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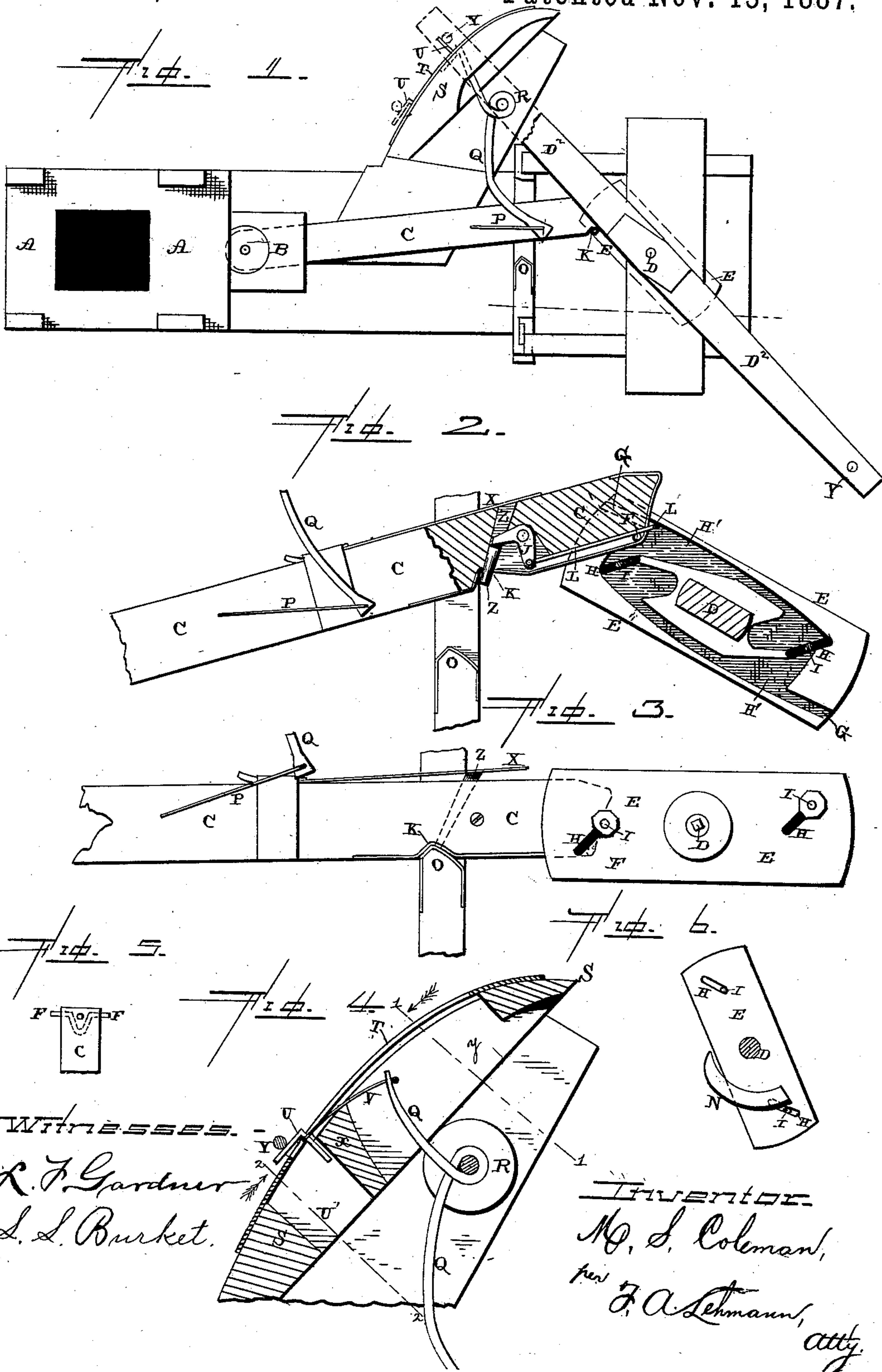
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M. S. COLEMAN.

BALING PRESS.

No. 373,341.

Patented Nov. 15, 1887.



WITNESSES.

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INVENTOR.

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att'y.

(No Model.)

