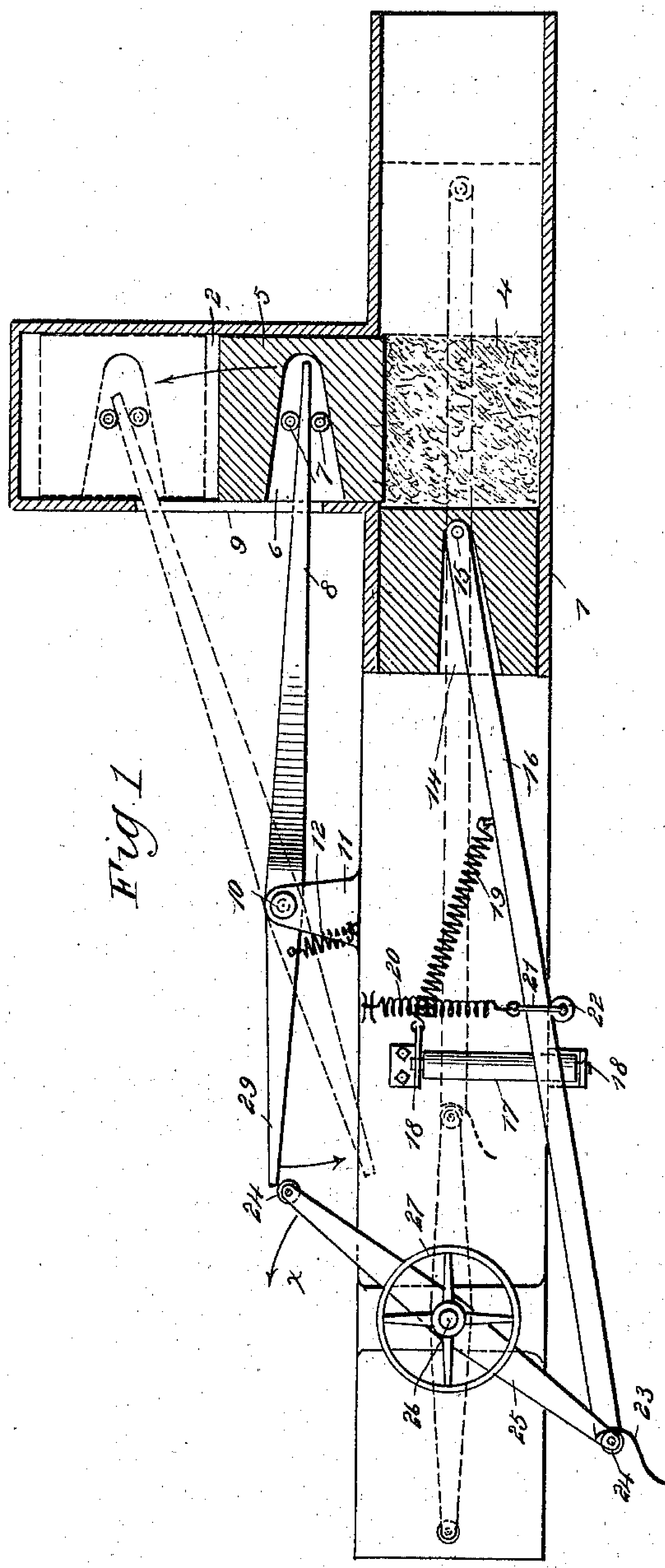
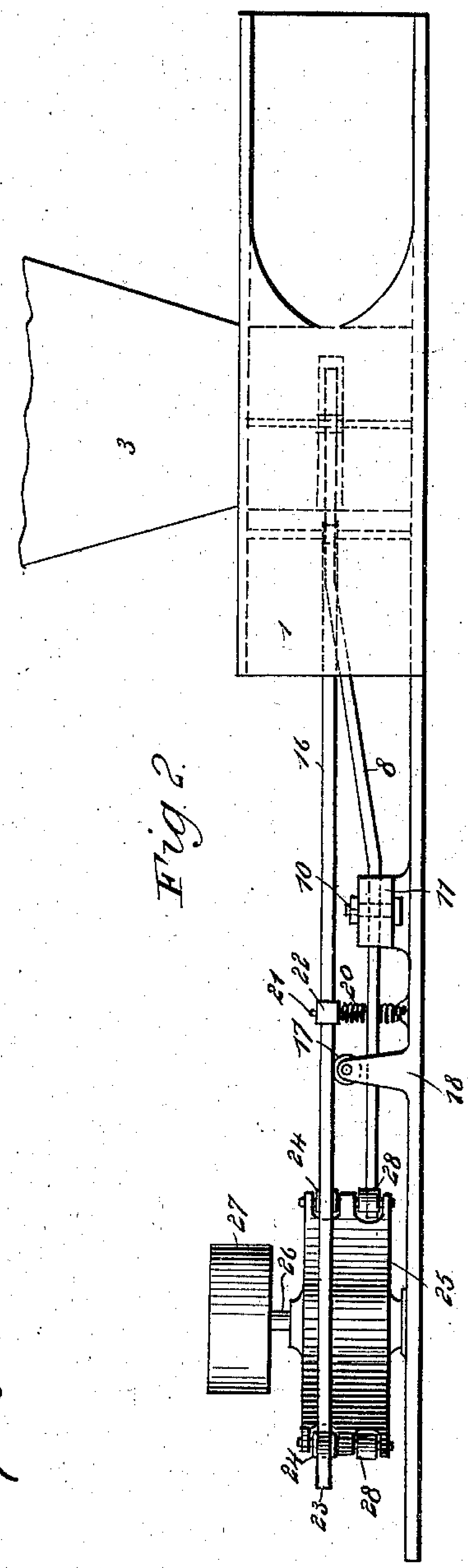
(No Model.)

