

No. 645,720.

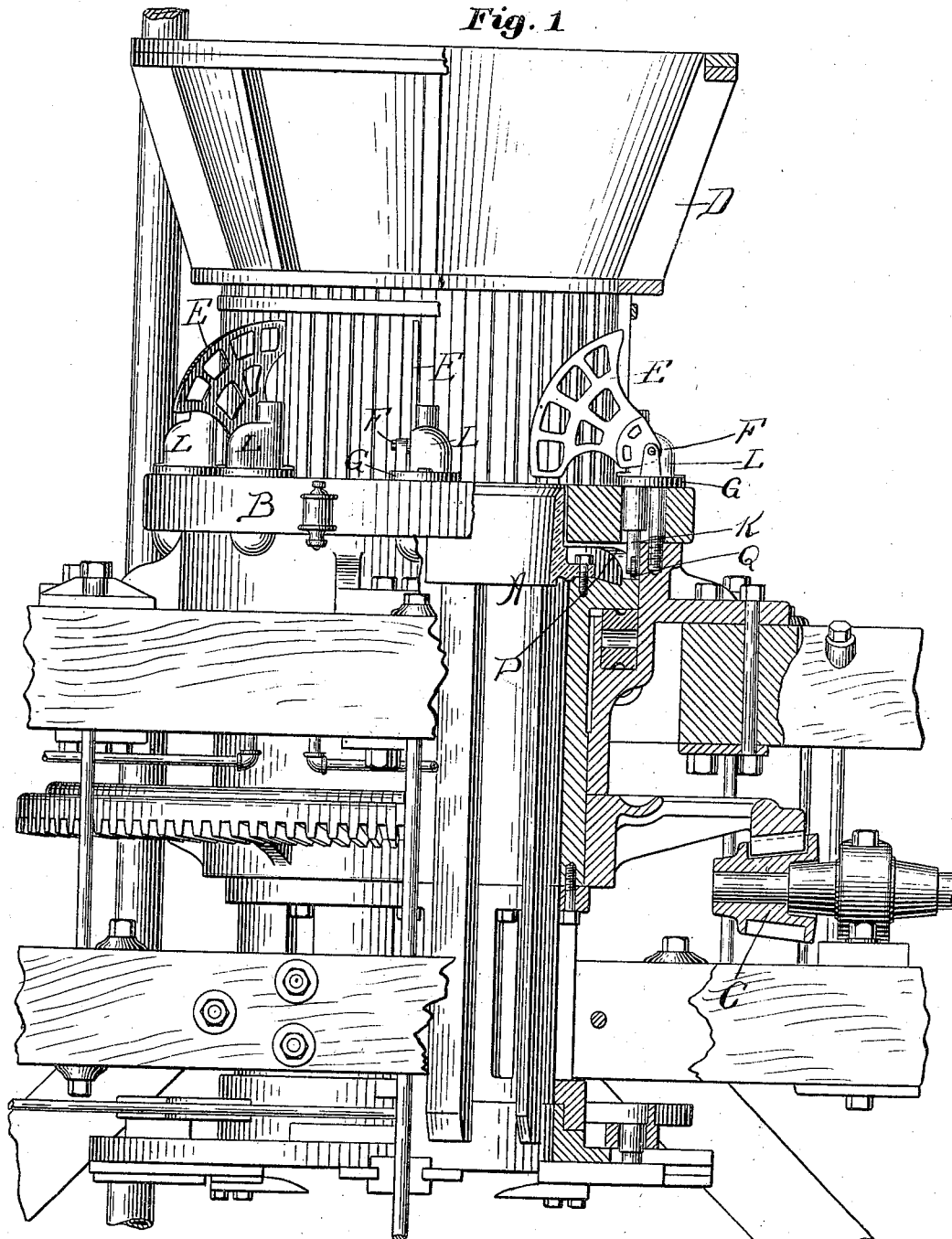
Patented Mar. 20, 1900.

W. M. HOLMES & J. A. BUTLER.  
FEEDING DEVICE FOR PRESSES.

(Application filed Sept. 1, 1899.)

(No Model.)

