No. 627,804. Patented June 27, 1899.

J. W. & J. S. CLICK.

BALING PRESS.

(Application filed June 23, 1898.)

(No Model.) 3 Sheets—Sheet 1.

FIG. 1

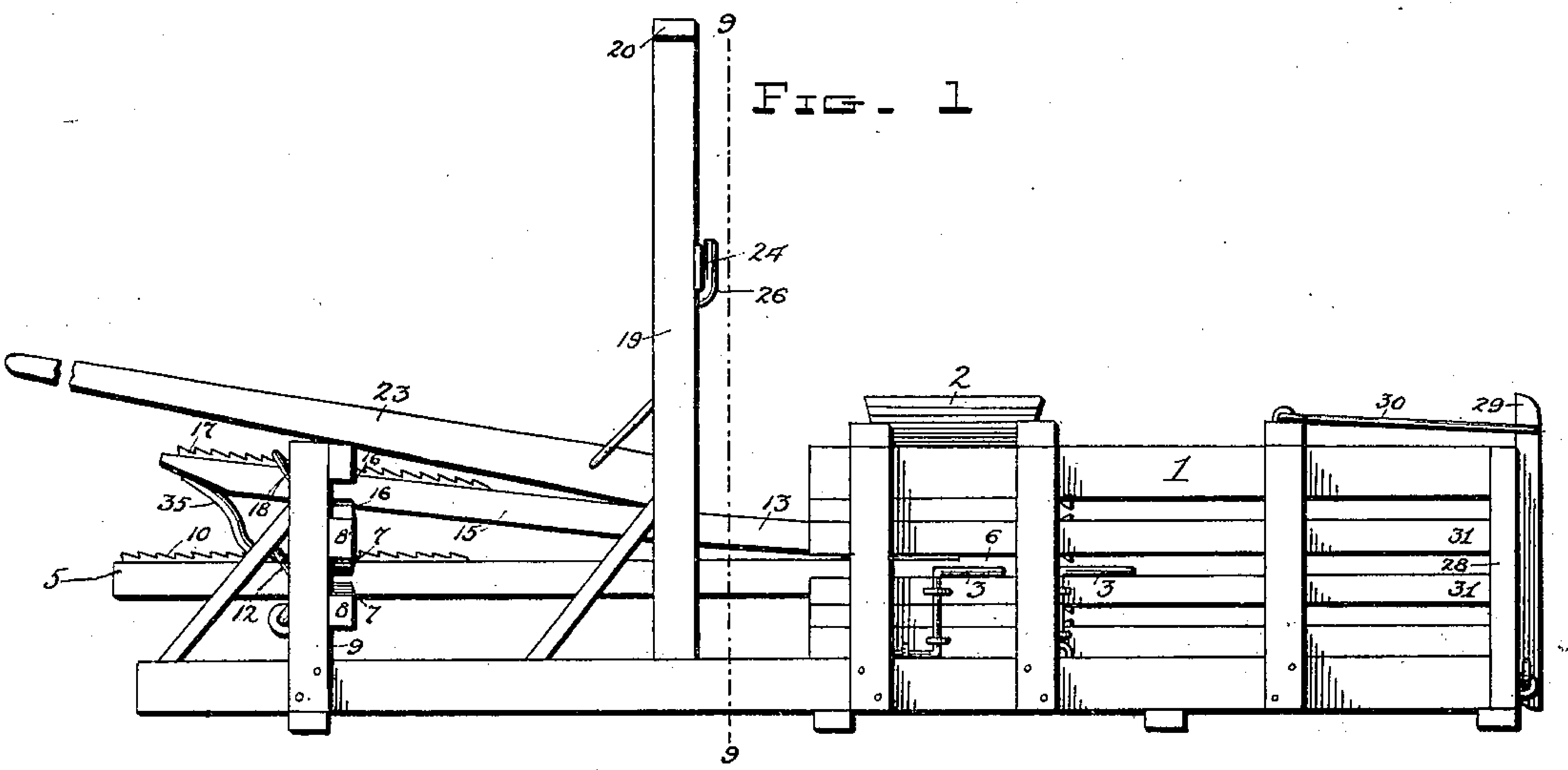

FIG. 2

