

(No Model.)

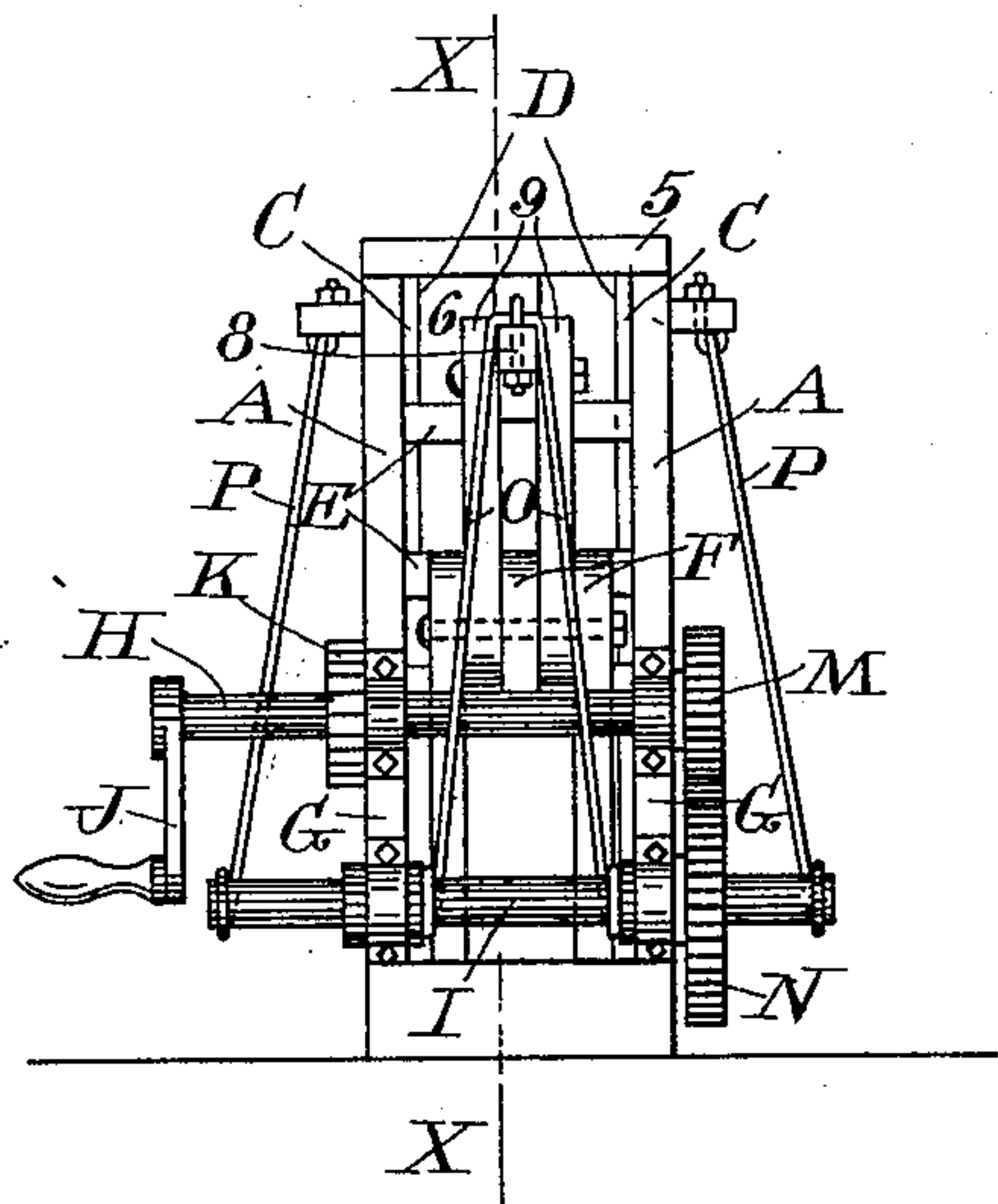
