

No. 662,451.

Patented Nov. 27, 1900.

G. A. LOWRY.

FEED REGULATING DEVICE FOR PRESSES.

(Application filed Sept. 1, 1900.)

(No Model.)

Fig. 1.

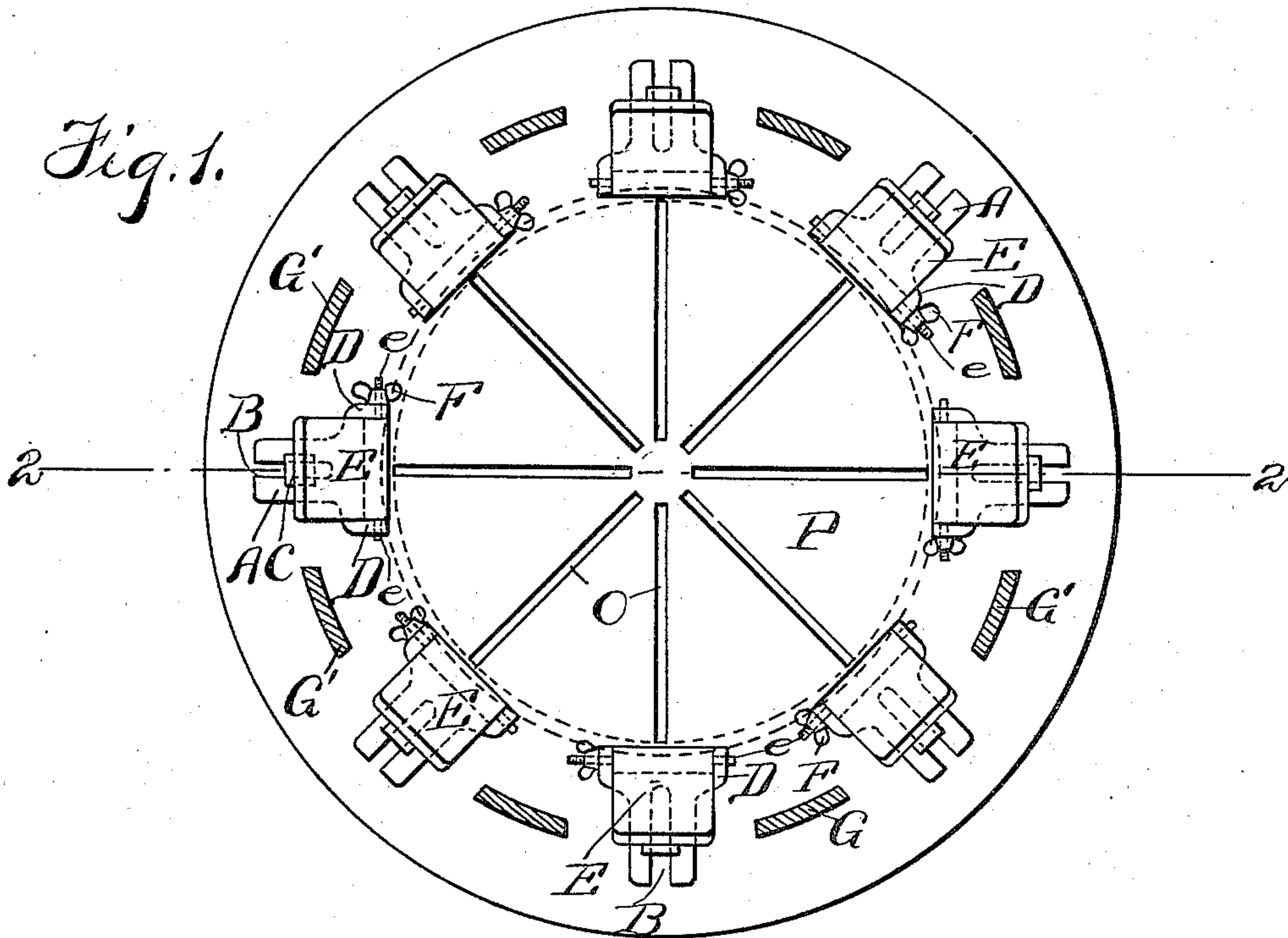


Fig. 2.