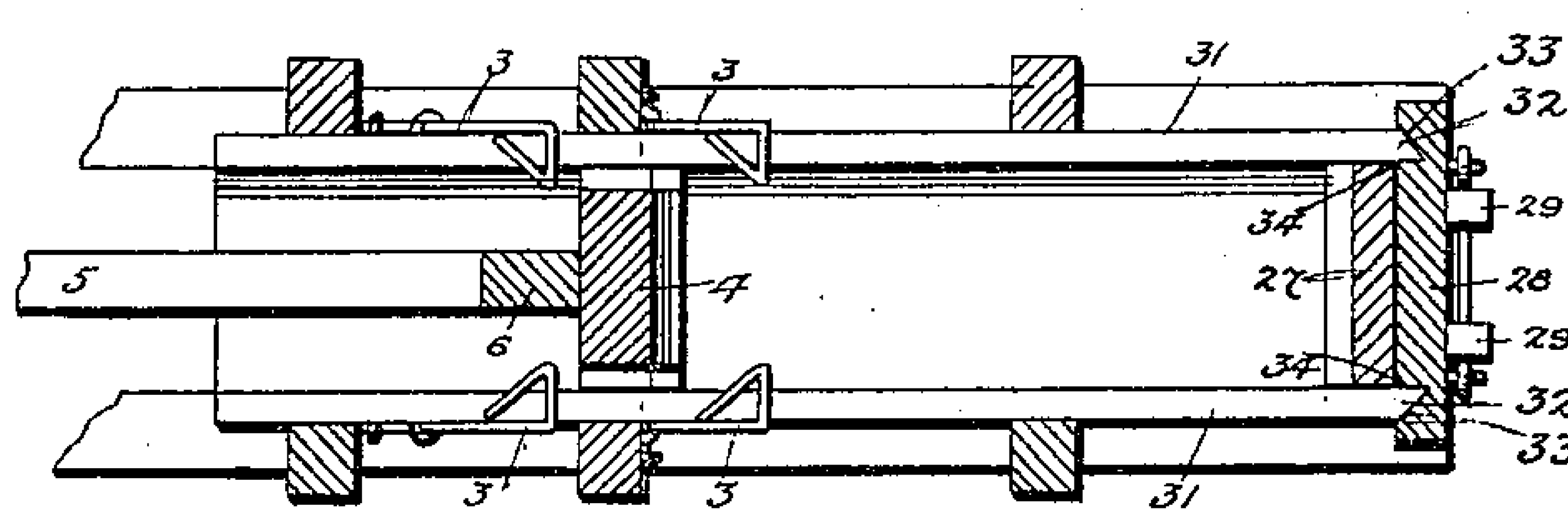

FIG. 4

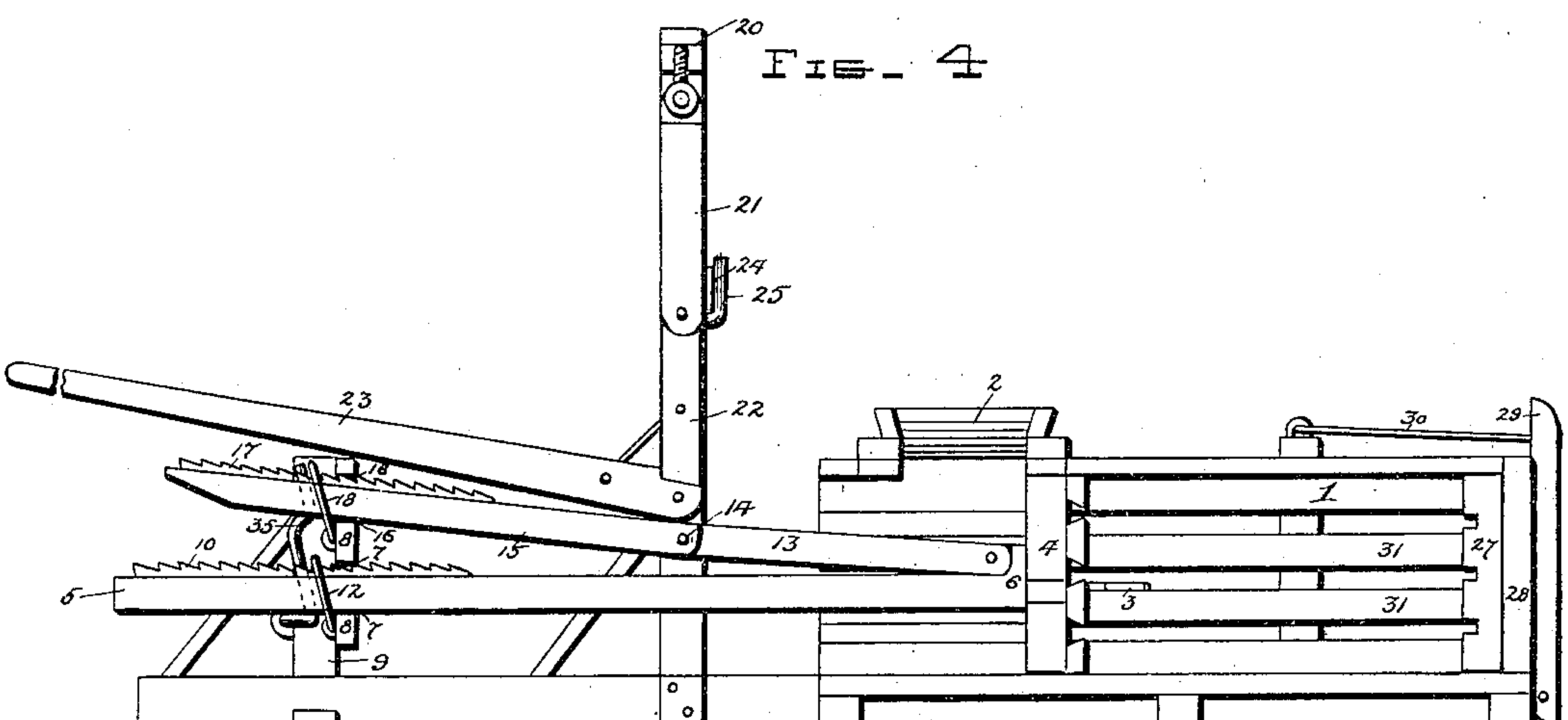

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