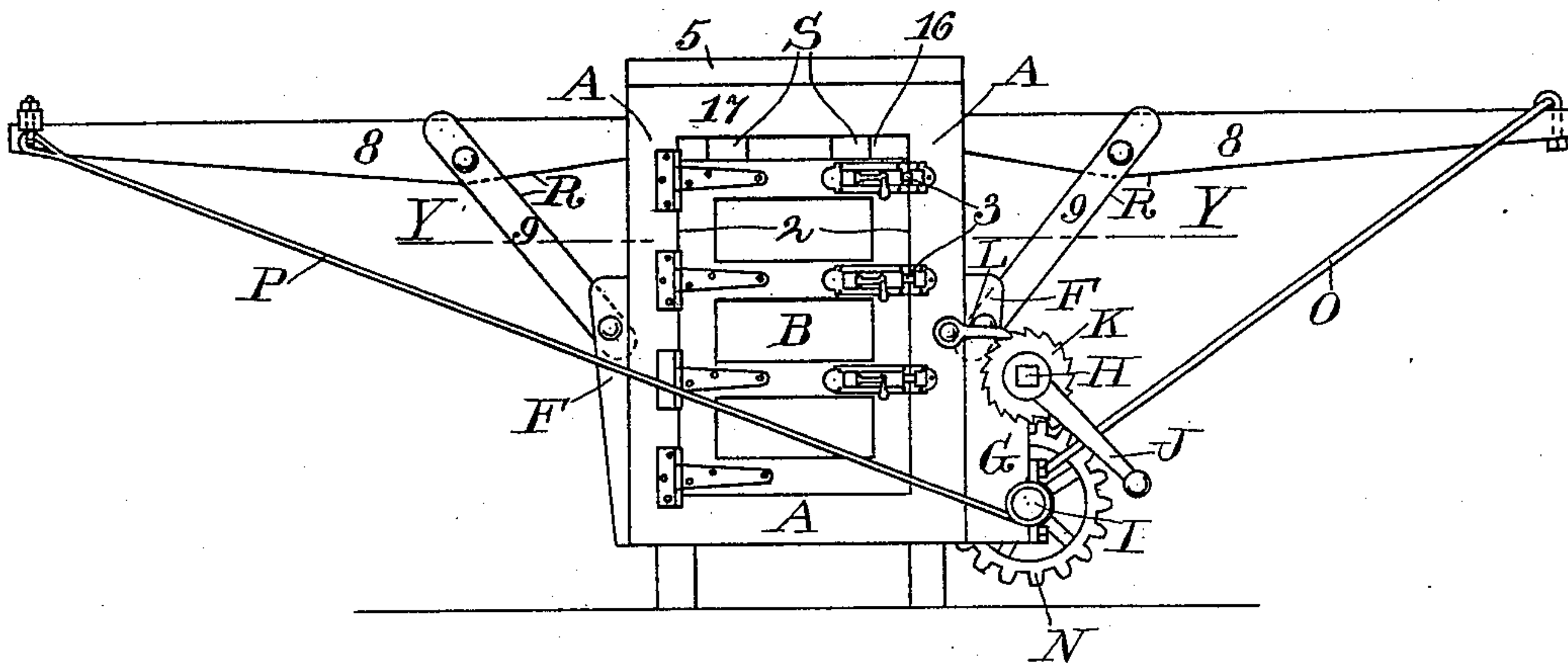
2 Sheets—Sheet 1.

