

No. 645,721.

Patented Mar. 20, 1900.

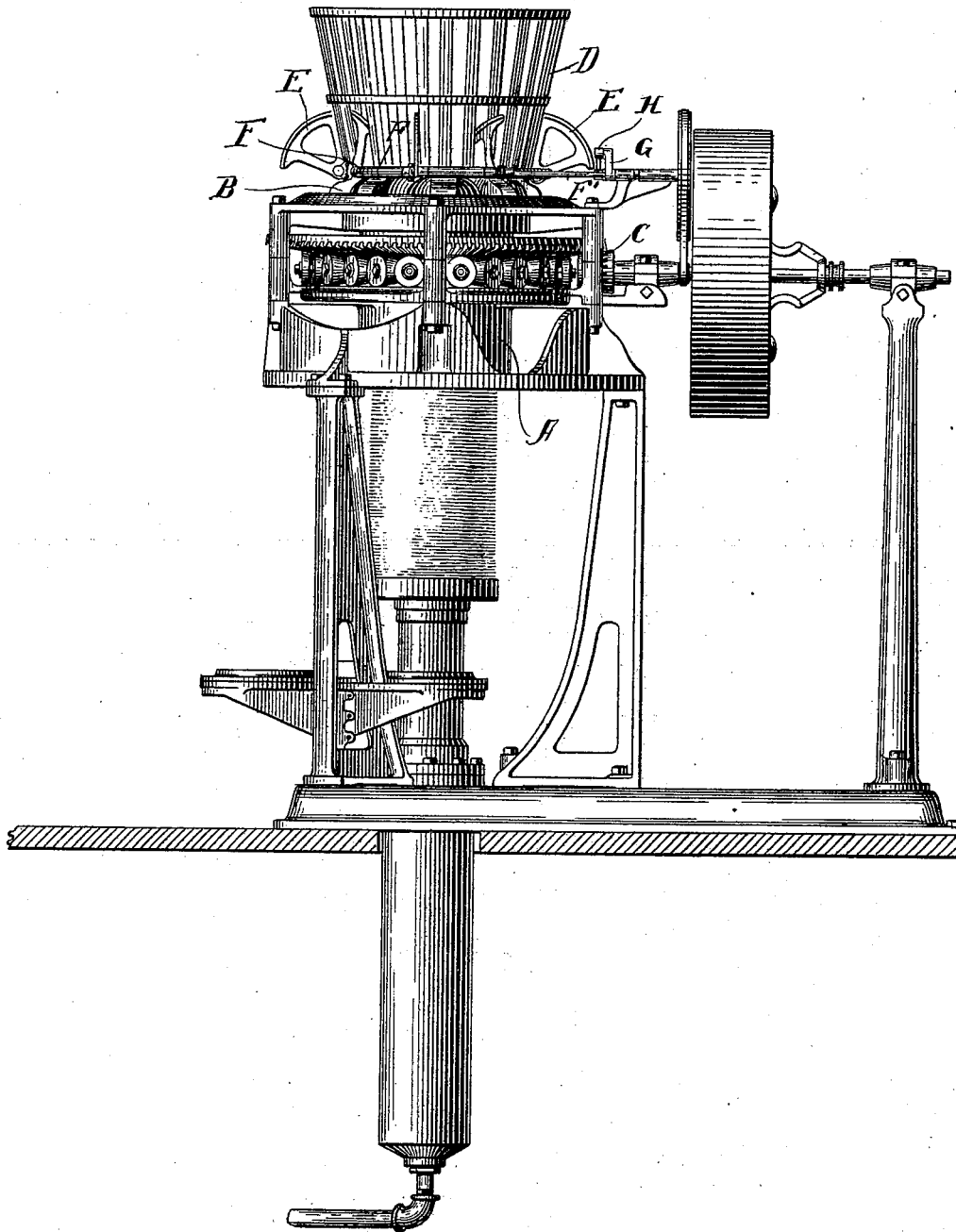
W. M. HOLMES.
FEEDING DEVICE FOR PRESSES.

(Application filed Sept. 1, 1899.)

(No Model.)

4 Sheets—Sheet 1.

Fig. 1.