A. C. MILLER & E. A. JOHNSON.

HAY PRESS.

No. 559,303. Patented Apr. 28, 1896.





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ANDREW C. MILLER AND EDWARD A. JOHNSON, OF COMMERCE, MISSOURI;
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HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 559,303, dated April 28, 1896.

Application filed June 26, 1895. Serial No. 554,122. (No model.)

To all whom it may concern:

Be it known that we, ANDREW C. MILLER and EDWARD A. JOHNSON, of Commerce, in the county of Scott and State of Missouri, have invented a new and Improved Hay-Press, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in machines or presses for baling or pressing hay and the like, and has for its object to provide a device of this character of a simple and improved construction which shall be adapted to be continuously operated by horse or other power to press the hay, &c., into bales.

The invention comprises a frame having chambers to receive the hay and having feeding and pressing plungers or pistons, a rotative shaft having arms, and a lever and a connecting-rod arranged to be engaged by said arms and connected to the pistons, so that when said shaft is rotated said arms will act on said lever and the connecting-rod to move the pistons in their chambers to feed and compress the hay.

The invention also contemplates certain novel features of construction and combinations and arrangements of the parts of the improved press, whereby certain important advantages are attained and the device is made better adapted and more convenient for use than other similar forms of press heretofore employed, all as will be hereinafter set forth.

The novel features of the invention will be carefully defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a plan view of a hay-press constructed in accordance with our invention, portions of the frame thereof being shown in section to better illustrate the form and arrangement of the chambers and the pistons therein; and Fig. 2 is a side elevation of the device.

The frame of the machine is provided near one end with a compression-chamber 1, of rectangular cross-section, extending longitudinally of it, and said frame is also provided with a receiving-chamber 2, of similar form and extending at right angles to the said compression-chamber 1, into which it opens at its end, as seen in Fig. 1, said receiving-chamber being provided with a feed-hopper 3, extending above it, as indicated in Fig. 2.

In the chamber 2 is arranged to reciprocate a plunger or piston 5, of rectangular cross-section, adapted when moved to carry the hay fed into the said chamber through the hopper 3 into the compression-chamber 1, as indicated at 4 in Fig. 1, and in one face said piston 5 is provided with a recess 6, extending part way through it, at opposite sides of which recess are arranged rotative rollers 7, adapted to receive between them the tapered end of an operating-lever 8, which extends through a slot 9, formed in the wall of the receiving-chamber 2, as clearly seen in Fig. 1, and is pivoted at 10 to a bracket 11 on the frame of the press and is provided with a spring 12, serving to hold the piston 5 normally pressed outward to the position indicated in dotted lines in Fig. 1.