A. ALMY.  
BALING PRESS.

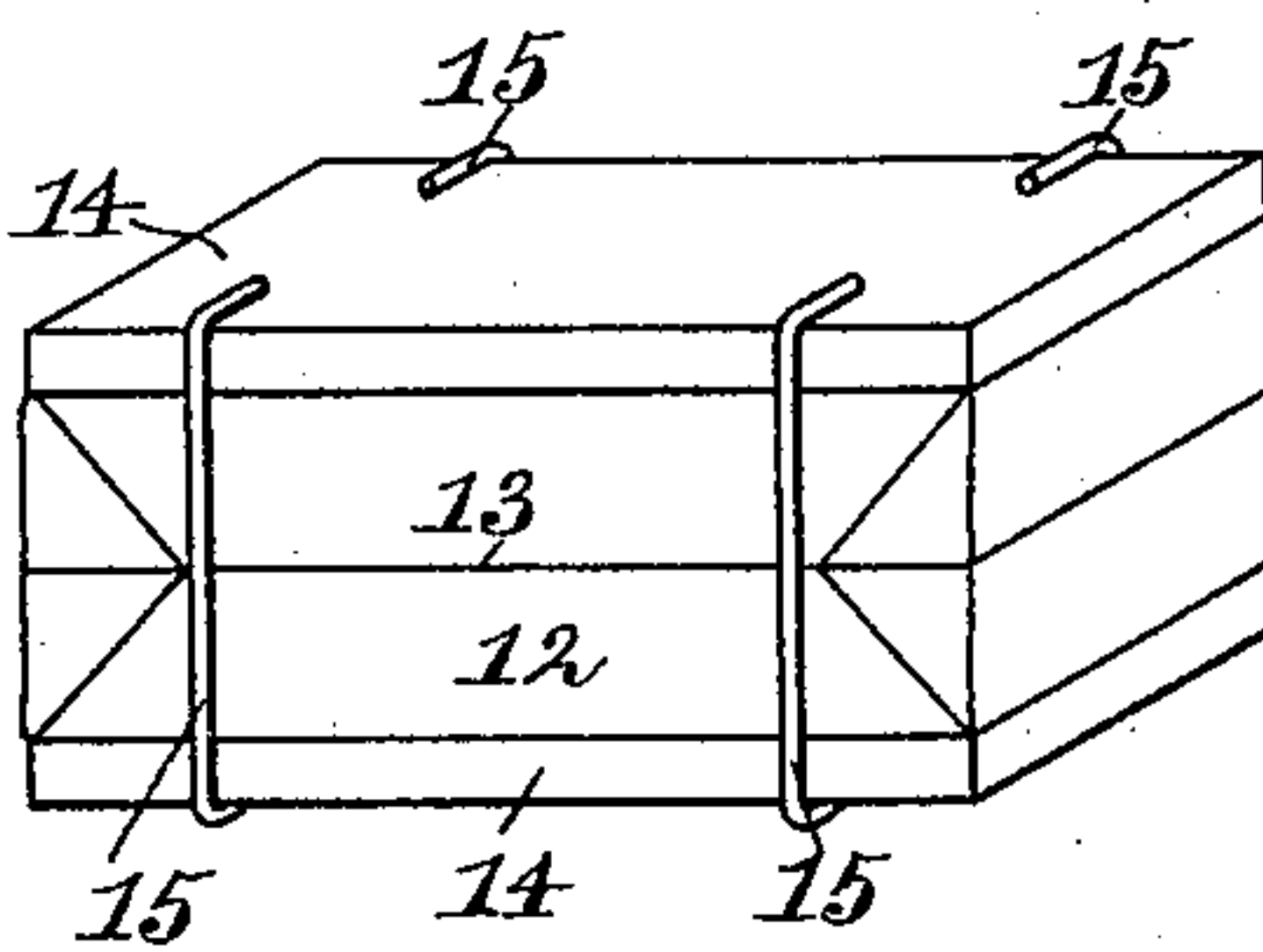
No. 594,771.

Patented Nov. 30, 1897.