FIG. 3

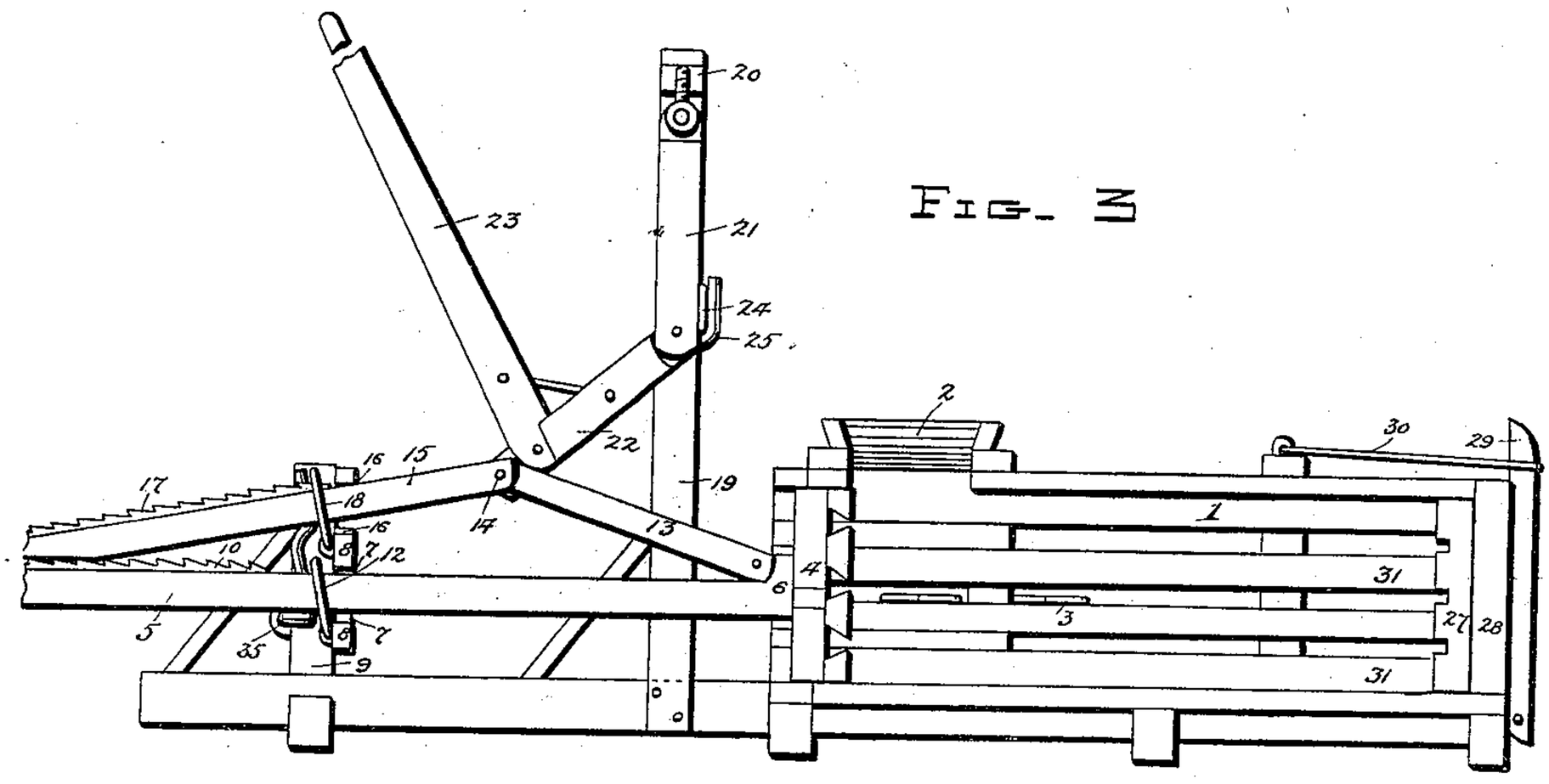
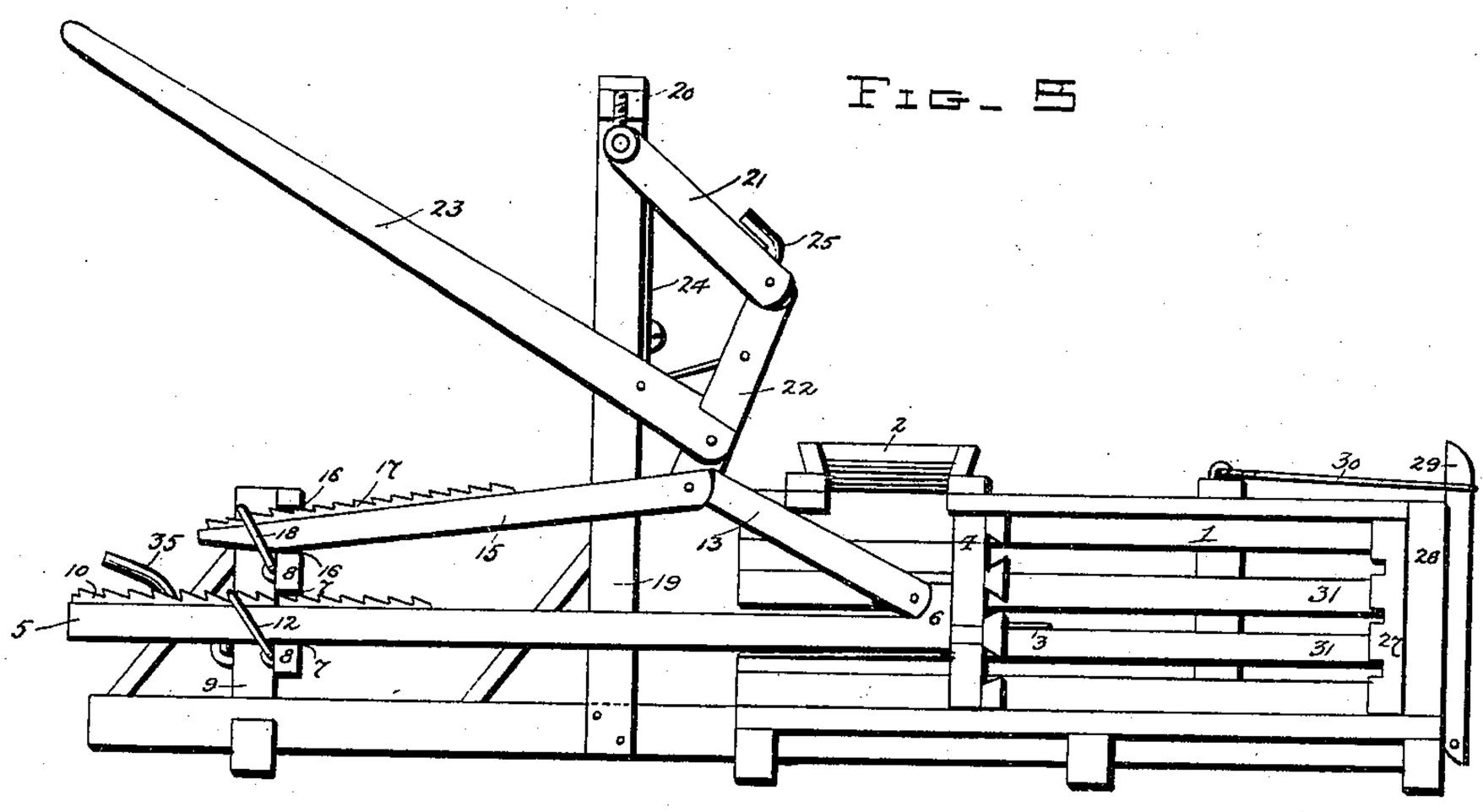


