

No. 630,371.

Patented Aug. 8, 1899.

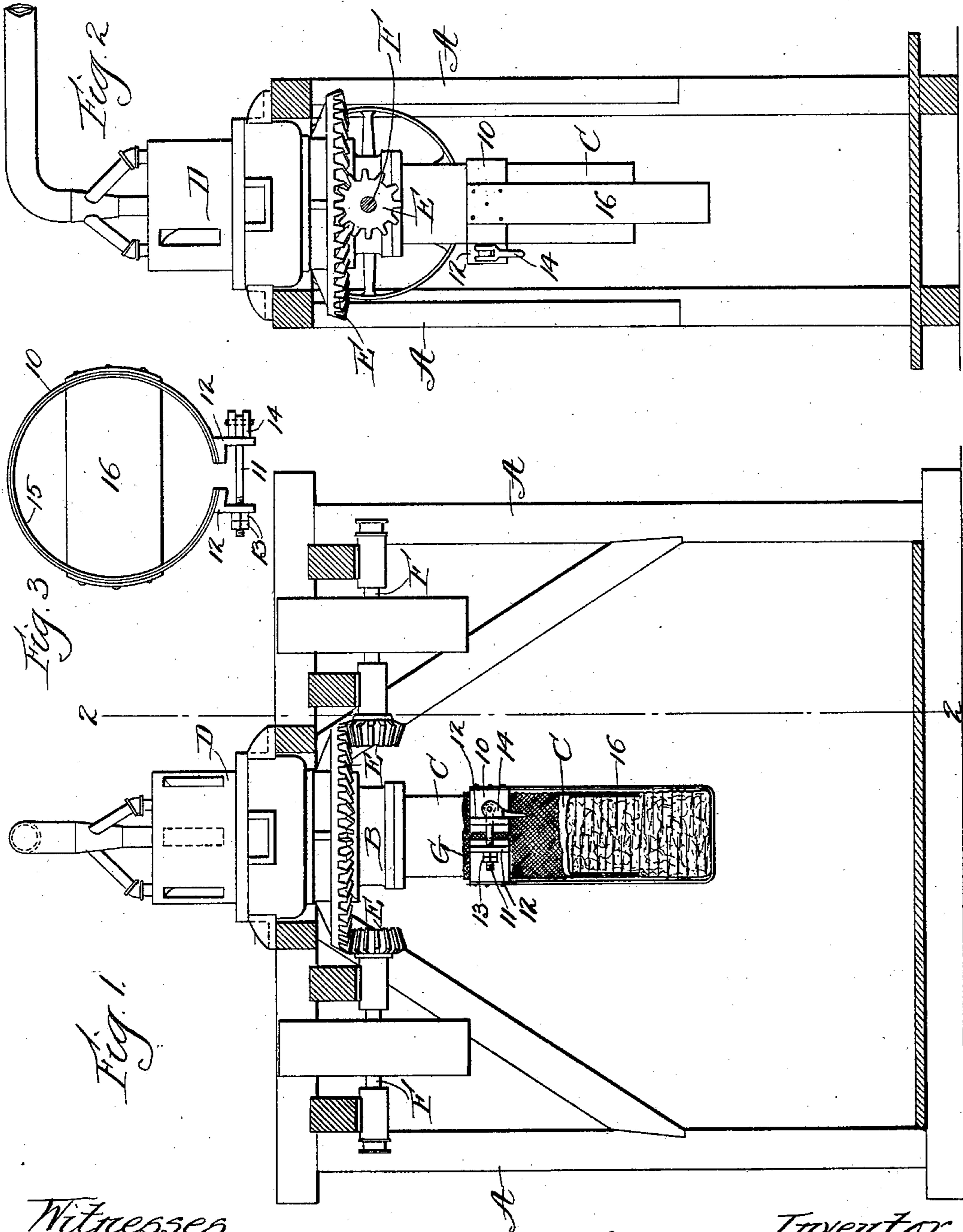
G. A. LOWRY.

BALE SUPPORTING DEVICE FOR PRESSES.