*Fig. 1.*



*Fig. 2.*



*Fig. 5.*

*Witnesses:*

J. W. Fisher.  
E. Lueddke

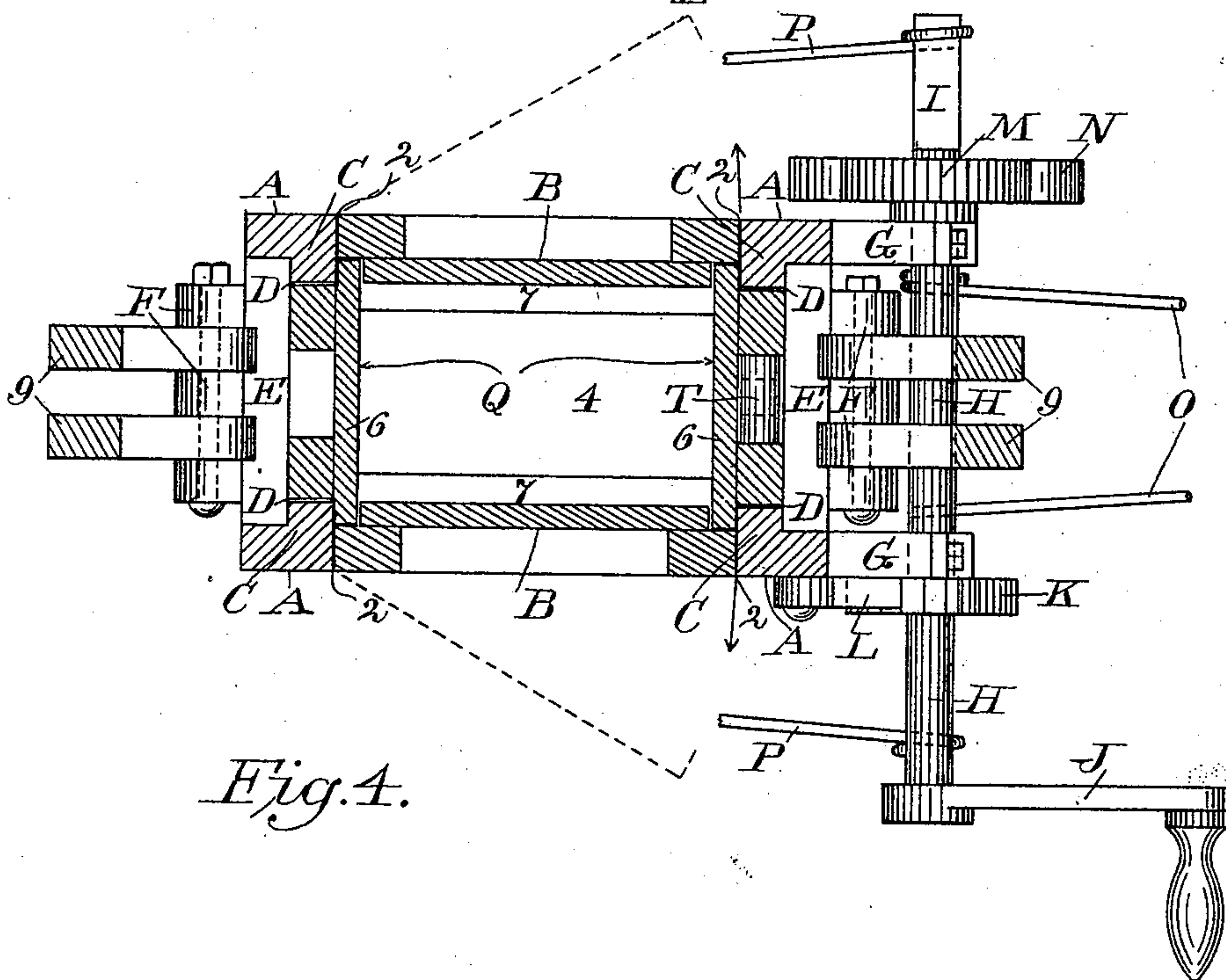
