(No Model.) 3 Sheets—Sheet 1.

A. ALLEN.

FOLLOWER OPERATING MECHANISM FOR BALING PRESSES.

No. 419,813. Patented Jan. 21, 1890.

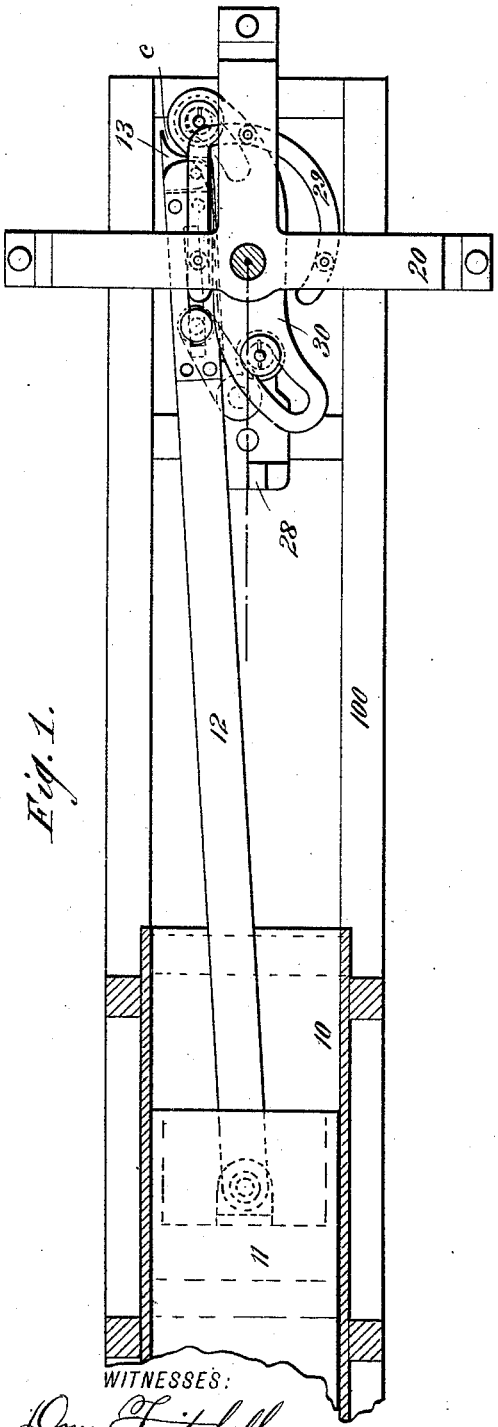

Fig. 1.

