No. 645,712. Patented Mar. 20, 1900.

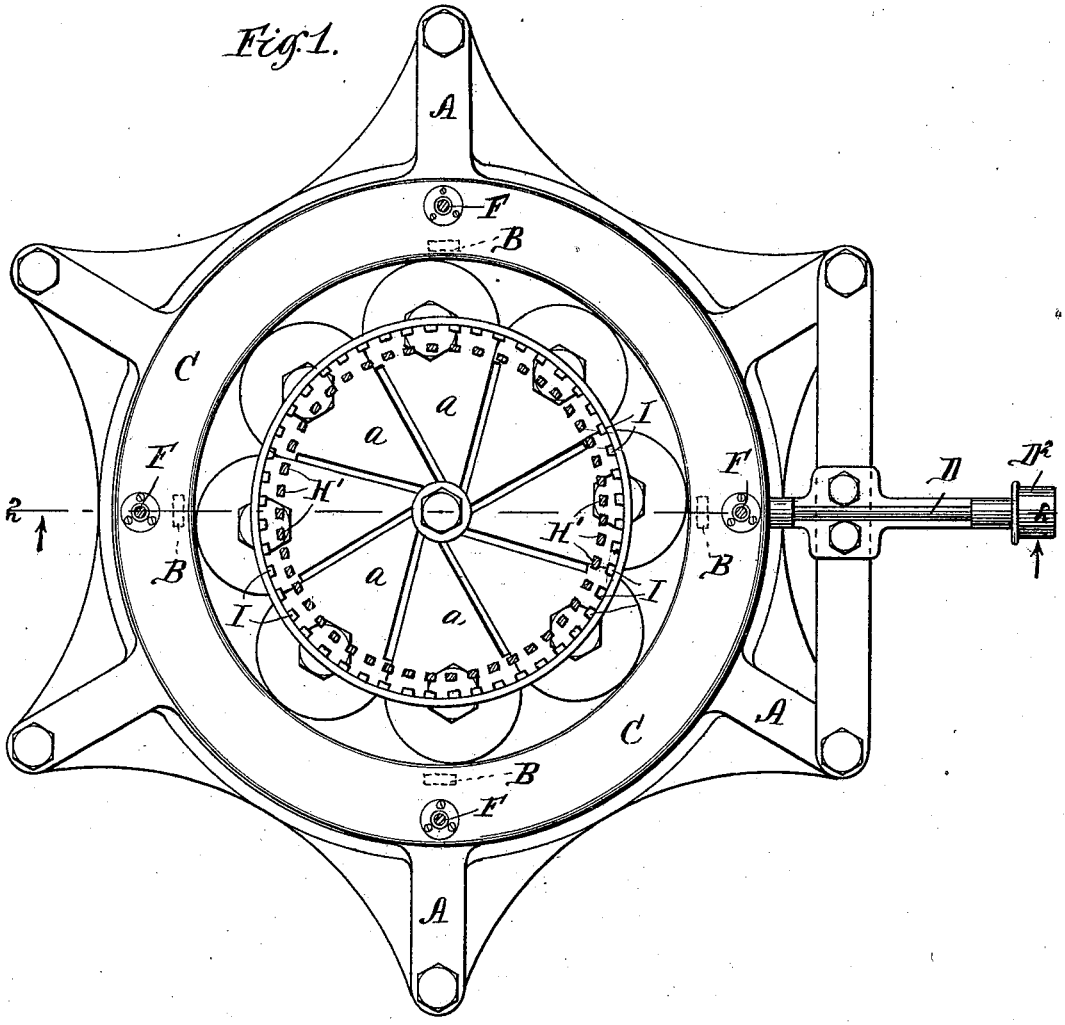
J. A. BUTLER.

HOPPER FOR PRESSES.

