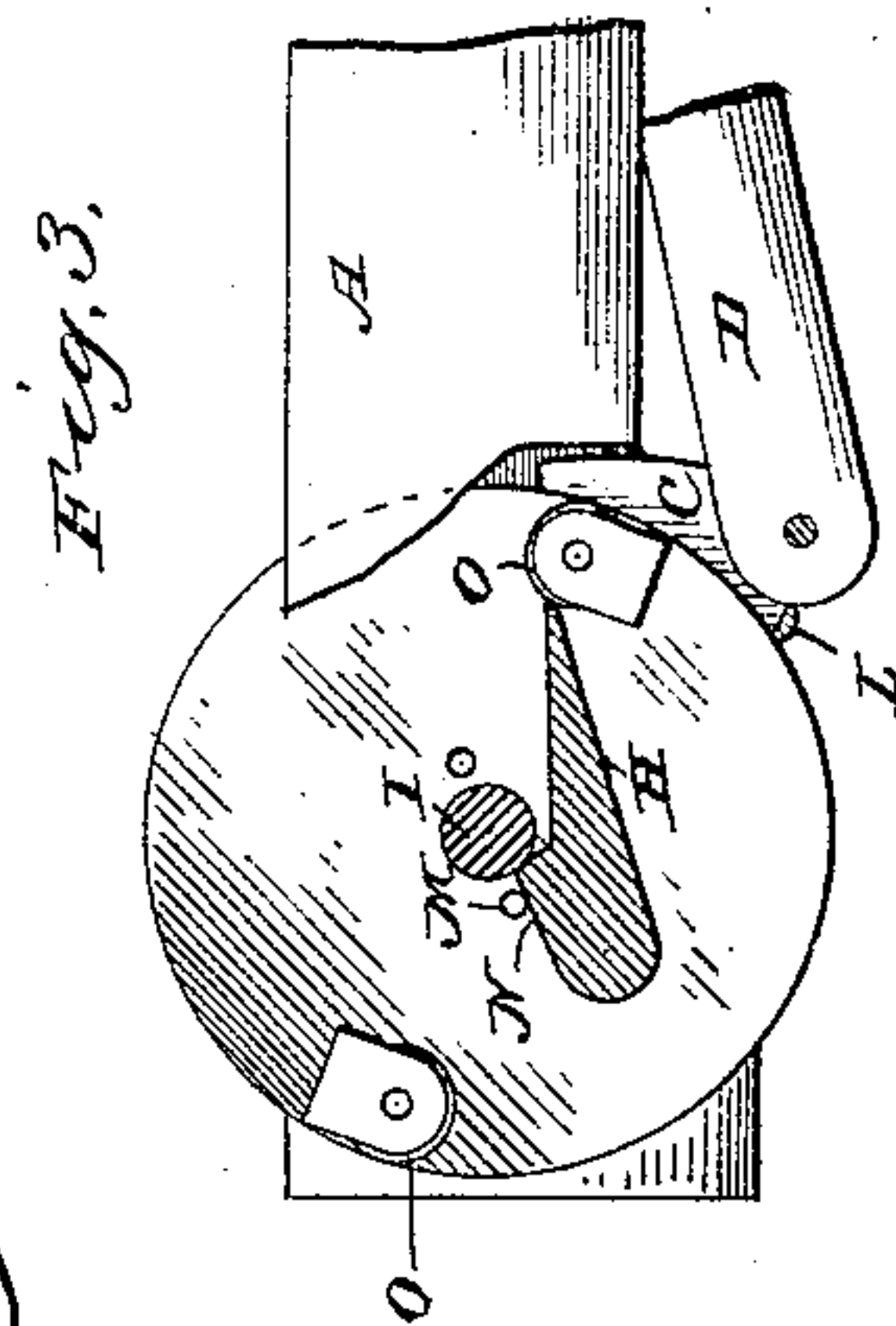
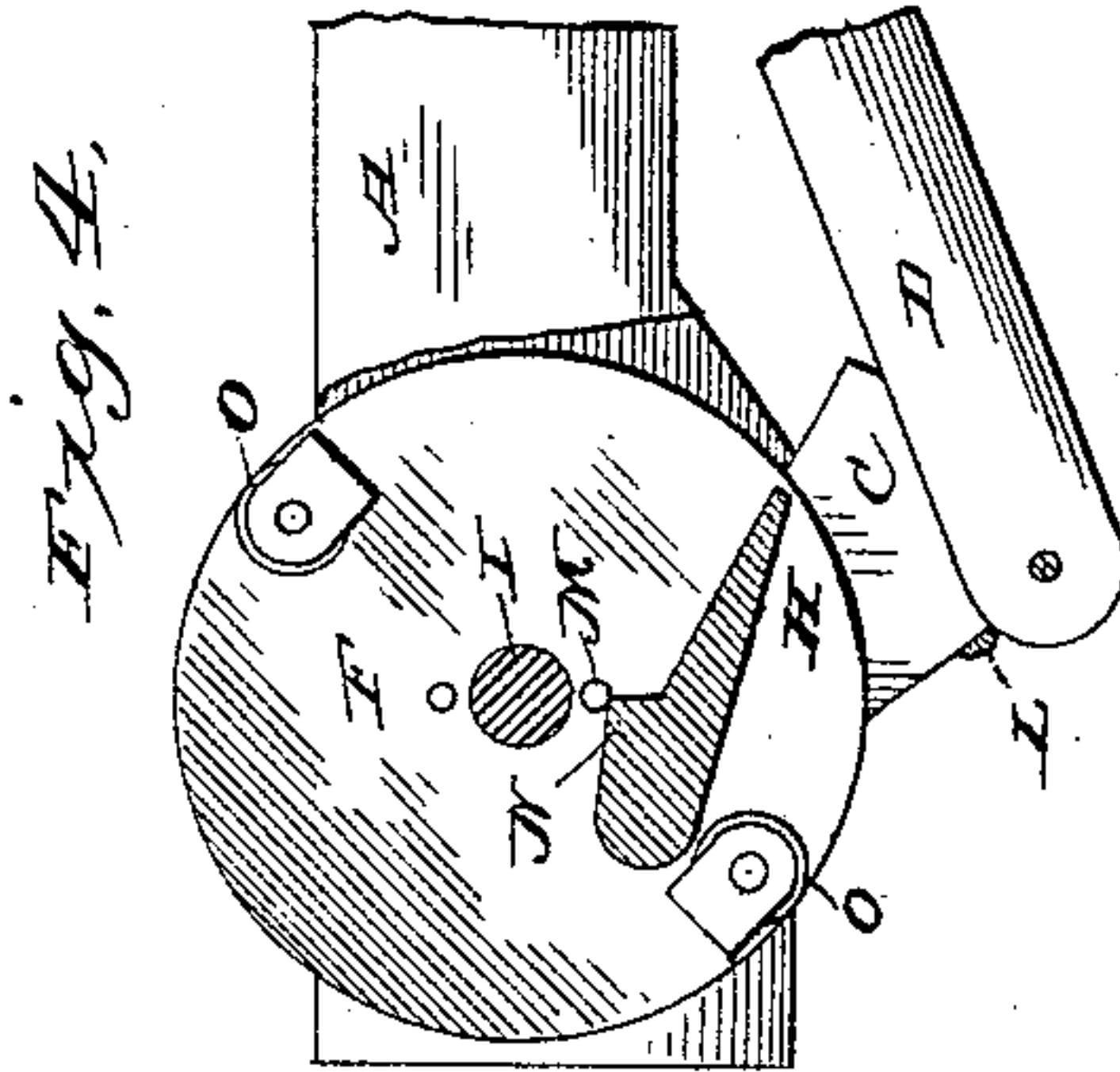