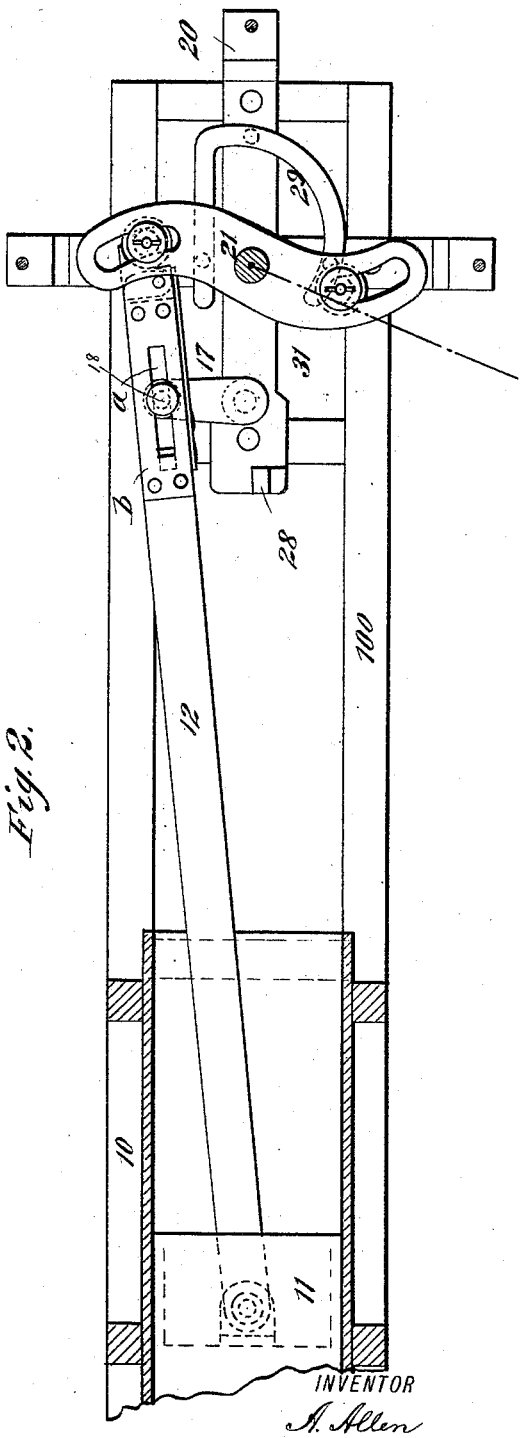

Fig. 2.

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Fig. 3.

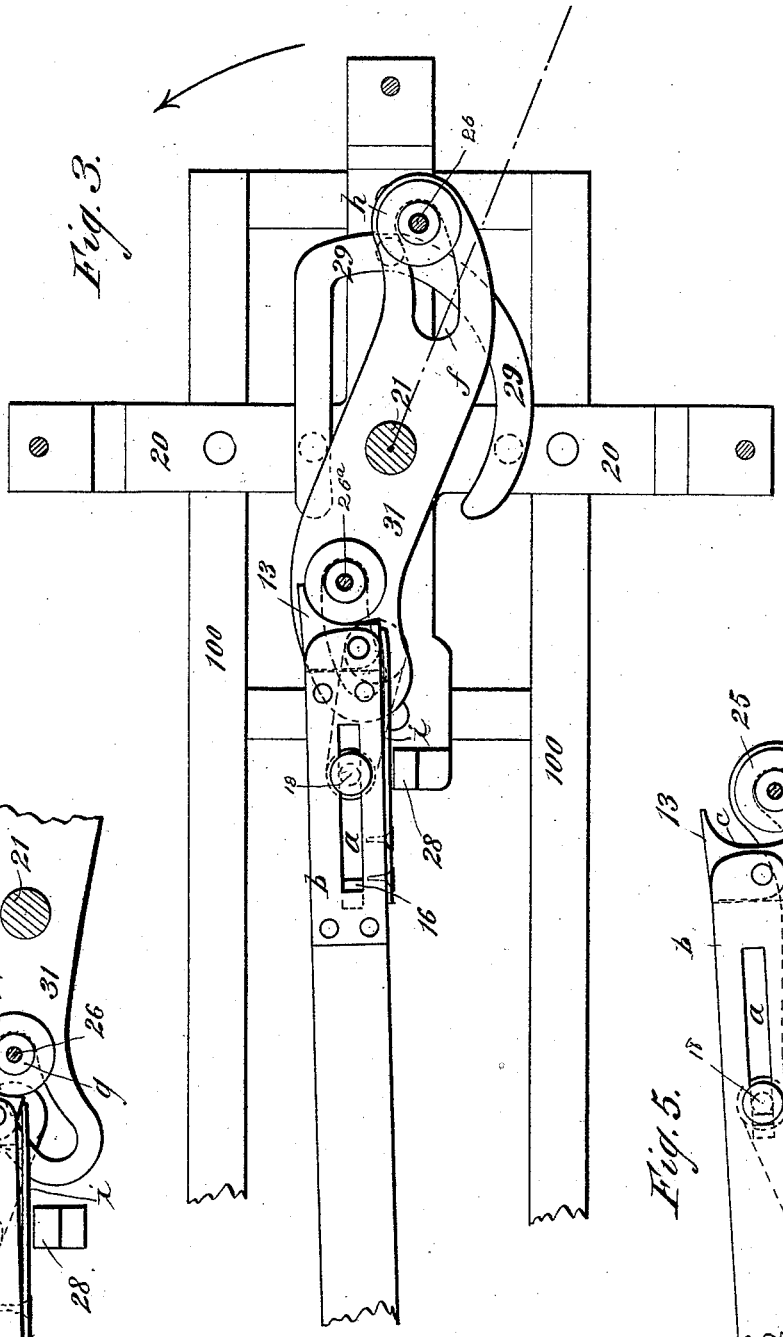

Fig. 4.