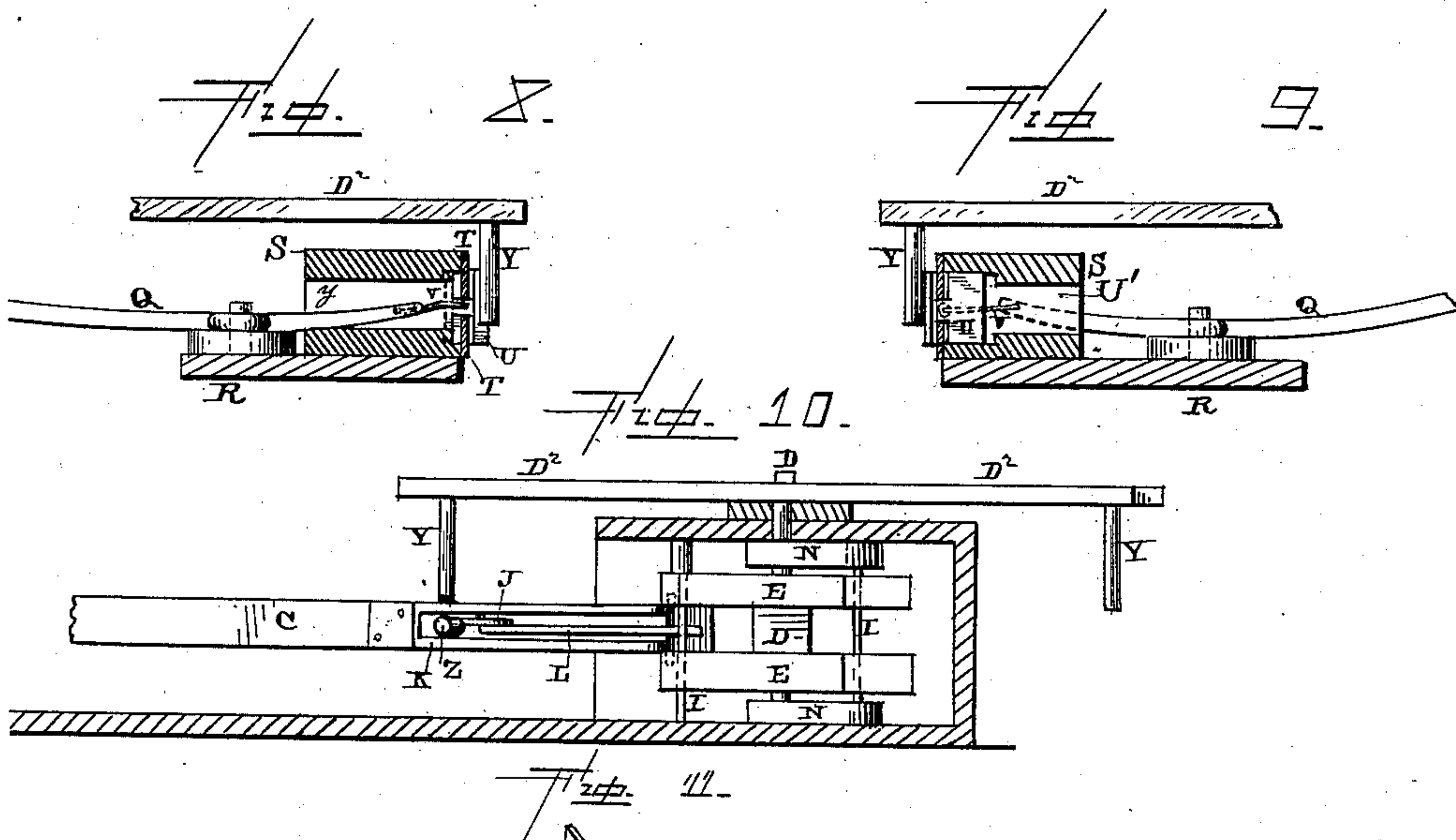
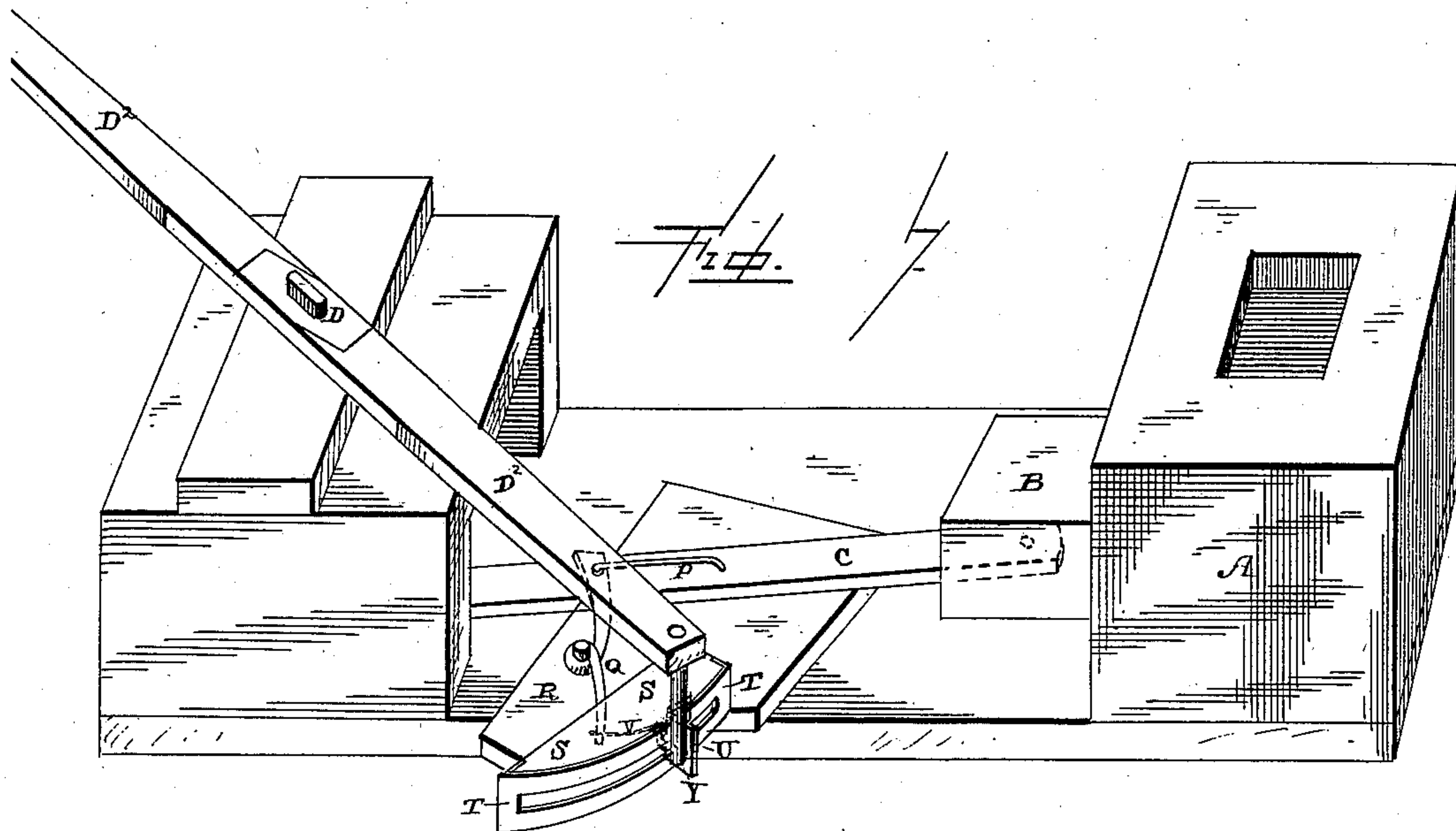
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