the apparatus. For instance, in the particular form shown the feeder-arm-supporting plates G are mounted on the supporting-frame of the stationary head-plate. To an extension H of the feeder-arm beyond its point of pivotal support is connected one end of a link J, the other end of said link being connected to a rod K. From this description it will be seen that by projecting the rod K endwise the feeder-arm is rocked about its support and the feeding edge L of said arm is caused to move or swing toward the head-plate. A spring M may be suitably arranged to oppose the swing or movement of the

feeder-arm toward the head-plate and to return the same when the rod K is released. We have shown a convenient arrangement of such spring, wherein it is shown coiled upon the stud or pin F, with one end engaging the supporting-plate G and the other end engaging the feeder-arm or a lug N thereon. In the form shown the tension of said spring is normally exerted in a direction to cause the feeder-arm to move away from the head-plate, and the said feeder-arm is caused to move toward the head-plate against the tension of said spring. The rod K may be projected endwise in the operation of the apparatus in any suitable or convenient manner. We have shown a simple and efficient arrangement wherein we provide a cam P, preferably in the form of a ring, thereby producing a track having a cam-surface upon which the rods K rest. The cam-ring may be suitably formed on or carried by the press-chamber, as shown in Fig. 1, and hence revolves or travels with such chamber. It is obvious, however, that said cam-track may be held stationary and the support for the rods may be caused to revolve, so as to move the ends of the rods along or over said cam-track. It is also obvious that the spring M may be omitted and the weight of rod K employed for returning the feeder-arm and also maintaining the engagement of said rod with the cam-track. We prefer to employ the spring, however, as thereby the return of the feeder-arm after being advanced is insured.

In order to reduce friction and to secure an easy operation of the device, a friction-roller Q may be mounted in the end of the rod K to form the contacting surface thereof with the cam-track.

One or any number of the feeder-arms may be employed, as may be desired, and where several of such arms are used they may be arranged at suitable intervals around the head-plate, and when said arms are actuated the feeding edges L thereof advance or swing toward the head, thus crowding or pushing the material toward the head. An efficient and preferable arrangement is to employ a feeder-arm in connection with each slot in the head-plate and to arrange such arm to operate in the plane of such slot and between adjacent ridges or elevations in the surface of the head-plate. By this arrangement the formation of bridges or arches is prevented and the material to be pressed is crowded or pushed down into such close proximity to the slots as to insure engagement of the same with the relatively-moving compressed mass in the chamber, thus effecting an efficient feed of the material to the press-chamber.

In the case where a receptacle or basket is employed the feeder-arms may be arranged to operate through suitable openings in the wall of the basket or between the slots composing such basket, as clearly shown in the drawings.

In order that the feeder-arms may be easily

withdrawn from the mass of loose material surrounding the same after having been advanced to their work of crowding or pushing the material toward the head-plate without unduly carrying with them any of such loose material, we prefer to form such feeder-arms in the shape of segments, as shown, and to suitably point the tail or heel ends thereof, as shown at R, Fig. 2.

Many changes and variations in the details of construction and arrangement would readily suggest themselves to persons skilled in the art and still fall within the scope of our invention. We do not desire, therefore, to be limited or restricted to the exact construction shown; but,

Having now set forth the object and nature of our invention and a construction embodying the same and having explained such construction, its functions and mode of operation, what we claim as new and useful and of our joint invention, and desire to secure by Letters Patent of the United States, is—

1. In a cotton or other press a compression-chamber, a slotted head-plate or cap, and means for relatively rotating these parts, in combination with a feeding device comprising a pivotally-mounted feed-arm arranged to operate in the plane of the slot in said head-plate or cap, a rod connected thereto, and means for projecting said rod, as and for the purpose set forth.

2. In a press, a compression-chamber, a slotted head-plate or cap therefor, and means for relatively rotating these parts, in combination with a feeding device comprising a pivotally-mounted feed-arm, an operating-link connected thereto, a rod connected to said link and means for projecting said rod, whereby said feed-arm is rocked toward said head-plate or cap to crowd or feed the loose material into proximity to the slot therein, as and for the purpose set forth.

3. In a press, a compression-chamber, a slotted head-plate or cap therefor, and means for relatively rotating these parts, in combination with a feeding device comprising a pivotally-mounted feed-arm, a rod connected thereto, means for projecting said rod in one direction and a spring arranged to oppose said projecting movement, whereby said feed-arm is operated toward and from the head-plate or cap, to crowd or feed the material into proximity to the slot therein, as and for the purpose set forth.

4. In a press, a compression-chamber, a slotted head-plate or cap therefor, and means for relatively rotating these parts, in combination

with a feeding device comprising a pivotally-mounted feed-arm, a link connected thereto, a rod connected to said link, a cam-track upon which said rod bears, whereby when said track and rod are relatively moved said rod is projected endwise and a spring for opposing the endwise projection of said rod, as and for the purpose set forth.

5. A feeding device for presses, comprising a supporting-plate, a pin or stud carried thereby, a feeder-arm pivotally mounted on said stud and a spring mounted on said stud and engaging at its ends respectively with said plate and arm, in combination with a rod connected to said arm and a cam-track for projecting said rod, as and for the purpose set forth.

6. In a press a chamber, a slotted head-plate therefor and means for relatively rotating these parts, in combination with a pivotally-mounted feeder-arm, a rod connected thereto and a cam for projecting said rod, said rod and cam respectively connected to said head-plate and chamber, as and for the purpose set forth.

7. In a press an open-ended chamber, means for rotating the same and a stationary slotted head-plate therefor, in combination with a feeder-arm pivotally mounted on said head-plate, an operating-rod for said feeder-arm, and a cam-track carried by said chamber upon which said rod operates, as and for the purpose set forth.

8. In a press, a slotted head-plate and means for revolving a compressed mass of material thereagainst, in combination with a feeder-arm pivotally mounted with respect to said head-plate, an operating-rod therefor, and means actuated coincidently with the rotation of said compressed mass for projecting said rod, as and for the purpose set forth.

9. A feeding device for presses comprising a segment feeding-arm having a feed edge and a pointed tail or heel said arm being pivotally mounted in combination with a longitudinally-movable rod, a link connecting said rod and arm, and means for periodically projecting said rod endwise for rocking said arm toward and from the press, as and for the purpose set forth.

In witness whereof we have hereunto set our hands, this 24th day of August, 1899, in the presence of two subscribing witnesses.

GEORGE A. LOWRY.
WATSON M. HOLMES.

Witnesses:

WM. M. RHEEM,
DANIEL W. HOWLAND.