(Application filed Apr. 19, 1897. Renewed Jan. 6, 1899.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
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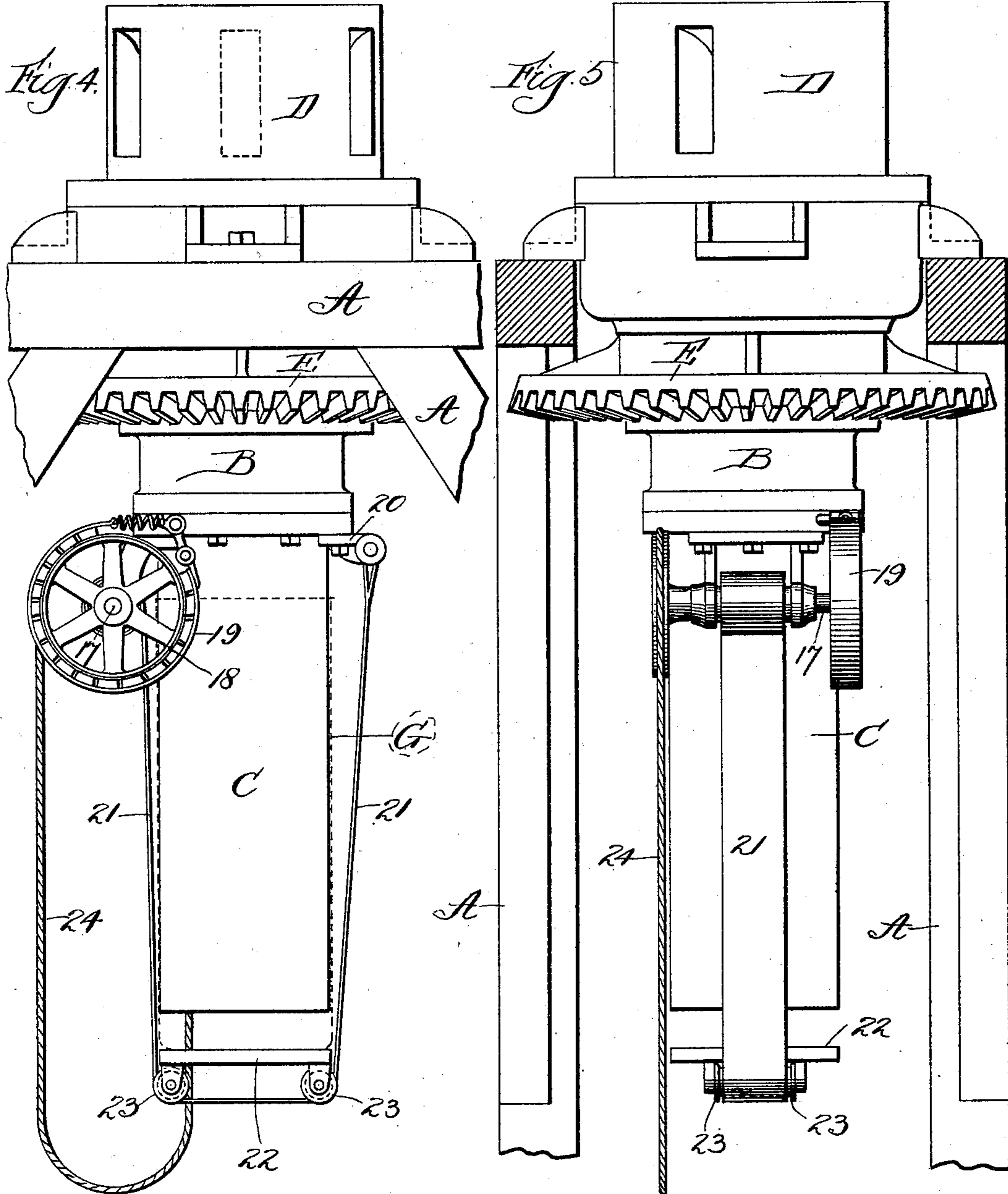
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