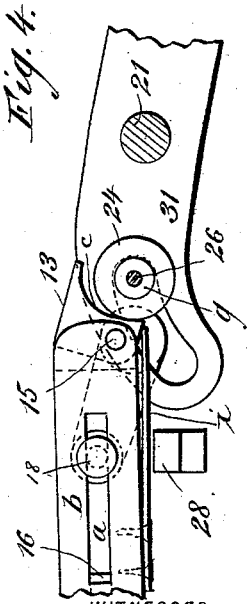

Fig. 5.

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No. 419,813. Patented Jan. 21, 1890.

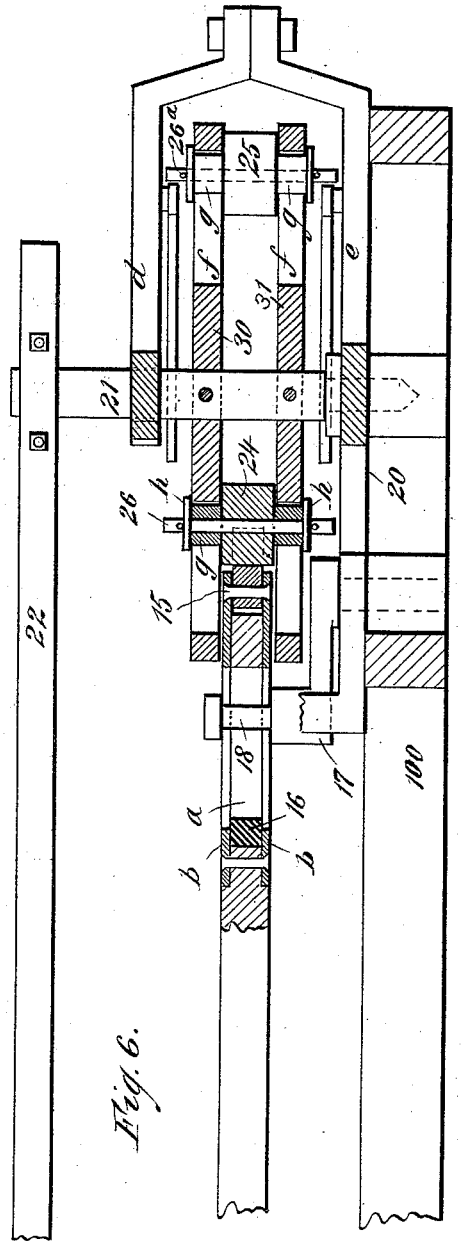

Fig. 6.