2 Sheets—Sheet 1.



**Witnesses:**

*Walter E. Lombard*  
*J. B. Weir*

**Inventors**  
*W. M. Holmes,*  
*J. A. Butler,*  
*By Brown & Derby, Attys*

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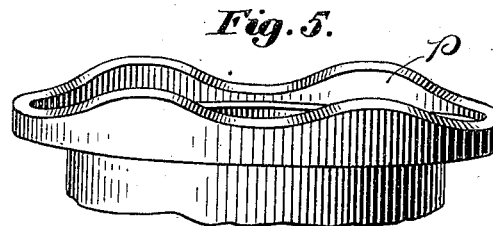
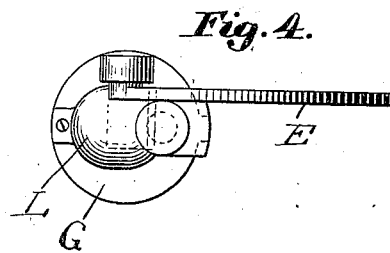
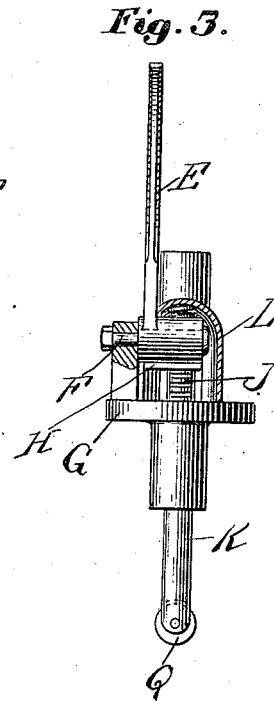
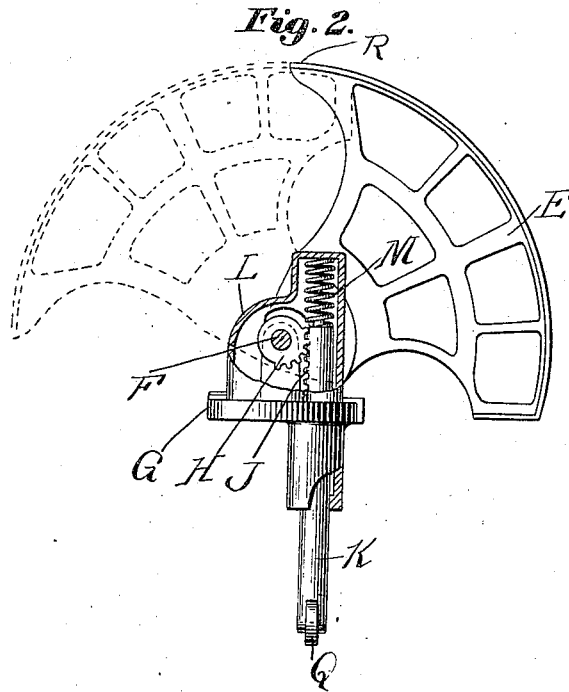
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(No Model.)

2 Sheets—Sheet 2.



Witnesses:  
Walter O. Lombard  
J. B. Klein

Inventors  
W. M. Holmes,  
J. A. Butler  
By *Proctor & Knapp*

# UNITED STATES PATENT OFFICE.

WATSON M. HOLMES, OF HOOSIC FALLS, NEW YORK, AND JAMES A. BUTLER,  
OF WAREHAM, MASSACHUSETTS, ASSIGNORS TO THE PLANTERS COM-  
PRESS COMPANY, OF BOSTON, MASSACHUSETTS.

## FEEDING DEVICE FOR PRESSES.

SPECIFICATION forming part of Letters Patent No. 645,720, dated March 20, 1900.

Application filed September 1, 1899. Serial No. 729,248. (No model.)

*To all whom it may concern:*

Be it known that we, WATSON M. HOLMES,  
residing at Hoosic Falls, in the county of Rens-  
selaer and State of New York, and JAMES A.  
BUTLER, residing at Wareham, in the county  
of Plymouth and State of Massachusetts, citi-  
zens 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 con-  
struction embraced in and covered by the  
generic invention and claims of an applica-  
tion of George A. Lowry for feeding devices  
for presses, executed May 27, 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 embodies a modified form of  
a construction set forth, described, and  
claimed in a companion application filed by  
George A. Lowry and Watson M. Holmes,  
dated September 1, 1899, Serial No. 729,246;  
and it consists, substantially, in the construc-  
tion, combination, location, and relative ar-  
rangement of parts, all as will be more fully  
hereinafter set forth, as shown in the accom-  
panying 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 ele-  
vation, parts in longitudinal section and parts  
broken off, of a press, showing the application  
thereto of a construction embodying the prin-  
ciples of our invention. Fig. 2 is a detached  
detail view, in side elevation, of a feeder-arm  
and its operating connections, a displaced po-  
sition being indicated by dotted lines. Fig.  
3 is an edge view of the construction shown  
in Fig. 2. Fig. 4 is a plan view of the same.  
Fig. 5 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.