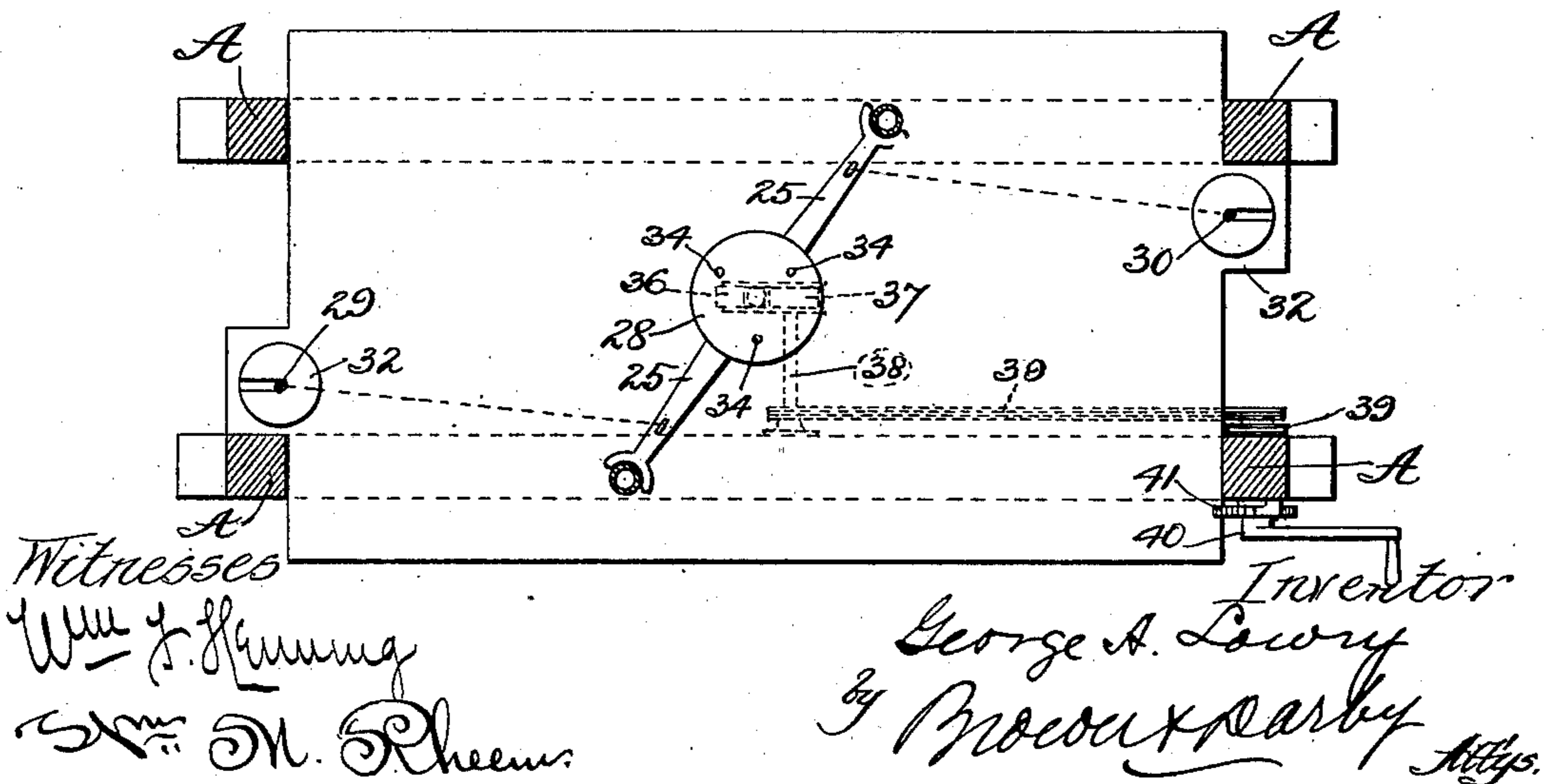
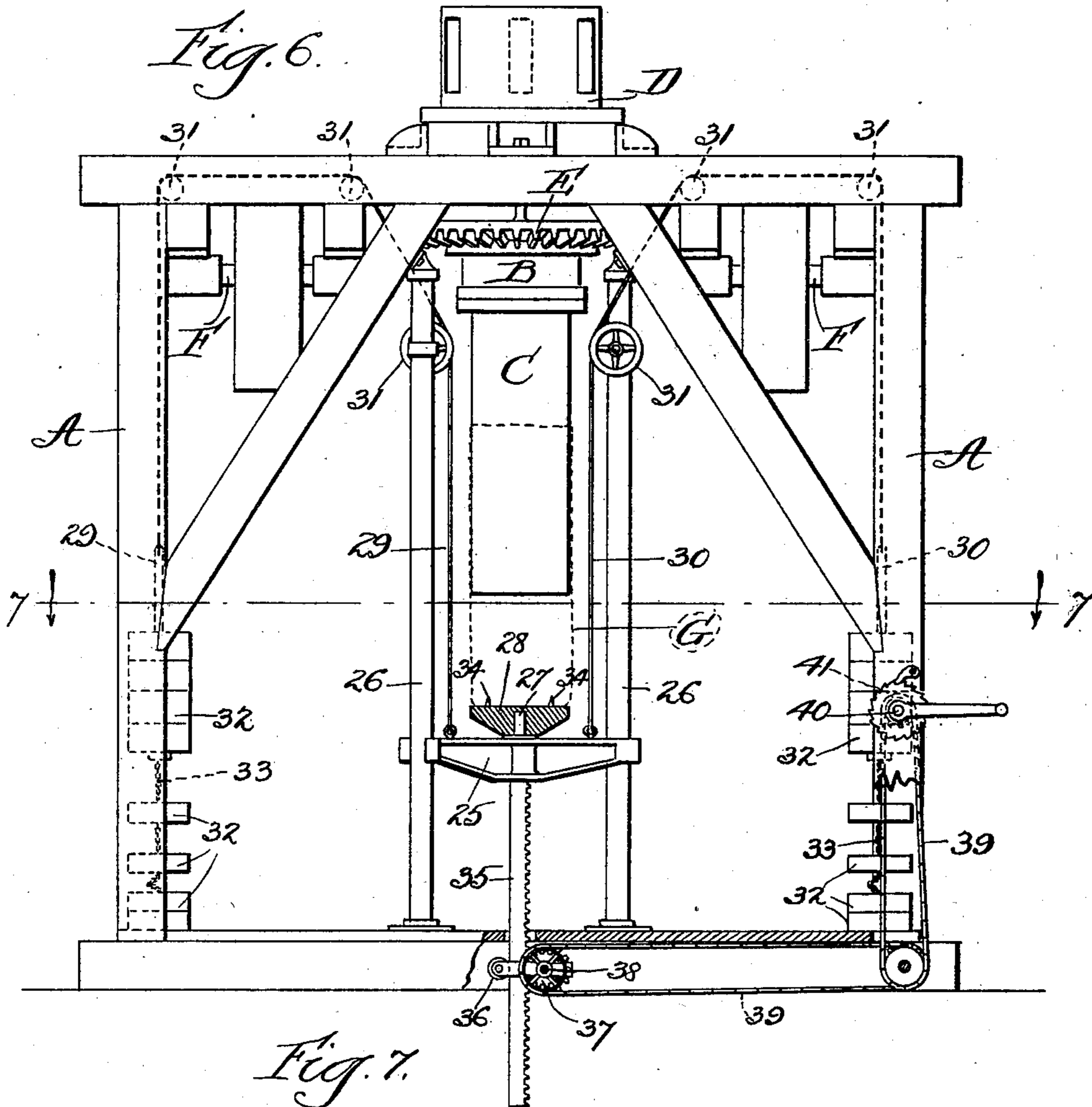
G. A. LOWRY.