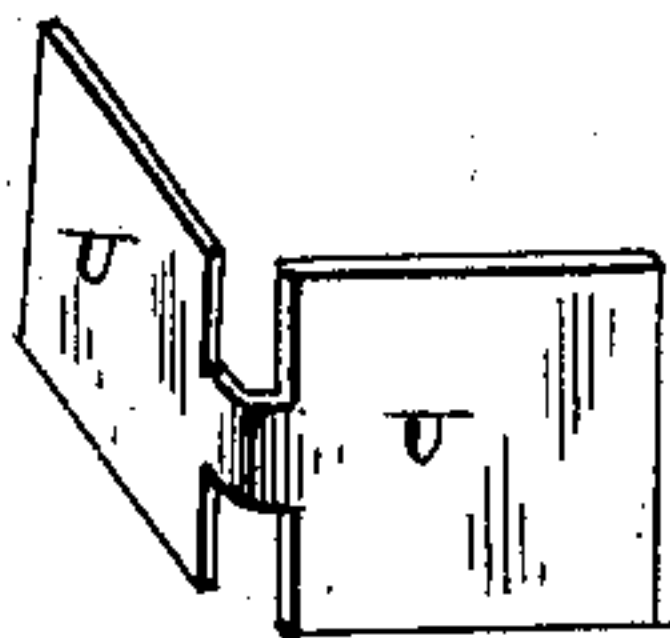
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WILFREDESSES