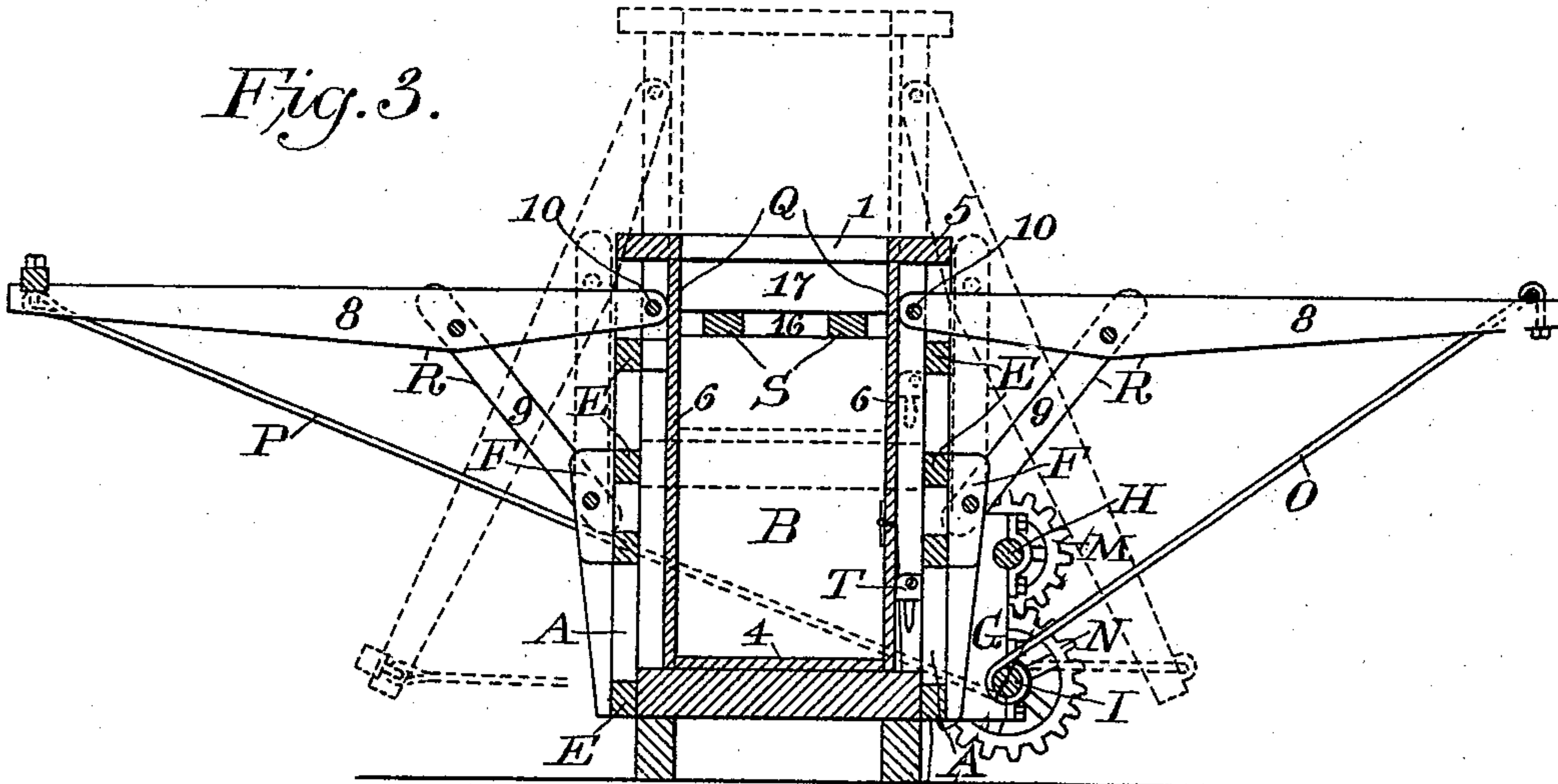
Inventor;  
Arnold Almy.  
by William W. Low,  
Attorney.