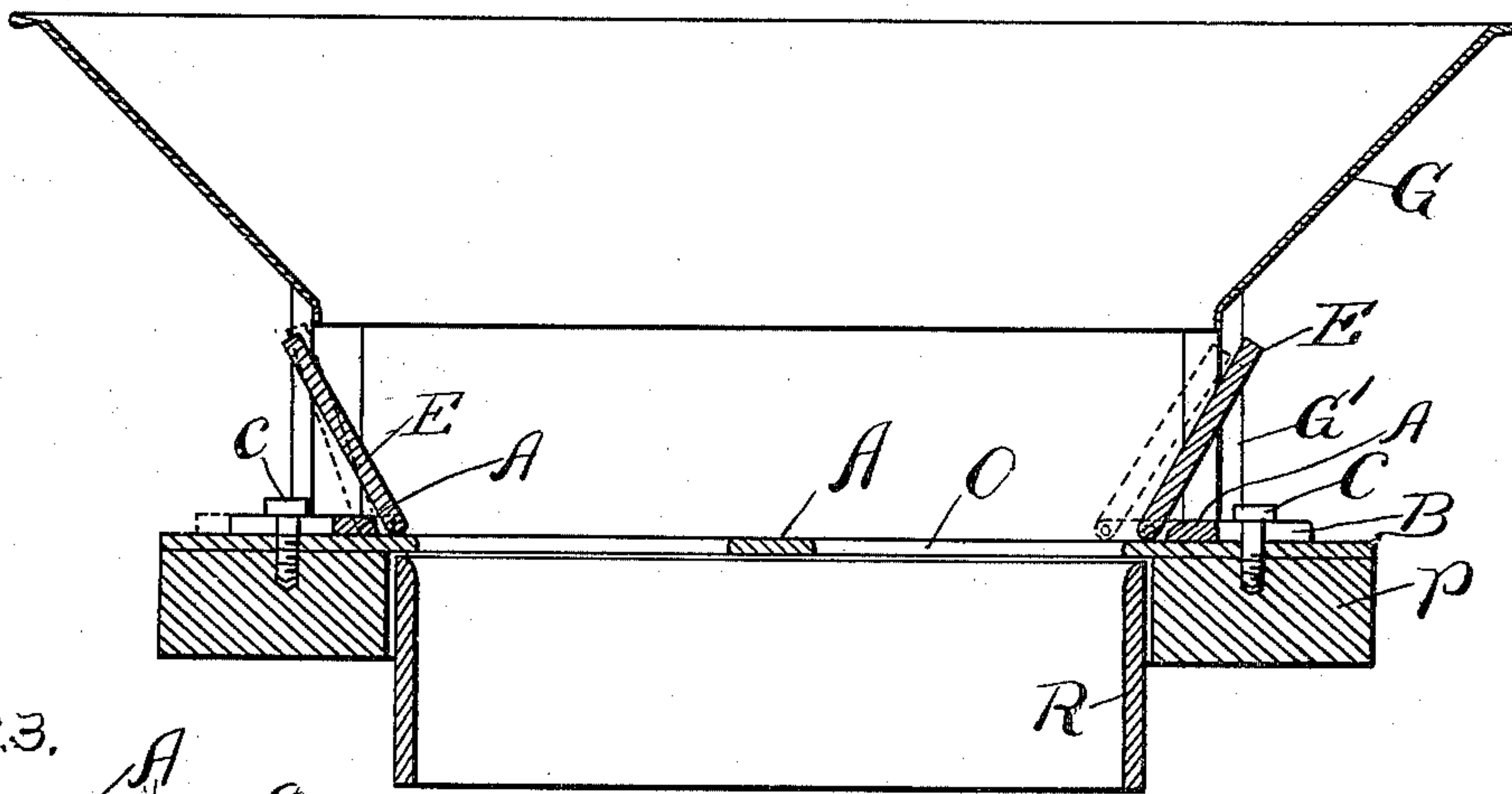