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 and in  
the form shown, to which the invention is  
not limited, the head-plate is held station-  
ary, while the chamber is mounted to ro-  
tate. Rotation may be imparted to the ro-  
tating 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 ar-  
ranged 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  
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. There-  
fore if additional material is presented to the  
slot or slots and in such close proximity there-  
to as to be brought into contact with the sur-  
plus 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 en-  
gaged 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 cham-  
ber by each spiral layer added as an incre-  
ment 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 embody in their 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, the invention is not limited, 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, or the like, and is supplied in large quantities 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 arranged adjacent to the edge of the head-plate and 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 said supporting-plates are mounted on the supporting-frame of the stationary head-plate. Formed on or connected with the hub of such feeder-arm is a gear H, arranged to be engaged by or to mesh with a rack-gear J, formed on or carried by 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. The rod K is acted upon by a spring M, the tension of which is exerted in a direction to oppose the endwise movement of said rod and to maintain such relative positions of the rack J and gear H as to normally hold the feeder-arm rocked toward the head-plate to its fullest extent. Therefore when the rod K is projected endwise the feeder-arm is withdrawn or rocked away from the head-plate and against the action of spring M. We have shown a convenient arrangement of spring M, wherein it bears at one end against the inner surface of a cap L and at the other end against the end of rod K. The cap L serves to inclose the gear H and rack J, thereby protecting the same from being clogged with the loose material supplied to the press. By this construction we secure a direct connection between the operating-rod K and the feeder-arm, and hence avoid a multiplicity of parts and joints, thus simplifying the construction and rendering the same efficient and easy of operation. 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 track, upon which the rods K rest. The cam-track 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 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 the feeder-arm depended upon to maintain the rod K in contact with the cam-track. We prefer to employ the spring, however, thereby the advance of the feeder-arm to its work after being withdrawn and also the engagement of the rods K with the cam-track are assured.

In order to reduce friction and to secure an easy operation of the device, a friction-roller Q may be mounted on 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 by the rocking or swinging movement of said arms toward the head-plate the loose material is engaged and crowded or pushed toward the head-plate. An efficient and preferable arrangement is to employ a feeder-arm in connection with each slot in the head-plate and to arrange the same 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

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 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 slots composing such basket, as shown in the drawings.

In order that the feeder-arms may be easily withdrawn from the mass of loose material surrounding the same when advanced to its work and 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.

Changes and variations in the details of construction would readily occur to persons skilled in the art and still fall within the scope of our invention.

Having now set forth the object and nature of our invention and a form of construction embodying the same and having described its purpose, function, 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. A feeding device for presses, comprising a pivotally-mounted feed-arm having a gear on the hub thereof, a rod carrying a rack arranged to engage said gear, a spring normally operating to rock said arm into feeding position and means for projecting said rod against

the action of said spring for withdrawing said arm, as and for the purpose set forth.

2. A feeding device for presses, comprising a pivotally-mounted feed-arm, carrying a gear, a rod carrying a rack arranged to engage said gear, a spring arranged to oppose said rod, a cap arranged to inclose these parts to protect the same from dust or the like, and means for projecting said rod, 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 pivotally-mounted feeder-arm carrying a gear on the hub thereof, a rod carrying a rack arranged to engage said gear, a cam-track upon which said rod rests, said rod and cam-track respectively carried by said head-plate and chamber, as and for the purpose set forth.

4. In a press an open-ended chamber, means for rotating the same, and a stationary slotted head-plate, in combination with a feeder-arm pivotally mounted on said head-plate and carrying a gear, a rack arranged to engage said gear, a cam-track carried by said chamber and upon which said rack rests, and a spring arranged to oppose the movement of said rack, 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 the subscribing witnesses.

WATSON M. HOLMES.  
JAMES A. BUTLER.

Witnesses:

WM. M. RHEEM,  
DANL. W. HOWLAND.