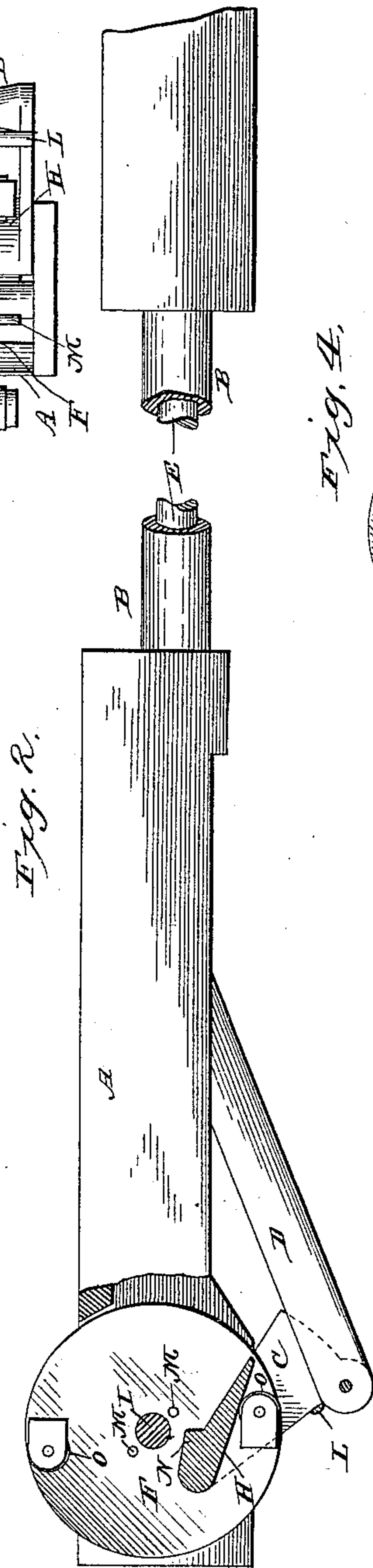