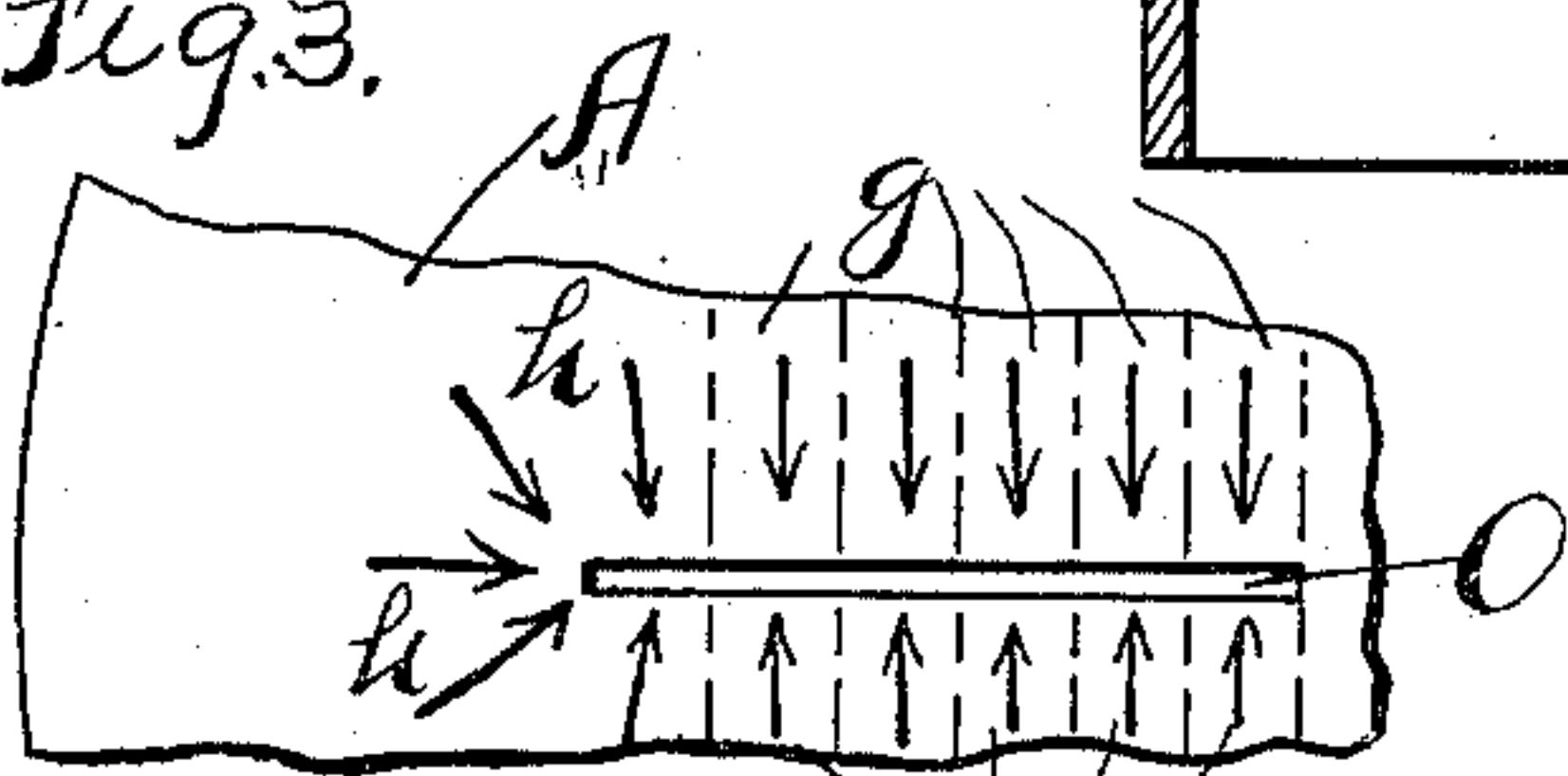