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*Fig. 3.*



*Fig. 4.*

Witnesses:

J. W. Fisher.  
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Inventor,

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# UNITED STATES PATENT OFFICE.

ARNOLD ALMY, OF MIDDLEBURG, NEW YORK.

## BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 594,771, dated November 30, 1897.

Application filed September 9, 1896. Serial No. 605,268. (No model.)

*To all whom it may concern:*

Be it known that I, ARNOLD ALMY, of Middleburg, in the county of Schoharie and State of New York, have invented new and useful  
5 Improvements in Baling-Presses, of which the following is a specification.

My invention relates to improvements in baling-presses, but particularly to that class of such presses in which the compressing mechanism moves in a vertical direction; and it consists of the novel construction and arrangement of parts shown in the accompanying drawings and particularly pointed out in the claims contained in this specification.

15 In the accompanying drawings, which are herein referred to and form part of this specification, Figure 1 is a front elevation of a baling-press in which my invention is embodied; Fig. 2, a side elevation of the same; Fig. 3, a  
20 vertical section at the line X X on Fig. 2 with the toggle-joints and movable baling-chamber indicated by dotted lines in position when the baling-chamber is at the highest phase of its movement; Fig. 4, an enlarged horizontal section of my baling-press at the line Y Y on Fig. 1, and Fig. 5 a perspective view of a bale compressed and covered with cloth as removed from the press and before the follower-boards are removed therefrom.

30 My improved baling-press is specially designed for compressing hops into bales ready for shipment, but it can be applied without further invention to compressing hay, straw, and other similar material into bales.

35 As represented in the drawings, A designates the frame of the press, which is usually made of wood and is open at the top, as shown at 1 in Fig. 3, with openings 2 at the front and rear, the latter openings being  
40 closed by swinging doors B, which are hinged to said frame and provided with bolts 3 or other suitable fastenings for securing said doors when occasion requires. The ends of said frame are provided with guides C, which  
45 are spaced apart to form vertical openings D, in which corresponding guides on a movable baling-chamber are fitted to reciprocate. Between the guides C transverse girths E are secured to give strength to the frame and to  
50 afford fastenings for fulcrum-blocks F, to which one member of each toggle-joint is fulcrumed. Brackets G are secured to one

end of the press to form journal-bearings for shafts H and I, by which motion is imparted to the parts of the press which effect the  
55 compression of the material. To one end of the shaft H a hand-crank J or other means for rotating said shaft is secured, and a ratchet-wheel K is also secured to said shaft for the purpose of preventing an untimely reversal  
60 of the direction of the movement of said shaft, and a pawl or dog L is arranged to take against the teeth of said ratchet-wheel to prevent such reversal. A pinion M is secured to the shaft H and meshes into a spur-wheel  
65 N, which is secured to the shaft I. The latter operates as a windlass upon which ropes or chains O and P will be wound, for a purpose herein set forth.

Q designates a movable baling-chamber  
70 that is fitted to slide vertically in the frame A, and so that, when in its raised position, it will project from the upper end of the latter, as indicated by dotted lines in Fig. 3. The lower end of said baling-chamber is provided  
75 with a bottom 4 and the upper end of said baling-chamber has a horizontal flange 5 surrounding it, so that when the baling-chamber Q is at its lower position the flange 5 will bear upon the upper end of the frame A.  
80 Said baling-chamber is composed of a bottom 4 and two sides 6, which are connected together to move as one piece. The front and back of said baling-chamber are formed open, and during the upward movement of the  
85 baling-chamber Q the doors B will form closures for the front and rear of said chamber. The bottom 4 is narrower than the space between the doors B, and thereby openings 7 are formed between said bottom and the doors B,  
90 so that when the press is used for baling hops or other similar products an excess of baling-cloth, placed at the under side of a bale, can be put into said openings to remain during the operation of compressing a bale.  
95

R designates toggle-joints, each of which is composed of a prime lever 8 and a secondary lever 9, which are arranged to impart the required vertical motion to the movable baling-chamber Q. One end of each prime lever  
100 8 is fulcrumed, as at 10, to the movable baling-chamber Q, and the opposite end of each of said levers is connected to a rope, either O or P, according to position, that is arranged



to wind around the shaft I to draw the outer end of the lever 8 downward, as indicated by dotted lines in Fig. 3. The lower end of each lever 9 is fulcrumed to brackets F, secured to the girths E, and the upper end of each lever 9 is jointed to the prime lever 8, that is placed at the corresponding side of the press. The operation of toggle-joints as a means for applying power is too well understood to require a repetition.