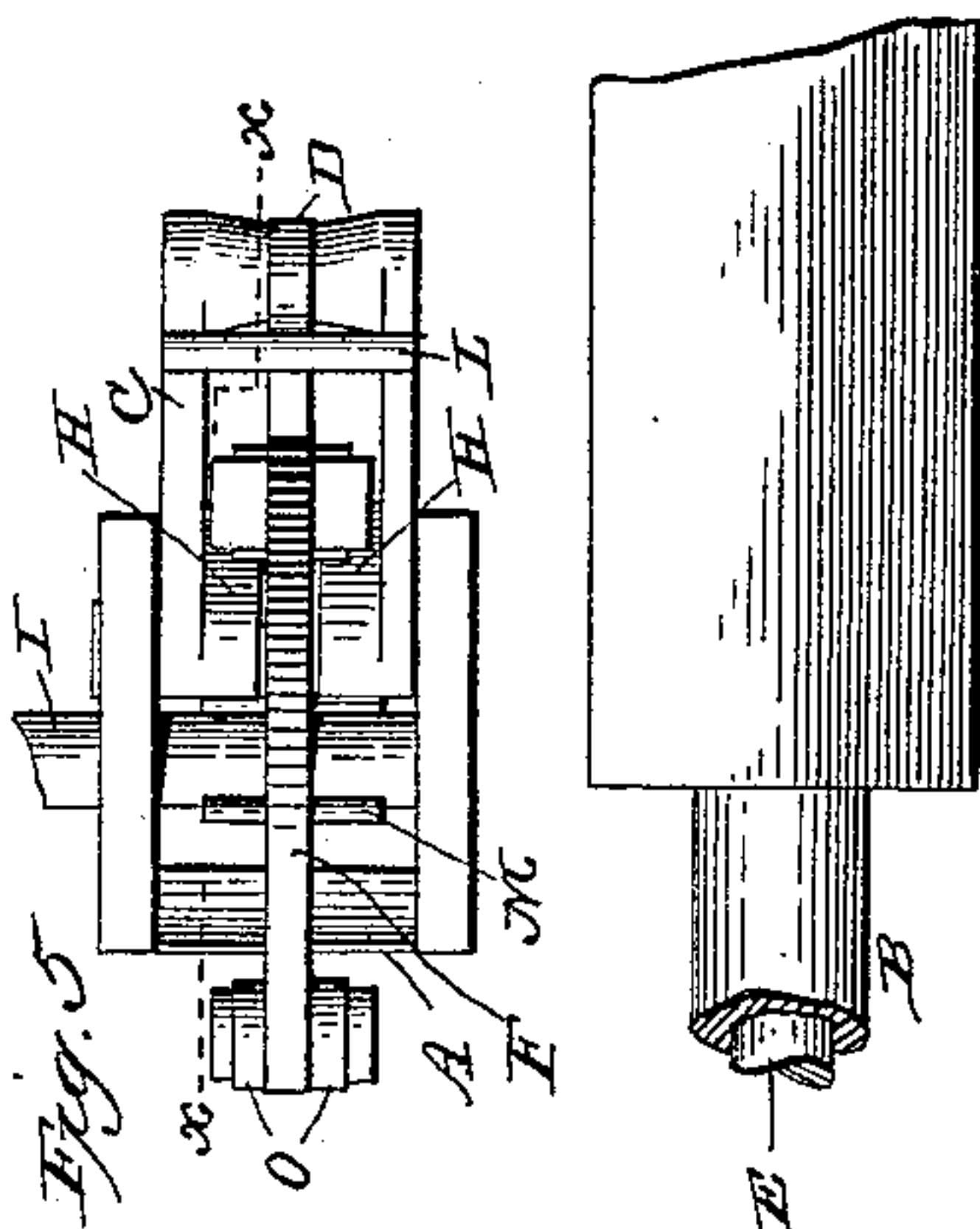
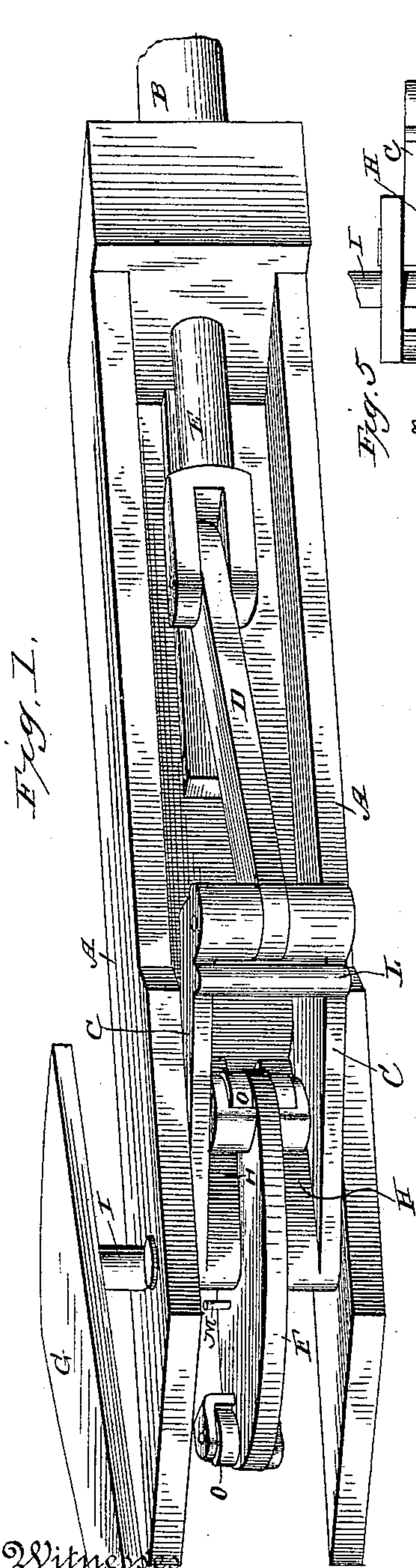