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UNITED STATES PATENT OFFICE.

MINOR S. COLEMAN, OF COTOPAXI, COLORADO.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 373,341, dated November 15, 1887.

Application filed July 13, 1885. Renewed October 26, 1886. Serial No. 217,255. (No model.)

To all whom it may concern:

Be it known that I, MINOR S. COLEMAN, of Cotopaxi, in the county of Fremont and State of Colorado, have invented certain new and useful Improvements in Hay or Cotton Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in hay or cotton presses; and it consists in the arrangement and combination of parts, which will be more fully described hereinafter, whereby a cheap, simple, and efficient press is produced for compressing materials of all kinds into bales, and in which the sweep or operating-lever is moved continuously around in a circle.

Figure 1 is a plan view of a press in which my invention is embodied. Fig. 2 is an enlarged view of the outer end of the pitman and one of the operating-cranks, the pitman being shown partly in section. Fig. 3 is a plan view of the pitman and the operating-cranks. Fig. 4 is a horizontal section of the curved guide S. Fig. 5 is a detached side view of the end of the pitman. Fig. 6 is a plan view of one of the cams N, shown in relation to one of the operating-cranks. Fig. 7 is a perspective of the press and its attachments. Fig. 8 is a vertical section taken through the curved guide on the line 1 1 of Fig. 4. Fig. 9 is a similar view taken on the line 2 2, and looking in the opposite direction from Fig. 8. Fig. 10 is a side elevation of the pitman, cranks, cams, and rod I. Fig. 11 is a detached perspective of the slide U.

A represents the press-box, having an opening through its top for the introduction of the material to be compressed; B, the follower, and C the pitman, which is loosely connected to the follower at one end, and has its other end to project in between the two cranks E, which are rigidly secured to or cast with the operating-shaft D, which is operated by the sweep D² in the usual manner. These cranks E are oblong in shape and provided with the horizontal recesses H' on their inner sides, for the projections F on the end of the pitman to catch in, and thus force the pitman back and

forth as the cranks are caused to revolve by the sweep. Through both ends of each of the two cranks E are formed the corresponding slots H, down through which are passed the rods I for the end of the pitman to alternately bear against as the cranks sweep around. These rods I pass down through both cranks, as shown in Fig. 10, and may either be made movable in the slots, as here shown, or rigidly connected to the plates, as may be preferred. These rods are moved by the pressure of the pitman from one end of the slots to the other, and then are returned to position by the cams N, which are rigidly secured to the inner sides of the frame-work a². These cams are stationary, while the castings revolve between them, and as the castings revolve horizontally the projecting ends of the rods I strike against the edges of the cams N and are forced outward in the slots. The recesses H' are so shaped that they guide the end of the pitman by means of the projections F directly against the rods, which, as the cranks sweep around, force the pitman forward to cause the follower to compress the material. When the stroke is about one-half made, these rods move inward in the slots toward the shaft D, and thereby shorten the lever-arm of resistance. While the pitman is moving through the first part of its stroke, and while the resistance is least, the rods I are in the outer ends of the slots and moving rapidly through the largest part of their circuit; but as the compression in the box A becomes greater the rods begin to move inward in their slots nearer the center of motion, and hence move the pitman more slowly, but exert a greater power upon it. Extending from diagonally-opposite corners of the recesses H' are the grooves G, through which the ends of the projection F pass when the pitman is being connected to or disconnected from the cranks for any purpose. The outer end of the pitman is inclined or beveled, as shown in Figs. 2 and 3, so that the rods I will bear solidly against it while forcing the pitman and follower backward, and then slip freely off after the pitman has been moved its full stroke and is ready to begin its outward movement again.