FIG. 5



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(No Model.) 3 Sheets—Sheet 3.

Fig. 6

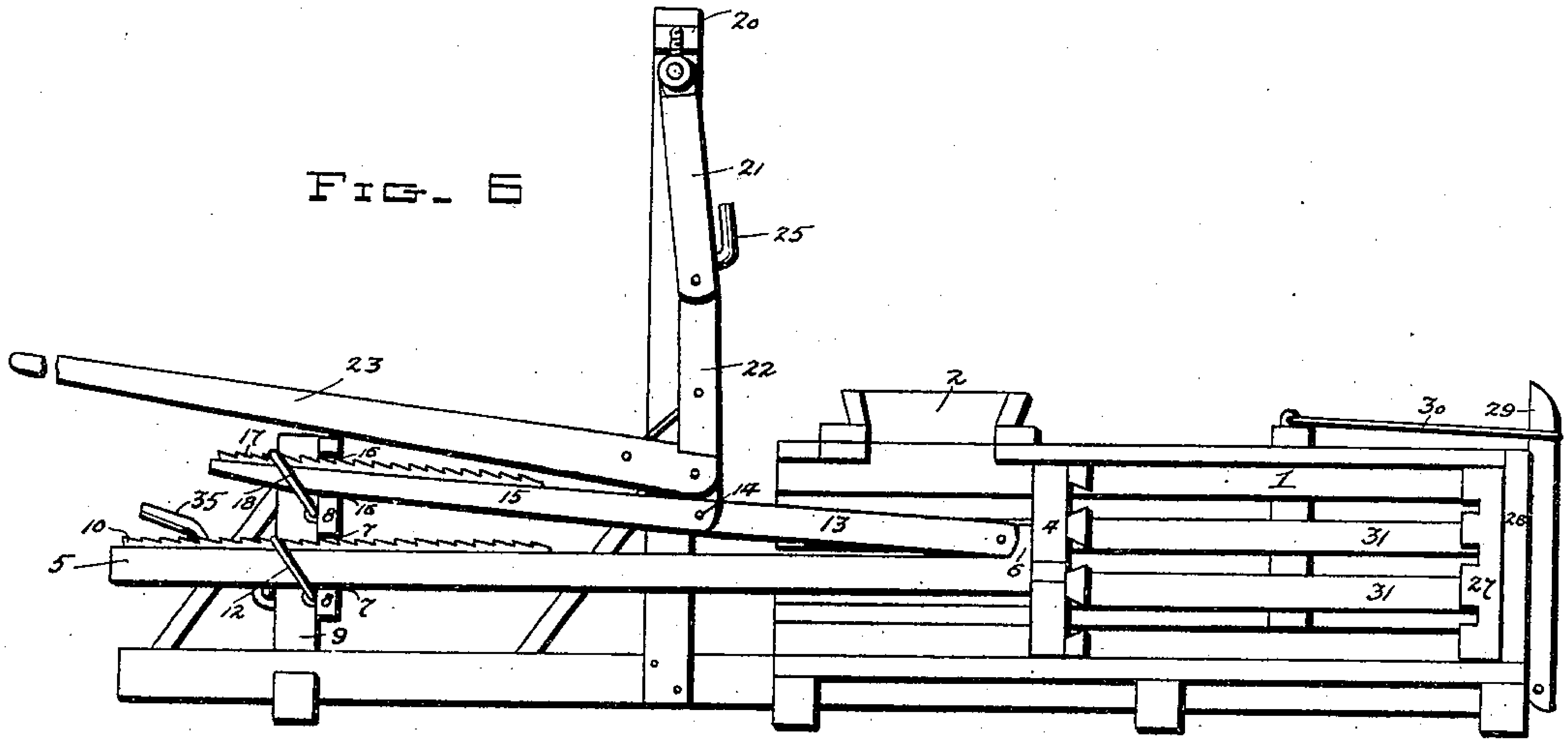


Fig. 7