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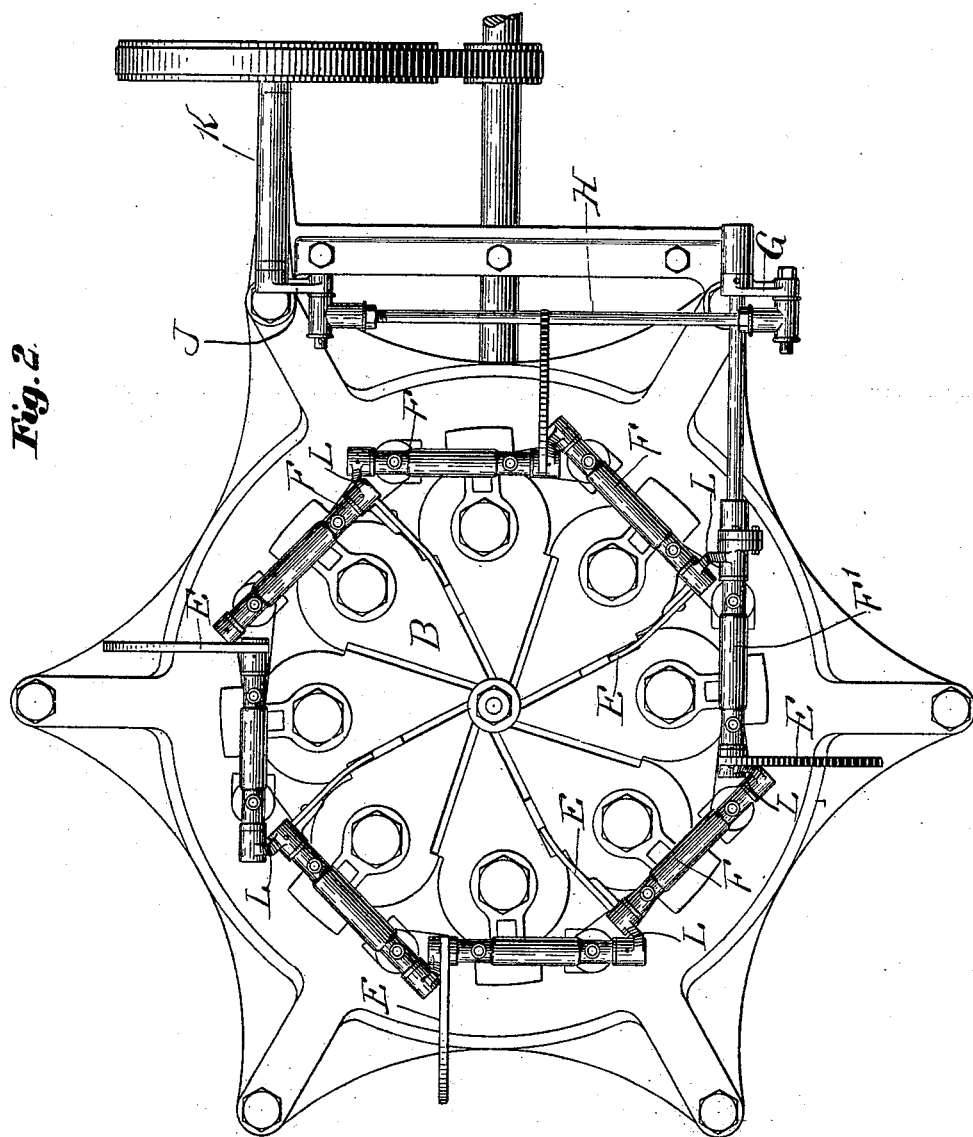