(Application filed Aug. 21, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



Witnesses.
Wm. M. Rheem.
E. C. Semple

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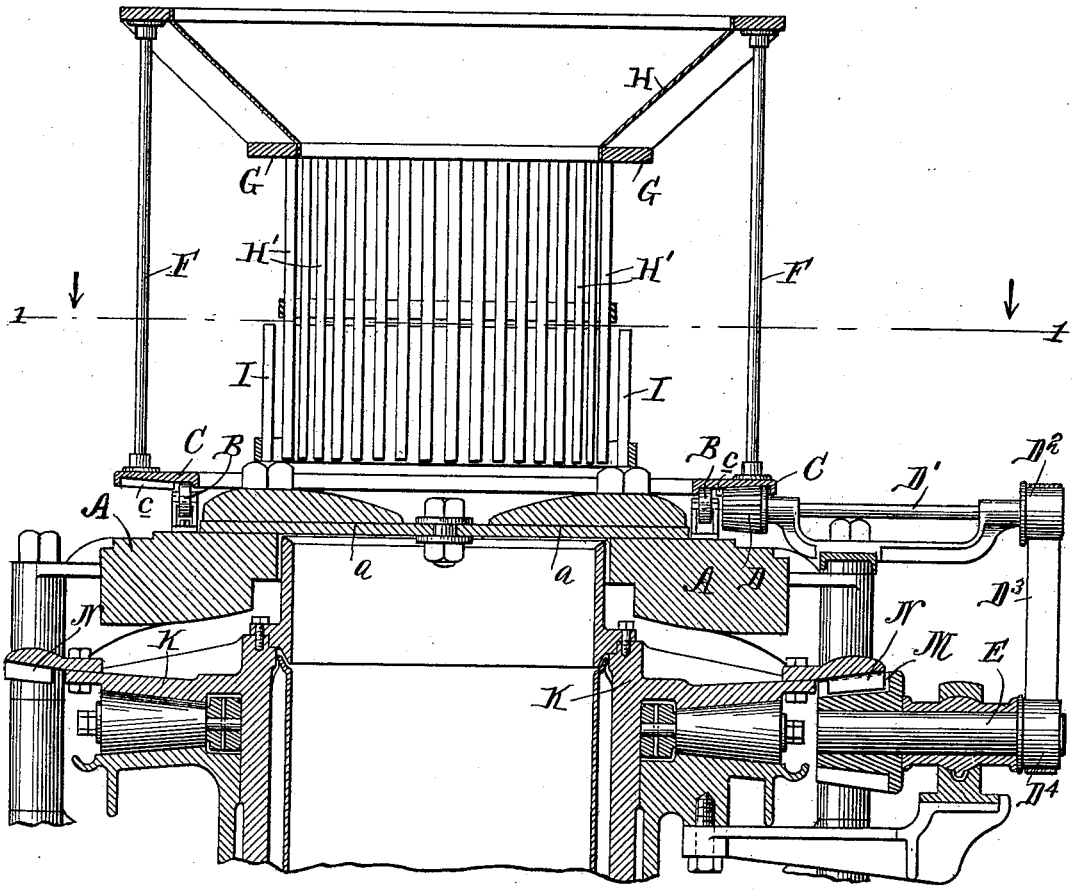
Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES A. BUTLER, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE PLANTERS COMPRESS COMPANY, OF WEST VIRGINIA.

HOPPER FOR PRESSES.

SPECIFICATION forming part of Letters Patent No. 645,712, dated March 20, 1900.

Application filed August 21, 1899. Serial No. 727,895. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. BUTLER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Hoppers for Presses, of which the following is a specification.

This invention relates to an improvement in hoppers for presses; and its object is to facilitate the feeding of the material to the press.

The invention consists, substantially, in the construction hereinafter described, and more particularly pointed out in the claims.

Like letters refer to the same parts in both figures of the drawings, in which—

Figure 1 is a horizontal section of the apparatus, taken on the line 1 1 of Fig. 2 of the drawings. Fig. 2 is a vertical section of the apparatus, taken on the line 2 2 of Fig. 1 of the drawings.

The improved hopper forming the subject-matter of the present invention and set forth in the succeeding specification is particularly adapted to be applied to a press in which there is a slotted head-plate and a subjacent chamber and mechanism for giving said head-plate and chamber a relative rotation. One example of such a machine is embraced in Patent No. 630,374, granted August 8, 1889, to George A. Lowry.

In the form of machine illustrated in the drawings and which is one example of a style of apparatus to which the present invention may be applied a chamber K, in which the material to be compressed is formed in superposed layers, is given a rotation by a bevel-gear M, driven from a suitable shaft E and engaging with teeth N, secured to the chamber. Superposed above the chamber and supported from the main frame on a ring A is the cap-plate *a*, which in the instance illustrated is stationary. Mounted also in suitable brackets on the ring A and at proper intervals are the antifriction-rollers B. Four of these are shown in Fig. 1 of the drawings; but it is evident that the number may be varied according to circumstances and the judgment of the constructor. Supported upon these antifriction-rollers is a thin ring C, which has a plain under surface for a portion of its width to provide for a bearing upon such rollers and has for the rest of its width or any suitable portion thereof teeth extending laterally and formed at proper intervals entirely around the ring, so as to provide a circular rack *c*, which is adapted to mesh with a bevel-pinion D, which latter is driven in any suitable manner, but conveniently by shaft D′, from a pulley D^2, which is connected by a belt D^3 with the main driving-pulley D^4. This ring C forms the base for supporting a series of vertical rods or pillars F, which in turn support the suspended hopper, composed in the example illustrated of the funnel-shaped metal section H and the slats H′, joined at their upper end by a ring G. The purpose of giving movement to the hopper is to better distribute the fibrous material over the slots. When the material is thrown into a stationary hopper arranged over a group of slots, it is apt to collect in a mass over certain slots and not be distributed evenly over all of them; but by revolving the hopper the material is carried along and spread much more evenly over the slots. Of course the mechanism for revolving and supporting this hopper may be widely varied from that shown and heretofore described without departing from the spirit of the invention, and the hopper itself may be changed in construction without varying its principle of operation; but the arrangement and form shown have been found convenient and most efficient in practice.