In the compression-chamber 1 is arranged to reciprocate a compressing piston or plunger 13, similar in form to the piston 5, but moving in a direction at right angles to the same, being provided with a recess 14 in its rear face, at the forward end of which recess is pivoted at 15 a pitman or connecting-rod 16, arranged to reciprocate in a horizontal plane, being supported at its free end on a roller 17, extending transversely of the frame and mounted to turn loosely in bearing studs or brackets 18, and said pitman or connecting-rod is provided with a spring 19, connecting it to the frame and adapted to hold the piston 13 at the end of its back stroke in the position seen in Fig. 1.

The pitman or connecting-rod 16 is laterally movable at its rear end, and in order to limit its lateral movement and also to prevent it from being disengaged from the roller 17 we attach a second spring, 20, to the frame of the device, having a yoke 21, encircling the said pitman or connecting-rod 16, and carrying a roller 22, engaging the outer side thereof, as clearly seen in the drawings.

The pitman or connecting-rod 16 is provided at its extremity with a shoe 23, which may

be conveniently formed of sheet metal bent to form, as seen in Fig. 1, and said shoe is arranged to receive and be engaged by rollers 24, carried on the opposite ends of a lever or beam 25, secured on a shaft 26, mounted to rotate in the frame of the machine and provided with a pulley 27 or other device whereby said shaft and the other operative parts may be driven from any source of power in the direction indicated by the arrow *x* in Fig. 1. The ends of the beam or lever 25 are provided with other rollers 28 below the rollers 24, which latter rollers are adapted to engage the end 29 of the lever 8 and move the same from the position seen in dotted lines to the position seen in full lines in Fig. 1, the spring 12 acting to return said lever to its normal position after the passage of each of said rollers 28, as will be readily understood.

The operation of the device is as follows: The hopper being filled with hay and the shaft 26 set in motion, the lower roller 28 on one end thereof engages the end 29 of the lever 8 and moves the same from the position seen in dotted lines to the position seen in full lines in Fig. 1, so as to feed the hay contained in the receiving-chamber 2 into the compression-chamber 1, the said lever and its piston being returned to its original position after the passage of said roller by means of the spring 12. As the shaft 26 rotates, the upper roller 24 on the opposite ends of the beam 25 comes to bear on the shoe 23 at the end of the lever or pitman or connecting-rod 16 and moves said pitman, together with the piston 13 carried thereby, to the position seen in dotted lines in Fig. 1, thereby compressing the hay in the chamber 1, after which said roller 24 slips off the shoe 23 and permits the spring 19 to return said pitman or connecting-rod and its piston 13 to the position seen in full lines in Fig. 1. Thus it will be seen that if continuous rotative movement be imparted to the shaft 26 and the hay be continuously fed into the hopper 3 the machine will work continuously, and it will be evident that any power may be employed to work the said shaft, as water, horse, or steam power.

The construction of the device, as above described, is exceedingly simple and inexpensive and is well adapted for baling hay on farms and elsewhere, being very convenient for operation and not liable to derangement of its parts. Moreover, the construction is such that when once the shaft 26 is set in motion little or no attention is required to be paid to the operative parts of the device, these being altogether self-acting.

It will be evident from the above description that some change and modification may be made in the arrangement and construction of the improved baling-press without material departure from the principles of the invention, and for this reason we do not wish to be understood as limiting ourselves to the precise form of the device herein shown and described.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. In a hay-press or the like, the combination of a frame having a receiving-chamber and a compressing-chamber, plungers in said chambers, a rocking lever connected at one end to one plunger, a connecting-rod connected to the other plunger, a rotative shaft, and arms on said shaft to engage and alternately actuate the lever and the rod, substantially as shown and described.

2. In a hay-press or the like, the combination of a frame having a receiving-chamber and a compressing-chamber, plungers in said chambers, a lever pivoted on the frame with one end connected to one plunger, a retracting device for said lever, a pitman connected to the other plunger and adapted for endwise movement, a rotative shaft, and arms thereon adapted to alternately engage and operate the said lever and pitman, substantially as shown and described.

3. In a hay-press or the like, the combination of a frame having a receiving-chamber and a compressing-chamber, plungers in said chambers, a rocking lever connected at one end to one plunger, a connecting-rod connected to the other plunger, a rotative shaft and a beam on said shaft having its opposite ends arranged to alternately engage and actuate respectively the lever and the rod, substantially as shown and described.

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