In one edge of the pitman C is made a recess, K, and projecting from the side of the pitman into this recess is one end of the rod

Z, which is held in the position shown in Fig. 2 by the pressure of the spring X against its end. When the pitman C and the cranks E are moved into the position shown in Fig. 3, the pitman is moved against the end O of a beam which extends horizontally across the base of the press, and this end O just fits in the recess K and forces the rod Z backward against the pressure of the spring. A shoulder is formed on the rod Z, and engaging with this shoulder is the angular lever J, which is pivoted in a recess in the side of the pitman; and has the rod L pivoted to its outer end. This rod L extends along through a recess in the side of the pitman, and has its outer end to project beyond the end of the pitman, as shown in Fig. 2, so as to catch against the rods I as the cranks revolve. When the rod Z is forced backward just as the pitman completes its full stroke, as shown in Fig. 3, the lever J withdraws the end of the rod L from behind the rod I, and then the cranks E are carried on around, drawing the pitman C outward by means of the recesses H' and the projections F until another forward stroke is about to begin, when the end of the rod L catches behind the rod I at the other end of the plates. As soon as the pitman begins its forward movement and moves away from the end O of the cross-timber, the rod Z has its end forced outward into the recess by the spring X, and the end of the rod L is forced outward again beyond the end of the pitman, ready to engage with the next rod I. The rod I which has just been freed from the projecting end of the rod L is moved outward from the inner to the outer ends of the slots H by the cams N, so as to be ready to again engage the ends of the pitman.

Loosely fastened to the top of the pitman C is one end of the rod P, which has its outer free end fastened loosely to one end of the lever Q, which is pivoted upon the support R. The shorter end of the lever Q projects into a horizontal recess in the guide S, and has loosely connected to it, by means of the rod V, the slide U, which is so shaped as to form a right angle. To the outer curved side of the guide S, above and below the opening through it, is secured the metallic plate T, which serves as a means to hold the slide U in position while being forced forward by the sweep and returned to position by the inward movement of the pitman. Between the outer side of the guide and the inner side of the plate T is left sufficient space for the inner end of the slide to move in while being forced forward by one of the hangers Y, which depend from the ends of the sweep D', as the pitman C is being drawn outward, or is being drawn backward by the lever Q as the pitman is forced forward. This slide U is cut away at its center, so as to pass through the slot in the plate T and to move freely back and forth therein. A partition, X, in the guide S separates the recess y, in which the lever Q moves

from the recess U', in which the slide U turns partially around as soon as it passes the partition, in order to allow the hanger Y to pass on by. As soon as the hanger releases the slide and the pitman begins its forward movement or stroke, the lever Q begins to turn upon its pivot and move the slide U back to the starting-point, so as to be struck by the hanger Y on the other end of the pitman. This slide U and the lever Q while being moved by the hanger on the sweep move the pitman C back into that position where its end will be struck by the rod I at the opposite end of the cranks E.

Were it not for the lever and slide the pitman would not be moved by the cranks E, so that as they sweep around the rods would engage with its end to force it forward.

Should it be preferred to make the rods I stationary instead of movable in slots, as shown, the operation of the parts will be the same, with the exception that the rods I will have no movement whatever. They catch against the end of the pitman and force it around until the pitman is released, as above described.

Having thus described my invention, I claim—

1. In a hay or cotton press, the sweep, and the operating cranks having grooves formed in their inner sides, in combination with the pitman having projections on its end to catch in the grooves, substantially as shown.

2. The combination of the sweep, and the two cranks grooved on their inner sides and connected together at their centers with the pitman provided with projections upon its end to catch in the grooves, substantially as described.

3. The combination of the sweep, cranks grooved on their inner sides and provided with slots and connected together at their centers with the pitman provided with projections on its end to catch in the grooves, the rods, and the cams for operating the rods, substantially as set forth.

4. The combination of the sweep, the grooved cranks with the pitman provided with projections on its end to catch in the grooves, the rod Z, spring-actuated cranked lever, pin L, and projection on the frame to operate the rod Z, substantially as specified.

5. The combination of the sweep, the grooved cranks, the pitman provided with projections, the connecting-rod, the pivoted lever, angular slide, and the grooved and recessed guide in which the slide moves, substantially as shown.

6. The combination of the grooved and recessed guide with the angular slide which moves therein, the pivoted lever, a sliding connection between the lever and the angular slide, the pitman, and a connecting-rod between the pitman and the lever, substantially as described.

7. The combination of the pitman C, the projecting spring-actuated pin or rod Z, which has one end to project beyond the side of the pitman, a projection, O, to strike against the end

of the rod, the crank-lever J, the rod L, and the operating-cranks carrying rods I, substantially as set forth.

5 8. The combination of the grooved operating-cranks provided with pins with the pitman provided with projections to catch in the grooves, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

M. S. COLEMAN.

Witnesses:

JOSEPH BARDINE,
ANNA M. BARDINE.