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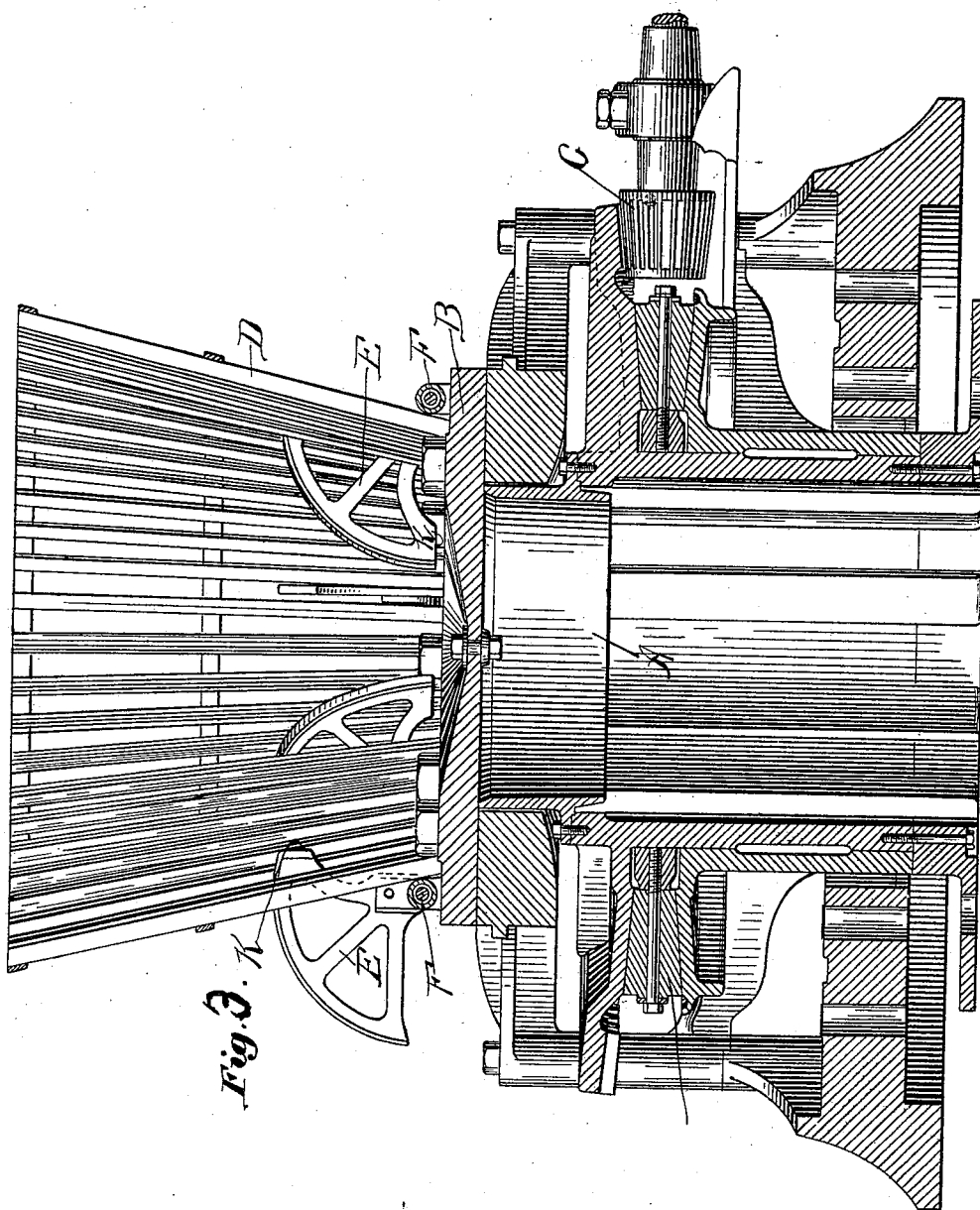
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