Surrounding the lower portion of the hopper there may be provided a stationary cage I, supported upon the cap-plate or the frame, the function of which is to prevent the cotton or other fibrous material from working its way out of the hopper and flying around the machine.

Having now described the invention and one form in which it may be conveniently constructed and applied, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for compressing fibrous or other material, the combination with a slotted cap-plate, of an independently-supported hopper arranged over such slotted cap-plate, and mechanism for rotating such hopper; substantially as and for the purpose set forth.

2. In a machine for compressing fibrous or other material, the combination with a slot-

ted cap-plate and a forming-chamber, and mechanism for relatively rotating said cap-plate and forming-chamber, of an independently-revoluble feed-hopper, and mechanism for actuating the same; substantially as and for the purpose set forth.

3. In a machine for compressing fibrous or other material, the combination of a slotted cap-plate and a forming-chamber, and mechanism for rotating such forming-chamber, with a revoluble feed-hopper, and mechanism for causing the revolution of the same; substantially as and for the purpose set forth.

4. In a machine for compressing fibrous or other material, the combination of a slotted cap-plate and a forming-chamber, and mechanism for relatively rotating such cap-plate and forming-chamber, with a feed-hopper superposed with reference to the cap-plate, gear-teeth connected with the hopper, and outside gearing meshing with such gear-teeth and driving the same; substantially as and for the purpose set forth.

5. In a machine for compressing fibrous or other material, a chamber or holder for the compressed material, a slotted cap for one end of such chamber, a hopper superposed with reference to such cap-plate, an attachment to the hopper for suspending the same, antifriction-rollers for supporting such attachment, said antifriction-rollers mounted upon a stationary part of the machine, and gearing for rotating the attachment and thus causing the revolution of the hopper; substantially as and for the purpose set forth.

6. In a machine for compressing fibrous or other material, a chamber for the compressed material, a slotted cap for one end of such chamber, and mechanism for relatively rotating such cap and chamber, an independently-supported slatted hopper superposed with reference to the cap-plate, and mechanism for revolving such hopper; substantially as and for the purpose set forth.

7. In a machine for compressing fibrous or other material, a chamber for the compressed material, a slotted cap-plate for one end of such chamber, means for relatively rotating said chamber and cap, a revoluble hopper, antifriction-rollers supported near the top of the machine, a ring connected with the hopper and provided with an annular way or track, adapting such ring to revolve upon such antifriction-rollers, and teeth forming an annular rack, in combination with the hopper and with mechanism engaging the teeth on the ring for revolving the same; substantially as and for the purpose set forth.

8. In a machine for compressing fibrous or other material, a chamber for the compressed material, a slotted cap-plate for one end of such chamber, means for relatively rotating such cap-plate and chamber, a hopper, a support for such hopper comprising an upper ring from which the hopper is suspended, a lower ring having a bearing or track adapting it to revolve, and standards or pillars connecting such rings, with rollers upon the main frame for supporting said last-mentioned ring, and mechanism for revolving the same; substantially as and for the purpose set forth.

9. In a machine for compressing fibrous or other material, the combination of a slotted cap-plate and a chamber for the compressed material, and means for relatively rotating such cap-plate and chamber, with an independently-supported revoluble hopper, and mechanism for causing such revolution, connected with and actuated by the mechanism for giving relative rotation to the cap-plate and chamber; substantially as and for the purpose set forth.

10. In a machine for compressing fibrous or other material, the combination of a slotted cap-plate, a chamber for the compressed material, mechanism for relatively rotating said chamber and cap, a revoluble hopper superposed with reference to the cap-plate, and mechanism for giving movement to the same, with a stationary cage surrounding the lower end of such hopper; substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand this 18th day of August, 1899, in the presence of the subscribing witnesses.

JAMES A. BUTLER.

Witnesses:
DANIEL W. HOWLAND,
ROBERT F. FISKE.