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(No Model.)

3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

GEORGE A. LOWRY, OF CHICAGO, ILLINOIS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE PLANTERS COMPRESS COMPANY, OF WEST VIRGINIA.

BALE-SUPPORTING DEVICE FOR PRESSES.

SPECIFICATION forming part of Letters Patent No. 630,371, dated August 8, 1899.

Application filed April 19, 1897. Renewed January 6, 1899. Serial No. 701,412. (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 Bale-Supporting Device for Presses, of which the following is a specification.

This invention relates to bale-supporting devices for presses.

10 The object of the invention is to provide means for supporting the bale as it emerges from the press, and it relates to certain forms of the invention coming under the generic scope of the claims made in application Serial
15 No. 682,947, filed by me June 8, 1898, which said application last mentioned has had transferred to it the broad claims originally filed with this case.

20 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 specifically pointed out in the appended claims.

25 Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in side elevation, parts in vertical section and parts broken out, of a press, showing the application of one form of my invention thereto.
30 Fig. 2 is a vertical transverse sectional view of the same on the line 2 2, Fig. 1. Fig. 3 is a detached detail view in plan of the friction-clamp of the bale-supporter embodying my invention.
35 Fig. 4 is a view in elevation of a press, the framework being broken away, showing a modified form of bale-supporter embodying my invention. Fig. 5 is a similar view of the same looking from the left of
40 Fig. 4, parts of the frame being in vertical section and parts broken away. Fig. 6 is a view in side elevation of a press, parts broken away and parts in vertical section, showing another modified arrangement embodying the principles of my invention. Fig. 7 is a sectional view taken on the line 7 7, Fig. 6, looking in the direction of the arrows.

The same part is designated by the same

reference-sign wherever it occurs throughout the several views.

50 In the drawings, reference-sign A designates a framework of suitable material, form, and arrangement adapting it to support the press. B designates the chamber of the press and having the tubular extension C. Reference-sign D designates the cap-plate through
55 which the material to be pressed is introduced to the press-chamber, E the gear-wheels, and F the drive-shafts by which relative rotation is imparted to the press-chamber and cap-plate, and G the covering or bag to receive
60 the bale, telescoped upon the end of the tubular extension C. These parts may be substantially the same as set forth and claimed in my Patents Nos. 581,600 and 581,601, dated
65 April 27, 1897, and therefore do not require specific description of the construction, function, or mode of operation thereof in the present application. It will be sufficient, there-
70 fore, for a full and complete understanding of the present invention to merely refer to the fact that the material to be pressed is introduced to the press-chamber through the cap-plate D, and the compression of such ma-
75 terial is effected by imparting a relative rotation to the cap-plate and the press-chamber—for instance, by rotating such chamber—the material being drawn into the press-chamber
80 by such rotation and the bale built up endwise in continuous spiral layers, each succeeding layer compressed upon the preceding layers and the friction between the material being compressed and the walls of the press-chamber and of the tubular extension thereof
85 opposing a sufficient resistance to secure the required or desired degree of compression. Thus the bale is gradually formed, and as it forms it is correspondingly advanced through
90 and finally emerges from the lower end of the tubular extension C completely formed and compressed and, as explained in said prior patent, inclosed in its permanent covering or bag, such bag or covering having previously been telescoped upon the end of the tube C.

From the foregoing description it will be readily perceived that the greatest compres-

sion of the bale is endwise thereof, and therefore as the bale emerges from the end of the tubular extension C the bale tends to expand, more or less, endwise. Moreover, as it is the purpose and design to compress material—for instance, cotton—into bales of considerable weight—say of several hundred pounds—it is important to provide means for supporting the bale as it emerges from the press and to prevent endwise expansion thereof after it leaves the press.

In the accompanying drawings I have shown various forms and arrangements of devices embodying the generic conception of means for accomplishing these desired objects.