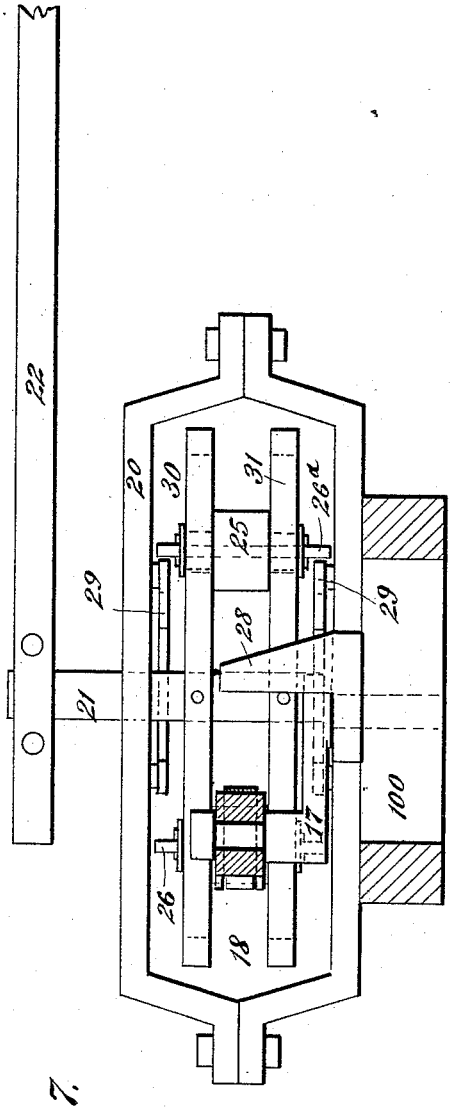

Fig. 7.

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UNITED STATES PATENT OFFICE.

ALVIN ALLEN, OF GIRARD, KANSAS.

FOLLOWER-OPERATING MECHANISM FOR BALING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 419,813, dated January 21, 1890.

Application filed March 12, 1889. Serial No. 302,972. (No model.)

To all whom it may concern:

Be it known that I, ALVIN ALLEN, of Girard, in the county of Crawford and State of Kansas, have invented a new and Improved Follower-Operating Mechanism for Baling-Presses, of which the following is a full, clear, and exact description.

This invention relates to presses of the class employed in the baling of hay and cotton, the main objects of the invention being to provide for two forward movements of the follower for every revolution of the sweep or lever, to provide for a rapid movement of the follower during the preliminary compression of each batch of material, and at the same time to provide for a more effective application of the power during the final compression of each charge or batch of the material that is being operated upon.

To the ends named the invention consists of certain novel constructions, arrangements, and combinations of elements, to be hereinafter explained, and specifically pointed out in the claims.

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

Figure 1 is a sectional plan view of my improved follower-operating mechanism, the view being taken on a line just below the sweep or power-lever, and the parts being represented as they appear when the follower is upon its outward or up stroke. Fig. 2 is a similar view, the parts, however, being represented as they appear when the follower is upon the half-downward or inward stroke. Fig. 3 is an enlarged sectional plan view, parts being represented as they appear when the follower has reached its downward or inward line of travel. Fig. 4 is a detail view illustrating the parts as they appear just as the follower-operating arm is freeing itself from the pitman end. Fig. 5 is a detail view illustrating the parts as they appear after the follower has been freed from one of its operating-arms and is about to be engaged by the other. Fig. 6 is a sectional elevation of the operating mechanism, and Fig. 7 is a cross-sectional view.

In the drawings, 10 represents the baling-chamber; 11, the follower, and 12 a pitman, that is connected to the follower in the ordinary manner. The end of the pitman is formed with a slot *a*, and is strengthened by means of slotted plates *b*, which extend somewhat beyond the end of the pitman-bar to serve as supports for a block 13, formed with a concave face *c*, said block being supported by a pivot pin or bolt 15, which is carried by the plates *b*. The block 13 is normally held in the position in which it is shown in Fig. 5 by a spring *i*, such spring, however, permitting the block at times to tilt, as illustrated in Fig. 4. At the lower end of the slot *a*, I arrange a rubber cushion 16.

The extending end of the pitman 12 is supported by a guiding-arm 17, which arm is provided with an upwardly-extending pin or stud 18, that passes through the slot *a*, the opposite end of the guiding-arm being pivotally connected to the frame 20, which frame is rigidly connected to a base-frame 100. The frame 20 supports a vertical shaft 21, to the upper end of which there is connected a sweep or power-lever 22, the shaft being stepped upon the lower member *e* of the frame 20 and guided by the upper member *d* of said frame. The shaft 21 carries two double arms 30 and 31, and between the said arms I mount rollers 24 and 25, the rollers being loosely mounted upon shafts 26 and 26^a, which extend through curved slots *f*, that are formed at each end of the double arms 30 and 31, anti-friction wheels or rolls *g* being also carried by the shafts 26 and 26^a, said anti-friction rolls or wheels resting within the slots *f*, the parts being held, as represented in the drawings, by washers *h*.