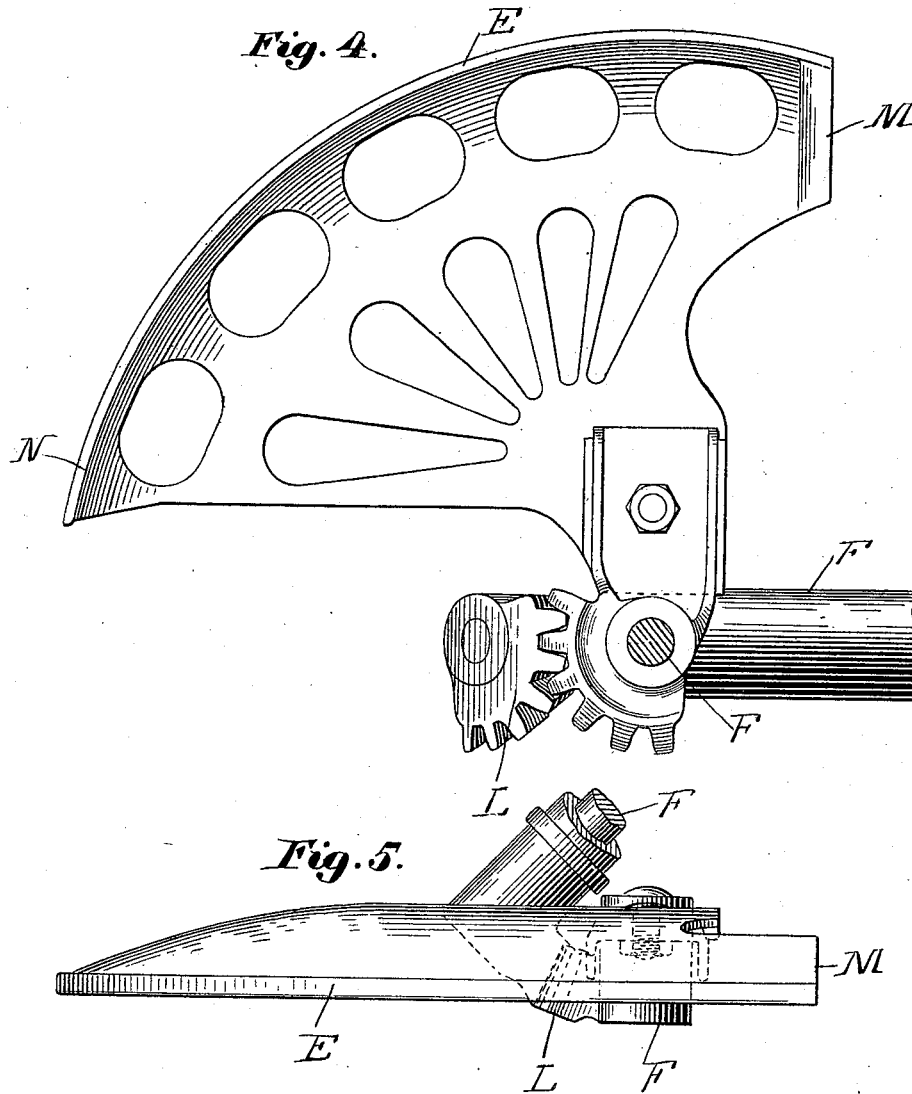
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4 Sheets—Sheet 4