In Figs. 1, 2, and 3 I have shown one form of means for securing the desired objects and which from the simplicity of its construction and arrangement is advantageous and desirable. In this form I provide a friction clamp or strap 10 in the form of a split ring adapted to be slipped over the tubular extension C of the press-chamber and the ends of such split ring adjustably connected, as by means of a threaded bolt 11, arranged to pass through flanges 12, carried by said ends. By means of said bolt the ends of said ring may be brought closer together or moved farther apart to vary the internal diameter of such ring in order to secure any desired degree of clamping effect upon the tubular extension C. This may be accomplished by mounting set-nuts 13 on one end of said rod, on the outside of the flange 12, carried by one end of the split ring, and pivotally mounting a lever 14, having a cam-shaped surface, on the other end of said rod, on the outside of the other of said flanges 12. From this construction it will be readily seen that by simply rocking the lever 14 the ring or strap 10 may be tightened or loosened about the extension C of the press-chamber. The ring or strap 10 may be provided with a facing 15, of leather or other suitable material, on the inside thereof, in order to increase the frictional grip of said ring or strap upon the extension C. To the ring 10 and preferably at diametrically opposite points thereon are suitably secured the respective ends of a strap 16, thereby forming a loop arranged to extend over the open end of the extension C. This strap 16 may be of any suitable material—say of belting, canvas, leather, rope, or the like—and forms at the base of such loop a support for the end of the bale as it emerges from the press. The friction with which the strap or ring 10 clamps or grips the exterior surface of the extension C serves to hold the base of the loop formed by strap 16 in position not only to form a yielding support for the emerging bale, but also reduces the tendency of the bale to expand endwise as it emerges from the press, and as the bale continues to emerge the ring 10 gradually slips along the extension C.

In Figs. 4 and 5 I have shown a slightly-modified arrangement for attaining the same

objects and wherein I retain the same generic conception. In this construction and arrangement I mount a shaft 17 in suitable bearings formed on or carried by the press-chamber, and on this shaft I arrange a friction-drum 18, around or upon which I mount a friction-strap 19, of any usual or desired construction and arrangement, whereby the rotation of shaft 17 may be opposed by a desirable degree of frictional resistance. To a suitable bracket or projection 20, formed on or carried by the press-chamber, I attach one end of a suitable flexible belt, band, strap, or rope 21, the other end of which is passed around the end of the extension C and thence to shaft 17, to which it is secured, thereby forming a loop over the delivery-mouth of the extension C. This loop may be sufficient to answer the purpose of a support for the bale as it emerges from the press and also to reduce the tendency of the bale to endwise expansion. In practice, however, I prefer to mount in such loop a platform 22, upon which the bale rests and which carries suitable anti-friction-rollers 23, over which the belt or band 21 passes. From this description it will be seen that the emerging bale is supported against a friction which yields as the bale advances. In order that the platform 22 may be returned or the loop formed in the belt or band 21 shortened and also in order that the end support for the bale may be removed from the bale when a sufficient length thereof has been projected from the press, I mount upon shaft 17 a hand-operating cable or rope 24, by means of which said shaft may be rotated at will by hand as occasion therefor may arise and as will be readily seen and understood.

In Figs. 6 and 7 I have shown another modified arrangement embodying the same generic principles above described. In this construction I provide a suitable cross head or beam 25, mounted to slide upon and to be guided by the fixed guide-rods 26. Upon a pin 27, carried by the cross head or beam 25, is journaled to rotate freely a head or platform 28, which forms the support upon which the end of the emerging bale rests. To the cross head or beam 25 and preferably on either side thereof is connected one end of a rope, cable, or other suitable connection 29 30, said ropes or cables being arranged to pass over suitable guide-pulleys 31 and being connected at their other ends to suitable weights 32. From this description it will be seen that I provide a yielding support for the bale as it emerges from the press and that such support is constantly maintained against the forward end of the bale as it emerges by means of the weights 32. As the bale emerges farther and farther it is desirable to increase the resistance to the recession of platform 28 in order to effectively counterbalance the increasing weight of the bale. To this end I provide a series of weights 32, connected to-