Fig. 3.



Witnesses  
J. M. Rheum  
J. M. Keir

Inventor  
George A. Lowry  
by Brown & Darby

Att'y's



# UNITED STATES PATENT OFFICE.

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

## FEED-REGULATING DEVICE FOR PRESSES.

SPECIFICATION forming part of Letters Patent No. 662,451, dated November 27, 1900.

Application filed September 1, 1900. Serial No. 28,755. (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 Feed-Regulating Devices for Presses, of which the following is a specification.

This invention relates to feed-regulating devices for presses.

The object of the invention is to provide means which are simple and efficient whereby the feed of material to be compressed to the compressing apparatus may be so regulated that the density of the material at the periphery of the compressed mass may be regulated and varied, as desired.

The invention consists substantially in the construction, combination, location, and arrangement, 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 top plan view of a slotted cap-plate of a press, showing the application of a construction embodying the principles of my invention, the hopper-supports being shown in transverse section. Fig. 2 is a central sectional view taken on the line 2 2, Fig. 1, showing the slotted cap-plate, the compression-chamber, and the hopper, and the application of a construction embodying my invention. Fig. 3 is a broken detail diagrammatic view illustrating the feeding action of a press.

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

In my prior patents, Nos. 581,600 and 581,601, granted April 27, 1897, and Nos. 630,369 and 630,374, granted August 8, 1899, I have shown, described, and claimed a type of press embodying in its general construction a slotted cap-plate or head and a compression chamber or holder, these parts being mounted for relative movement. In the practical operation of a press embodying these general features the compression cham-

ber or holder is first filled by hand or otherwise with a suitable filling material to a point such as to enable the filler to exert some pressure against the inner surface of the cap-plate or head. The material to be compressed is then fed or otherwise suitably delivered to or adjacent to the slot or slots in the head-plate or cap, and the fibers thereof are caught or engaged by the material previously introduced to the compression chamber or holder and which bulges up into the slot or slots, and such additional or loose material is thereby drawn through the slot or slots into the compression chamber or holder in the form of thin sheets, which are compressed, flattened, and condensed during the passage thereof through the slot or slots and from which the air is expelled, and by reason of the relative movement of the cap-plate or head and the chamber or holder these thin condensed sheets are superposed upon the mass contained in the chamber or holder and upon themselves in layers, thus building up the mass endwise, each layer or thin sheet thus added correspondingly advancing the mass through the chamber or holder, the resistance opposed to this advancement of the mass through the chamber serving to effect and maintain a compression of the layers or sheets upon each other and to prevent reexpansion of the compressed column or mass endwise.

The present invention relates to a press of this type, and referring to the accompanying drawings, P designates the slotted cap-plate or head, and R the compression chamber or holder, these parts being mounted for relative movement in the manner set forth in the patents above referred to.

In the practical operation of a press embodying these generic principles the tendency is for a greater quantity of the loose material to be drawn through a feed-slot and into the chamber at the outer end of the slot than toward or at the inner end. This tendency is due to the fact, in the first place, that by reason of the greater radius the relative movement of the cap-plate and of the compressed mass within the chamber increases from the center outwardly and is greatest at the outer ends of the slots, and



hence more material is necessarily drawn into the chamber at this point. In the second place, the slots draw from a greater area at the outer ends thereof than is the case toward the inner ends of such slots. This is clearly illustrated in the diagram at Fig. 3, wherein the spaces *g* on opposite sides of the slot supply the material to the slot only in lines at right angles to the edges or lips of the slots, as indicated by the arrows, whereas at the outer end of the slot the material is also drawn from the space *h*, which radiates from the outer end of the slot, as clearly indicated. The result of this greater supply of material at the outer end of the slot is to produce a compressed column which is of increased density toward or at the outer surface or periphery thereof. It is desirable to regulate the feed of the material through the slot or slots, and particularly at the outer end or ends thereof, so as to vary, regulate, and control the degree of density of the compressed column at the outer surface or periphery thereof, as desired, and according to the quality and condition of the material.

It is the special purpose of the present invention to provide means for accomplishing this desirable end, and in the accompanying drawings I have shown a construction and arrangement illustrative of the principles involved.

In the particular form and construction illustrated I mount what I shall term a "deflector" *E* at or adjacent to the outer ends of the slots *O* of the cap-plate, and I provide means for adjusting the angle of inclination of such deflector with reference to the slot, and I also make provision for the adjustment of said deflector toward and from the extreme outer end of the plate.

In carrying out my invention I employ a plate *A*, formed with a slot *B*, through which passes a securing-screw *C*, by which said plate may be adjustably secured to the cap-plate *P*. The plate *A* is mounted on the cap-plate *P* in line with the feed-slot *O* therein adjacent to the outer end thereof and is capable of adjustment toward and from such outer end, as clearly shown in Figs. 1 and 2, by loosening the securing-screw *C* and shifting such plate and then setting up on the screw again. Each plate *A* is provided at the inner end thereof with ears *D*, having holes therethrough in which are received suitable trunnions or projections *e*, formed on or carried by a deflector *E*. By swinging the deflector about its trunnion the degree of its angle of inclination with reference to the feed-slot *O* may be varied or regulated. The deflector may be held in adjusted position in any suitable or convenient manner—as, for instance, by threading one of the trunnions *e* thereof to receive a clamp-nut *F*, which by being turned up against the outer surface of the ear *D* will operate to bind or hold the deflector in any desired adjustment of position or inclination. The material to be compressed

may be directed to the feed-slots of the cap-plate in any suitable or convenient manner, as by means of the hopper *G*, which, if desired, may be supported upon the legs *G'*.