The compressed bale shown in Fig. 5 consists of a quantity of hops or other compressible product which is enveloped in sacking 12, which is formed of an upper and a lower piece, which are fastened together by a seam 13 at the middle of the height of the bale, and a press-board 14 at the top and bottom of the bale, said press-boards being temporarily retained in place by means of clamps 15, which are removable from the bale after the sacking 12 is properly fastened to maintain the compressed bale in proper form.

S designates bars that are placed in an opening 16, formed between a pendent cross-piece 17 of the frame A and the upper edge of the doors B, said bars being arranged to form a resistance or abutment against which the bale rests while the press is compressing it.

One side of the baling-chamber Q, near the bottom of the latter, is loosely hinged to the upper part, which is integral with said chamber, and a bent lever T is pivoted to the frame A and is provided with an eccentrically-formed head which bears against said hinged side during the operation of compressing a bale in said baling-chamber. By turning said lever on its pivots the eccentric head of said lever will be drawn back to allow the side to move away from a compressed bale, thereby freeing the latter and leaving it in condition to be readily removed from the press.

My baling-press is operated in the following manner: The movable baling-chamber Q being at the lowest point of its movement, as shown by the full lines on Fig. 3, if hops are to be compressed a press-board 14 is placed in the bottom of said baling-chamber. Then a piece of sacking of suitable size is placed on said press-board and its front and rear edges passed into the openings 7. After the doors B are closed the hops are fed into the baling-chamber until the latter is filled to the top of the doors. Then another piece of sacking, to form a covering for the upper part of the bale, is placed on top of the charge of hops, and another press-board is fixed on the top of said sacking. The bars S are then fixed in place in the openings 16 and motion imparted, either manually or by suitable motive power, to the shaft H, whereby the motion is transmitted to the shaft I, which, acting as a windlass, will wind the ropes O and P around itself until the toggle-joints R are moved into a position (indicated by dotted lines in Fig. 3) which will carry the movable baling-chamber to the highest phase of its movement, and

the compression of the bale will thereby be completed. When this has been attained, the pawl L restrains the shaft H from revolving to release the toggle-joints R, and the pressure will be maintained upon the bale. The doors B are then opened to allow the clamps 15 to be fixed upon the compressed bale, which will then be in condition to be removed from the press and finished by sewing the edges of the sacking together. The movable baling-chamber should then be lowered by revolving the shaft H in a direction reverse to that by which the compression has been effected, and the press is restored to a condition for a repetition of the operation just described.

It will be seen that in my press a plunger (commonly used for compressing the material) is entirely dispensed with, the top of the baling-chamber Q being constantly open for the reception of material which is to undergo compression, and in this respect my baling-press is materially different from any that has preceded it.

When my press is used for compressing hay, straw, or other similar material, the sacking for enveloping the bale is usually omitted from the operations, and the bale is held by the bale-ties usually employed for that purpose.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a baling-press, the combination, with a vertical press-frame provided with an open top and with guides at its opposite ends, and having doors at the front and rear, of a baling-chamber open at top and front and rear, but closed at its bottom, fitted to slide telescopically in the press-frame and having guides that slide in the guides of the press-frame; said baling-chamber being formed to leave openings between its front and rear and the corresponding parts of the press-frame, as and for the purpose specified.

2. In a baling-press, the combination, with a press-frame, A, having an open top and provided with guides, C, and doors, B, of a baling-chamber, Q, arranged to slide telescopically in said press-frame and having a constantly-open top for the reception of material to be compressed, and a flange, 5, which surrounds the upper end of said baling-chamber and which, when said baling-chamber is depressed, will bear upon the top of said press-frame; said baling-chamber being arranged to form openings, 7, between the front and rear of the baling-chamber and corresponding parts of the press-frame, and toggle-joints, R, having one lever jointed to the press-frame A and the other to the baling-chamber Q, as specified.

ARNOLD ALMY.

Witnesses:

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