gether at different points in the length of a chain or other suitable connection 33. Therefore as the bale emerges farther and farther the platform 28 recedes farther and farther, and hence the weights 32 are successively raised, thereby increasing the resistance as the weight to be resisted increases. Since, as will be seen from the foregoing description, the cross head or beam 25 does not rotate with the press-chamber B or its tubular extension C, it is important that the platform or support 28 rotate freely, and hence said platform is journaled to freely rotate upon the pin 27. In order that this bag or covering G of the bale may not be rubbed threadbare or injured by a rotation of the bale upon the top surface of the platform 28, it is important to insure a rotation of the platform 28 with the bale. To this end, therefore, I provide said platform with the projecting pins 34, which engage the end of the bale, and hence insure the rotation of said platform with the bale. In order to enable the bale when finally a sufficient length thereof has emerged from the press to be removed, I provide the following arrangement: To the cross-head 25 I attach a rack-bar 35, adapted to slide between suitable guide-rollers 36 37, one of which is a gear-wheel, with which the teeth of said rack intermesh, and is mounted on a shaft 38. This shaft is connected by suitable belt connections 39 to a crank-shaft 40, by which said shaft 38 may be rotated, when desired, by hand. The operation of this part of the mechanism is as follows: As the head 25, carrying the platform 28, is moved away from the end of the tubular extension by the emerging bale the rack-bar 35 is also projected endwise. A ratchet mechanism 41 on crank-shaft 40 permits said shaft to freely rotate through the belt connections 39 and the intermeshing of the rack 35 and gear-wheel 37 during the endwise movement of the rack-bar, such ratchet mechanism normally preventing rotation of the crank-shaft 40 in the opposite direction. When the desired length of bale has emerged from the press, the crank-shaft 40 is further rotated by hand, thereby lowering the platform 28 away from the end of the bale, and hence permitting the column of material forming the bale to be broken or cut off to the desired length and removed. The pawl of the ratchet mechanism 41 is then disengaged from the ratchet-teeth with which it engages, and the pull of the weights 32, through connections 29 30, returns the cross-head and platform to the end of the extension C, and the operation then proceeds as before. Of course it will be understood that when the platform 28 is lowered away from the end of the bale in order to permit the desired length of the column of material forming a bale to be broken or cut off the bale, and, in fact, the entire projecting column of material, being one integral body, is supported by the press-chamber through the material contained

therein, which has not yet emerged therefrom.

Of course it will be understood that many variations and changes in the specific details of construction and arrangement of parts 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 details of construction, combination, location, and arrangement of parts shown and described; but,

Having now set forth the object and nature of my invention and various forms of apparatus embodying the principles thereof and having described and set forth the construction, function, and mode of operation of such apparatus, 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, an open-ended chamber and a slotted cap-plate therefor, and means for relatively rotating said chamber and cap-plate, in combination with a band strap or belt arranged over the open end of said chamber and adapted to receive the end of the bale as it emerges from such chamber, and means for yieldingly resisting the receding movement of such belt or band as the end of the bale advances, as and for the purpose set forth.

2. In a cotton or other press, an open-ended chamber and a slotted cap-plate therefor, and means for relatively rotating said chamber and cap-plate, in combination with a ring frictionally clamped to slide upon said chamber, and carrying a strap arranged over the open end of such chamber, as and for the purpose set forth.

3. In a cotton or other press, an open-ended chamber and a slotted cap-plate therefor, and means for relatively rotating said chamber and cap-plate, in combination with a ring adjustably clamped to slide upon said chamber and carrying a strap looped over the open end of such chamber, as and for the purpose set forth.

4. In a cotton or other press, an open-ended chamber having a tubular extension, a slotted cap-plate for one end of said chamber, and means for relatively rotating said chamber and cap-plate, in combination with a split ring adapted to embrace said extension, means for adjustably connecting the ends of said ring, and a belt or band having the ends thereof connected to said ring on opposite sides thereof, and forming a loop arranged to pass across the open end of said extension, as and for the purpose set forth.

5. In a cotton or other press, an open-ended chamber having a tubular extension, and a slotted cap-plate for one end of said chamber, and means for relatively rotating said chamber and cap-plate, in combination with a split ring adapted to be clamped around said ex-

tension, said ring being faced with a suitable
friction material, and a strap having the ends
thereof connected to said ring at diametric-
ally opposite points thereby forming a loop,
5 said loop arranged to pass around the open
end of said extension, as and for the purpose
set forth.

In witness whereof I have hereunto set my
hand, this 17th day of April, 1897, in the pres-
ence of the subscribing witnesses.

GEORGE A. LOWRY.

Attest:

FRANK T. BROWN,
S. E. DARBY.