The operation will be fully understood from the foregoing description. By adjusting the deflectors well over the outer ends of the feed-slots, as shown in dotted lines to the right in Fig. 2, the supply of material to the outer ends of the slots is restricted, the deflector preventing the feed of material from the space indicated at *h* in Fig. 3, and for this reason and the additional reason that in this position the deflector is projected over the outer end of the slot, and hence the diameter of the compression-chamber is greater than the length of the uncovered or unprotected part of the slot, and hence less material would be supplied to the outer or peripheral surface of the compressed column, and therefore such outer or peripheral surface of the compressed column will be of less density than would be the case otherwise. When the deflector is in retracted position, as shown in dotted lines to the left of Fig. 2, a greater quantity of material is permitted to be drawn into the slots at the outer ends thereof, and hence the outer or peripheral surface thereof will be of greater density, and by suitably adjusting the deflector-plate back and forth and the inclination thereof the degree of density or hardness or softness of the compressed column at the outer or peripheral surface thereof may be regulated as may be desired or to suit different grades, qualities, or conditions of material.

While I have shown a specific construction and arrangement for accomplishing the objects in view, I desire it to be understood that the construction may be varied in many ways without departure from the spirit and scope of my invention. I do not desire, therefore, to be limited or restricted to the exact details of construction and arrangement shown and described; but,

Having now set forth the object and nature of my invention and a construction and arrangement embodying the principles thereof and having described such construction, its purpose, function, and mode of operation, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—

1. In a press, the combination with a slotted cap-plate, of means for controlling the feed of material through the slot in said head-plate, whereby the density of the compressed material may be varied, as and for the purpose set forth.

2. In a press, a slotted cap-plate, in combination with means for controlling the supply of material through the outer end of the slot in the cap-plate, whereby the density of the compressed material at the outer or peripheral surface thereof may be varied, as and for the purpose set forth.

3. In a press, a compression-chamber and



a slotted cap-plate, in combination with means for adjustably regulating the feed of the material to be compressed through the outer end of the slot in the cap-plate, as and for the purpose set forth.

4. In a press, a slotted cap-plate, in combination with a deflector, and means for adjusting said deflector, as and for the purpose set forth.

5. In a press, a slotted cap-plate, in combination with a deflector, and means for varying the inclination of said deflector relative to the slot in said cap-plate, as and for the purpose set forth.

6. In a press, a slotted cap-plate, in combination with a deflector arranged adjacent to the outer end of the slot in said cap-plate, and means for adjusting said deflector toward and from the end of said slot, as and for the purpose set forth.

7. In a press, a slotted cap or head, in combination with a plate adjustably mounted thereon, and a deflector carried by said plate, as and for the purpose set forth.

8. In a press, a slotted cap or head, in combination with a plate mounted for adjustment toward and from the outer end of the slot in said cap or head, and a deflector carried by said plate, as and for the purpose set forth.

9. In a press, a slotted cap or head, in combination with a plate adjustably arranged adjacent to the outer end of the slot in said cap or head, and a deflector pivotally mounted

upon said plate, as and for the purpose set forth.

10. In a press, a slotted cap or head, in combination with a plate adjustably arranged adjacent to the outer end of the slot in said cap or head, a deflector pivotally mounted in said plate, and means for securing said plate at any desired angle of inclination, as and for the purpose set forth.

11. In a press, a slotted cap or head, in combination with a plate adjustably mounted with reference to the outer end of the slot in said cap or head, said plate provided with ears, a deflector having pintles adapted to be received in said ears, and means for clamping said deflector in any desired inclination, as and for the purpose set forth.

12. In a press, a compression-chamber, a slotted cap-plate therefor, and a hopper for directing the material to be compressed to the slot in said cap-plate, in combination with a deflector for regulating the supply of material to the outer end of said slot, and means for adjusting said deflector, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 28th day of August, 1900, in the presence of the subscribing witnesses.

GEORGE A. LOWRY.

Witnesses:

GUY CUNNINGHAM,  
WM. M. RHEEM.