Just at one side of the center of the frame 100, I secure a stop 28, and upon the frame 20, I mount two curved plates or bars 29, the outer curved faces of said bars or plates being eccentric to the axis of the shaft 21, and the plates being so placed that as the shaft 21 is rotated the ends of the shafts 26 and 26^a will bear upon the plates or bars, and will be moved outward from the position in which they are shown in Fig. 2 to the position in which they are shown in Fig. 1.

The operation of the improved mechanism for baling-presses which has been above described is as follows: The sweep, being advanced in the direction of the arrow shown

in Fig. 3, will carry the shaft 21, and with it the double arms 30 and 31, forward in the same direction, and as the double arms so advance one of their rollers 24 or 25 will bear against the block 13, which, as before stated, is pivotally connected to the pitman 12. Then any continued forward movement of the sweep will carry the pitman downward or forward, the preliminary movement of the pitman being quite rapid, owing to the fact that its point of connection with the double arms is at a considerable distance from the axis of the shaft 21, to which the arms are connected; but as the arms 30 and 31 move in the direction of the arrow shown in Fig. 3 the roller at the left will move toward the axis of the shaft 21, and consequently the power applied to the sweep will be more advantageously utilized. When the parts reach the position in which they are shown in Fig. 3, the pitman will strike against the stop 28, and any further lateral movement of the extending end of the pitman will be checked, the onward movement of the arms 30 and 31 causing the block 13 to tilt to the position in which it is shown in Fig. 4, thus providing for the easy passage of the roller carried by the arms 30 and 31 from engagement with the block 13. Immediately after the roller has passed from engagement with the block the elasticity of the material that is being operated upon will cause the pitman to return to the position in which it is shown in Fig. 5, the pitman at this time being guided by the arm 17 and all undue shocks to the parts being overcome by the action of the elastic cushion 16. It will be noticed that when one of the rollers leaves the block 13 it will be at the inner end of the slot in its supporting-arm; but as the double arms advance the roller-shaft 26 or 26^a will bear upon the outer curved faces of the plates or bars 29, and the roller will be carried to the position shown at the right in Fig. 3.

By means of the construction above described I secure a comparatively rapid movement of the follower when the initial compression of the material takes place, and at the same time I secure an exceedingly advantageous application of the power when the final compression is brought about.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a sweep, the driving-shaft 21, double arms mounted on the latter, and the pitman having a lengthwise slot, of the pitman-guide consisting of the pivoted arm 17, having a stud which works in said slot, as shown and described.

2. The combination, with a sweep, the driving-shaft 21, double arms having rollers at their ends and mounted on the said shaft, and the pitman having a lengthwise slot, of the pitman-guide consisting of the pivoted arm 17, whose free end connects with the pitman, and the block 13, pivoted to the end of the pitman and coworking with the double arms and their rollers, as shown and described.

3. The combination, with a driving-shaft, of double arms carried thereby, rollers carried by the arms, a pitman, a block pivotally connected to the outer end thereof, a spring arranged in connection with the block, and a pitman-guide, substantially as described.

4. The combination, with a driving-shaft, of double arms carried thereby and formed with slotted ends, rollers supported by the arms, the roller-shafts passing through the arm-slots, a pitman, a block pivotally connected to the outer end thereof, a spring arranged in connection with the block, a pitman-guide, and a stop, substantially as described.

5. The combination, with a driving-shaft, of double arms 30 and 31, carried thereby and formed with slots *f*, rollers 24 and 25, shafts 26 and 26^a, upon which the rollers 24 and 25 are mounted, rollers *g*, also carried by the shafts 26 and 26^a and arranged within the slots *f*, cam-faced plates or bars 29, against which the shafts 26 and 26^a at times bear, a pitman, a block 13, pivotally connected thereto, a spring arranged in connection with the block, an arm 17, provided with a stud 18, which enters a slot formed in the pitman, a cushion 16, carried by the pitman, and a stop 28, substantially as described.

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Witnesses:
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