(No Model.)

P. K. DEDERICK.
BALING PRESS.

No. 480,177.

Patented Aug. 2, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

PETER K. DEDERICK, OF LOUDONVILLE, NEW YORK.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 480,177, dated August 2, 1892.

Application filed November 13, 1889. Serial No. 330,210. (No model.)

To all whom it may concern:

Be it known that I, PETER K. DEDERICK, of Loudonville, county of Albany, State of New York, have invented certain Improvements
5 in Baling-Presses, of which the following is a specification, reference being had to the accompanying drawings and the letters of reference marked thereon.

My invention relates to that class of baling-
10 presses for which Letters Patent were granted me October 29, 1872, No. 132,566 and No. 132,639, and the various modifications of the same for which Letters Patent have since
15 been granted me, particularly No. 334,005, dated January 12, 1886.

Figure 1 is a perspective view of my invention. Fig. 2 is a sectional view taken on the line *xx*, Fig. 5. Figs. 3 and 4 are views showing in section the elements of the power contrivance in different positions, and Fig. 5 is
20 an end view of the parts in the position shown in Fig. 2.

Similar letters represent similar parts.

A represents the frame to which the power
25 is secured; B, the pipe or connection by means of which it is attached to the press-chamber; C, the crank-arm; D, the pitman; E, a sliding staff to connect with the traverser of a baling-press; F, the head or arms of the power-shaft;
30 G, the horse-lever; H, the cam-arm of the crank-shaft; I, the power-shaft; K, the crank-shaft.

The frame A may be constructed as shown or in any suitable manner so as to support
35 the bearings of the power, and, if desired, the power may be located directly in the press-frame instead of in a separate frame and connected to it by pipe B.

The crank-arm C projects from the shaft K,
40 which has its bearings in the frame A, both above and below the crank-arm C, and the pitman D is pivoted at the one end to the crank-arm C and at the other end to the slide or staff E, or the pitman D may be pivoted direct to the traverser of a baling-press, if preferred.
45

The crank-shaft or the crank C is provided with cam-faces H on either or both arms, as shown, and said cam-faces projected at such
50 an angle and with either straight or curved face, as required, to secure the proper adaptation of the power communicated from the

parallel power-shaft I and arms F, provided with the rollers O, which are brought to bear against said cam-faces or, as I shall term them, 55
"cams H" alternately as the shaft I revolves. Instead of rollers O, smooth bearings or slides may be used. The cams H might be at the top or bottom of the crank-arm and the rollers of the head F pass over or under the crank in 60
such a manner that the rollers pass the crank-arm in traversing the cams and pass off the same when past the connecting-joint of crank C and pitman D.