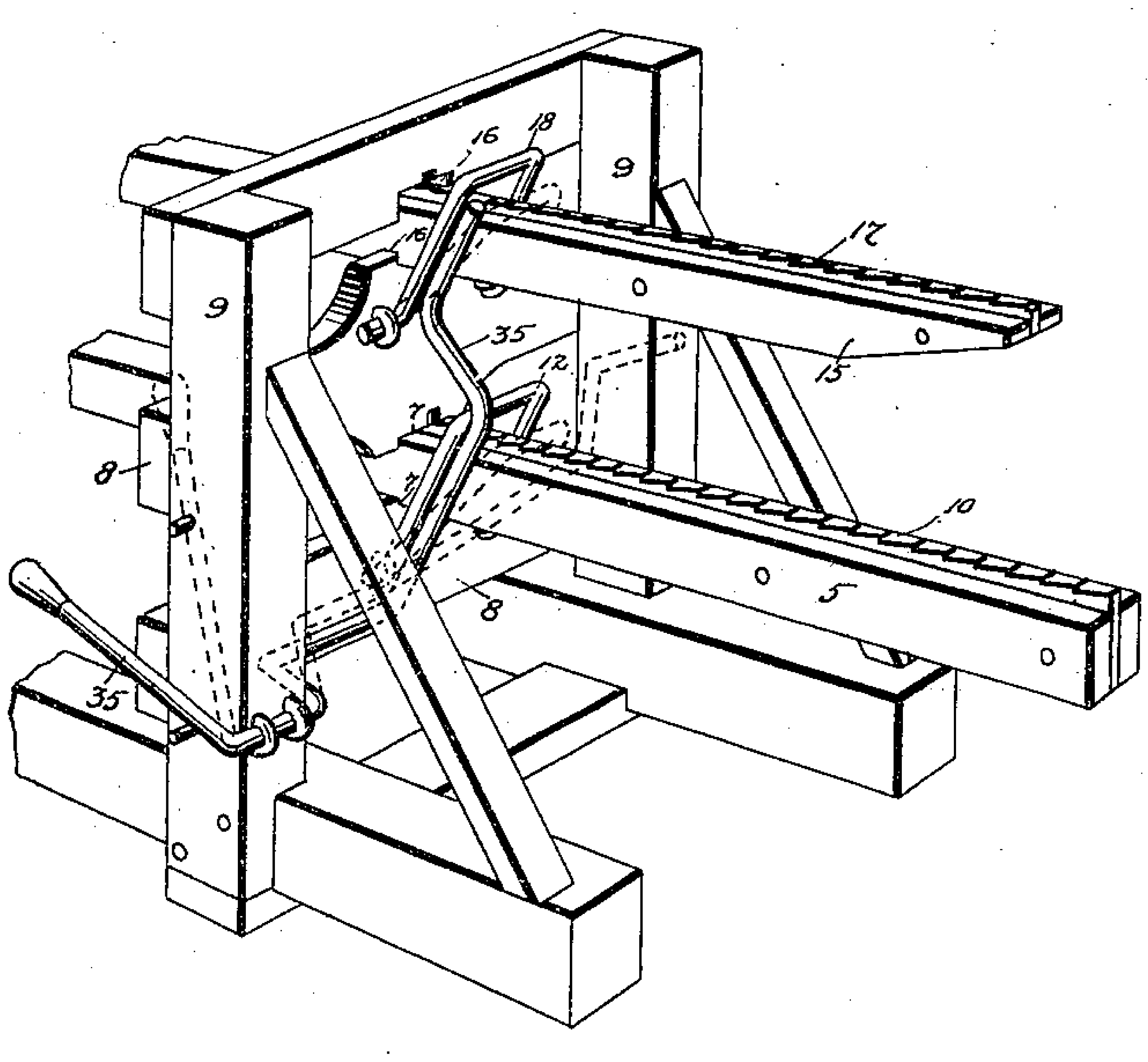
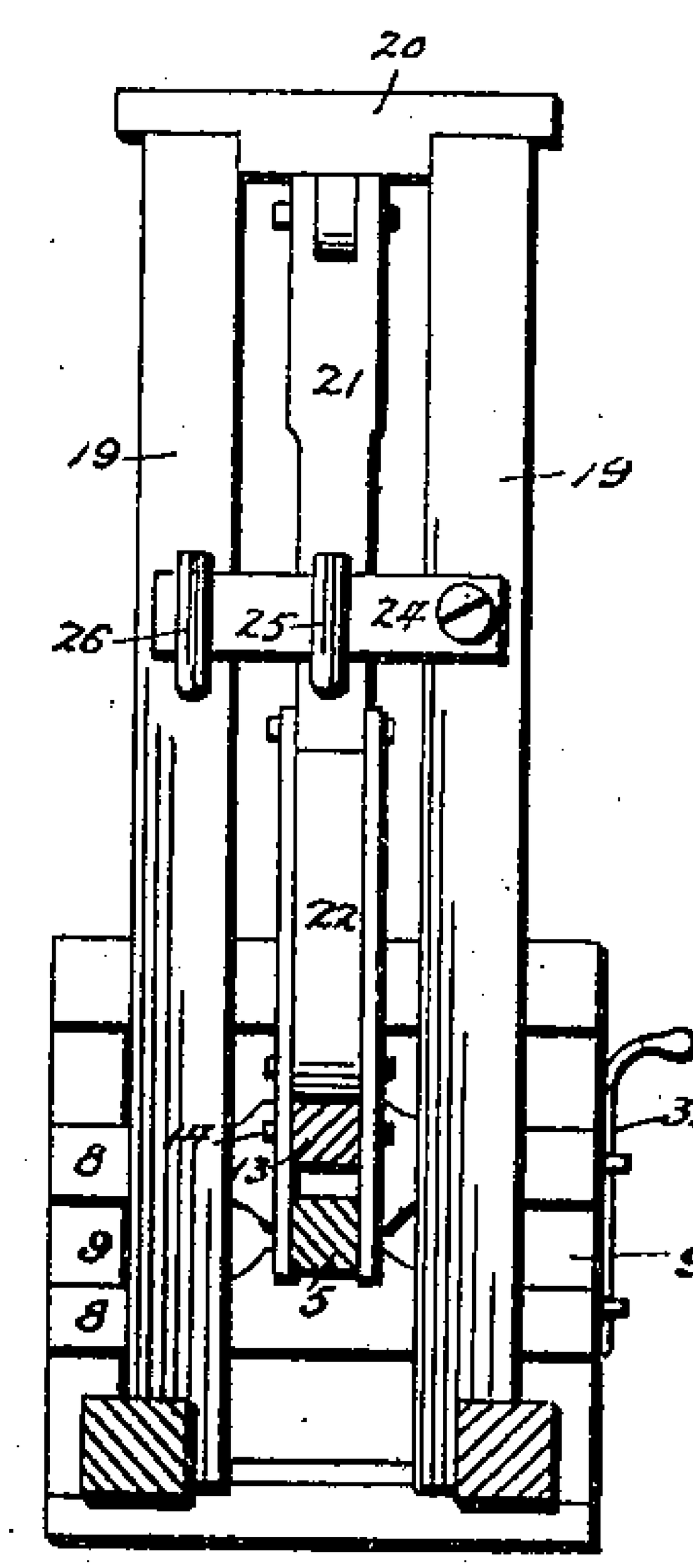