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UNITED STATES PATENT OFFICE.

WATSON M. HOLMES, OF HOOSIC FALLS, NEW YORK, ASSIGNOR TO THE
PLANTERS COMPRESS COMPANY, OF BOSTON, MASSACHUSETTS.

FEEDING DEVICE FOR PRESSES.

SPECIFICATION forming part of Letters Patent No. 645,721, dated March 20, 1900.

Application filed September 1, 1899. Serial No. 729,250. (No model.)

To all whom it may concern:

Be it known that I, WATSON M. HOLMES, a citizen of the United States, residing at Hoosic Falls, in the county of Rensselaer and State of New York, 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 it is designed as a specific construction embraced in and covered by the generic invention and claims of the application for patent of George A. Lowry 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 pointed out 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 side elevation of a press, showing the application thereto of a construction embodying the principles of my invention. Fig. 2 is a top plan view of the same, the receptacle or basket being removed. Fig. 3 is a longitudinal central section through the press-chamber. Fig. 4 is a detached detail view of a feeder-arm, showing the manner of operating the same. Fig. 5 is a similar view in plan, parts broken off.

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

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, 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—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 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 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 superposed 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 described embodies in its generic principles the features set forth and claimed, broadly, in

Patents Nos. 581,600 and 581,601, granted April 27, 1897, and No. 630,369, granted 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, the 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 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 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 the same 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 or away from the head-plate. Each feeder-arm is mounted upon a short rock-shaft F, suitably journaled in bearings formed or mounted upon the head-plate. In practice these shafts are arranged around the head-plate adjacent to the outer periphery thereof. One of said shafts, as F', (see Fig. 2,) may be extended and provided with a crank-arm G, to which is connected a pitman or connecting-rod H, the other end of said pitman or connecting-rod being connected to a crank-arm J, mounted on a shaft K, driven from any suitable or convenient source and in any suitable or convenient manner. In this manner and by the construction described a rocking movement is imparted to shaft F', and from said shaft rocking movement is imparted to the series of short rock-shafts F through the intermeshing segments L. In this manner the shafts F are rocked to cause the feeder-

arms to swing or move toward or away from the surface of the head-plate, and when said shafts are rocked to move the feeder-arms toward the head-plate the front or engaging edge M of the feeder-arms engages the mass of loose material and crowds or pushes the same toward the head-plate, and in order that the feeder-arms may free themselves from the surrounding mass of material while being withdrawn or rocked away from the head-plate the rear or outer ends N of said arms are preferably pointed, as shown in Fig. 4, thus enabling said arms to be withdrawn from the mass of loose material without carrying such material with it.

One or any number of feeder-arms may be employed, as may be desired. In the particular form illustrated in the drawings eight rock-shafts F F' are shown, each carrying a feeder-arm, said shafts being arranged and suitably spaced around the periphery of the head-plate at an angle of about forty-five degrees to each other. An efficient and preferable arrangement is to employ a feeder-arm in connection with each slot in the head-plate and to arrange each 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 arches or bridges is prevented or broken up, and the material to be compressed 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 basket or receptacle is employed the feeder-arms may be arranged to operate through suitable openings in the wall of the basket or between the slats composing such basket, as clearly shown in the drawings. In practice I prefer to so relatively arrange and operate the feeder-arms that when one or more of the arms are being advanced or rocked toward the head-plate the others or one or more thereof are being rocked or swung away from the head-plate, as indicated in Fig. 2, and thus by varying the relative periods of advancement of the feeder-arms the press-chamber will be drawing the material at all times through some one or more of the slots therein.

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 spirit and scope of my invention. I do not desire, therefore, to be limited or restricted to the exact construction shown; but,

Having now set forth the object and nature of my invention and a construction embodying the same 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, the combina-

tion with a slotted head-plate, of a feeding device, comprising a series of rock-shafts arranged around the head-plate and carrying feed-arms, said shafts being geared to each other, and means for rocking said shafts, whereby said feeder-arms are rocked or swung toward the press-chamber to feed or crowd the material to the slots in the head-plate, as and for the purpose set forth.

2. In a cotton or other press, a compressing chamber or holder, and a slotted head-plate therefor, in combination with a feeding device, comprising a series of rock-shafts suitably journaled and arranged around the receiving end of the press-chamber, intermeshing gears carried by said shafts, whereby said shafts are connected to rock in unison, a feeder-arm carried by each shaft, and means for rocking one of said shafts, as and for the purpose set forth.

3. In a press, a chamber, a slotted head-plate therefor, and means for relatively rotating these parts, in combination with a series of rock-shafts, suitably journaled in bearings carried by the head-plate, said shafts being geared together, a feeder-arm carried by each shaft to rock or swing toward the surface of said head-plate and in the plane of the slot therein, and means for rocking one of said shafts, as and for the purpose set forth.

4. In a press, a chamber, a head-plate having a plurality of feed-slots therein, and means for relatively rotating said chamber and head-plate, in combination with a series of rock-shafts, journaled adjacent to the periphery of said head-plate, a feeder-arm carried by each rock-shaft, each feeder-arm arranged to swing or move toward or from and in substantially the same plane with a slot in the head-plate, and means for rocking said shafts, as and for the purpose set forth.

5. In a press, a chamber, a head-plate therefor, said head-plate provided with a plurality of slots, and means for rotating these parts, in combination with a plurality of feeder-arms pivotally mounted adjacent to the periphery of said head-plate, and means for rocking or swinging one or more of said arms toward the head-plate, and simultaneously therewith swinging one or more of said arms away from the head-plate, as and for the purpose set forth.

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

WATSON M. HOLMES.

Witnesses:

WM. M. RHEEM,
D. W. HOWLAND.