The power-shaft I or pivot of the power- 65
head is located on the side of a straight line drawn through the crank-shaft and cam when at approximately the forward end of its movement, toward which the cam moves as the traverser makes its operative or forward 70
stroke. This arrangement enables me to make a compact structure in which a long sweeping movement is given the crank-arm, because the power-head follows it for a considerable distance, moving in a path curved in the 75
same general direction, and at the same time the full advantage of the increasing power of the toggle is realized as it nears its center during the finish of each forward movement of the traverser. I preferably not only locate 80
the pivot of the power-head in the field mentioned, but restrict its location to the portion of said field lying forward of a line drawn at right angles through the cam-shaft, by which I am enabled to employ a power-head of 85
small radius, and consequently secure the greatest power and the most compact structure. Thus the radius of the power-head and cam may be short, as shown, and the projections on the power-head pass around the cam 90
inside of the joint between the crank and pitman. The cam, too, is slightly in advance of the crank, and this leaves a wide space for the projections on the power-head, as will appear from an inspection of Fig. 3. The crank 95
has a connection bar L for additional support and strength and which does not interfere with the operating devices. When operated by a horse-lever, said lever may be secured to the head F or to the shaft I. The position 100
of shaft I may be moved forward or back and secure the same results, provided the cams project at the proper angle from shaft K.

In operation the power is applied to rotate

the shaft I or head F, which forces the rollers O past the crank-arm, each roller or pair of rollers O alternately traversing the cams H and passing off their outer end, and the crank 5 is then reversed by the expansion of the pressed material ordinarily; but to insure this result in light bales I place a pin M or suitable projection so as to strike the crank C or suitable projection N just as the rollers of head 10 F slip off the cams H, and thus give it a quick start and reversing it a sufficient distance so that its momentum will completely reverse it. The number of strokes of the crank-arm and traverser may be varied by increasing the 15 number of arms and rollers on the head F, as each gives a stroke of the traverser to a revolution of the head.

It should be observed that in Letters Patent No. 334,005, heretofore referred to, a power 20 is disclosed in which the horse-lever is pivoted on a separate center applied direct to and slips off of the end of the crank-arm and makes two strokes to less than a turn of the horse-lever, but not adapted to a continuous 25 revolution, as is the device disclosed in this application.

By locating the power-head pivot in the place mentioned the range of movement given the traverser is very great, as the power-head 30 and cam move in substantially the same direction. The power-head follows the cam in its movement and secures, first, the advantage of a rapid movement by causing the crank to act as a lever of the third order, then the advantage of the toggle as the crank and pitman approach their center line and the traverser 35 nears the forward limit of its movement. Another advantage lies in the fact that with this arrangement the machine may be of ordinary width at the power end and still give 40 the traverser a long full movement.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is as follows:

45 1. In a baling-press power, the combination, with the crank-shaft, cam carried thereby, crank, and pitman forming a toggle, of the rotary power-head co-operating with the cam

and pivoted on a center located on the side of a line drawn through the crank-shaft and cam 50 when at the forward extreme of its movement, toward which the cam moves during its forward stroke, substantially as described.

2. In a baling-press power, the combination, with the crank-shaft, cam carried thereby, 55 crank, and pitman forming a toggle, of the rotary power-head co-operating with the cam and pivoted on a center located on the side of a line drawn through the crank-shaft and cam when at the forward extreme of its move- 60 ment, toward which the cam moves during its forward stroke, and forward of a line drawn through the crank-shaft at right angles to the first-mentioned line, substantially as described. 65

3. In a baling-press power, the combination, with the crank-shaft, cam carried thereby, 70 crank, and pitman forming a toggle, of the power-head having the rollers or equivalent passing around the cam and the projections passing between the crank-shaft and power-head pivot, co-operating with the cam to return the same to normal position, substantially as described.

4. In a baling-press power, the combination, 75 with the pitman, crank-shaft, crank, and cam carried thereby of less length than the crank, of the power-head pivoted on the side toward which the cam moves, having the rollers or equivalent co-operating with the cam and 80 passing off the same within the radius of the crank, substantially as described.

5. In a baling-press power, the combination, with the pitman, crank-shaft, crank, and cam 85 carried thereby in advance of the crank, of the power-head pivoted on the side toward which the cam moves in its forward stroke and having rollers or equivalent co-operating with and passing around the cam and between its end and the joint between the crank and 90 pitman, substantially as described.

PETER K. DEDERICK.

Witnesses:

CYRUS R. DEDERICK,

R. J. VAN SCHOONHOVEN.