Fig. 8



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UNITED STATES PATENT OFFICE.

JOHN W. CLICK AND JOSEPH S. CLICK, OF BRIDGEWATER, VIRGINIA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 627,804, dated June 27, 1899.

Application filed June 23, 1898. Serial No. 684,246. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. CLICK and JOSEPH S. CLICK, citizens of the United States, residing at Bridgewater, in the county of Rockingham and State of Virginia, have invented certain new and useful Improvements in Baling-Presses; and we do 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 appertains to make and use the same.

This invention relates to improvements in hay-presses, and more particularly to the hand-lever class; and the object is to provide a simple, inexpensive, and effective device of this character for rapidly and economically baling hay.

To this end the invention consists in the construction, combination, and arrangement of the device, as will be hereinafter more fully described, and particularly pointed out in the claims.

The accompanying drawings show our invention in the best form now known to us; but many changes in the details might be made within the skill of a good mechanic without departing from the spirit of our invention as set forth in the claims at the end of this specification.

The same reference characters indicate the same parts of the invention in the several views.

Figure 1 is a side elevation of a hay press or baler embodying our invention. Fig. 2 is a horizontal section of the bale-chamber. Fig. 3 is a longitudinal section of the press, showing the position of the hand-lever when the follower is withdrawn in the process of forming a bale. Fig. 4 is a similar view with the follower forced forward. Fig. 5 is a similar view showing one position of the hand-lever in the process of compressing the formed bale. Fig. 6 is a similar view showing the opposite position of the hand-lever under the same conditions. Fig. 7 is a detail perspective view of the pivoted pawl mechanism. Fig. 8 is a transverse section on the line 9 9 of Fig. 1.

It may be here stated that in the operation of forming the bale the follower is reciprocated by means of the hand-lever, and after sufficient hay has been received into the bale-chamber to form a bale the further manipulation of the hand-lever intermittently advances the follower to compress the bale.

1 denotes the bale-chamber, 2 the hopper, and 3 3 a series of spring-actuated pawls extending into the bale-chamber and into the path of the hay to retain each charge of hay in place while the follower 4 is being withdrawn preparatory to the insertion of an additional charge of hay.

5 denotes a longitudinal bar formed at its forward end with a head 6, to which is fixed the follower-block 4. The rear end of this bar 5 has a bearing in the guide slots or recesses 7 7 in the cross-bars 8 8, fixed to the vertical parallel standards 9 9, which form a part of the framework supporting the bale-chamber. The upper face of the rear end of the bar 5 is provided with a ratchet-toothed rack 10, which travels in the path of the upper free end of a link-shaped pawl 12, pivoted to the lower cross-bar 8.

13 represents a lever having its forward end pivoted in the head 6 of the bar 5, and its rear end is pivoted on a bolt 14, secured in the forward end of a bar 15, the rear end of which extends through the guide-slots 16 16 in the cross-bars 8 8′, fixed to the standards 9 9. The upper face of this bar 15 is provided with a ratchet-tooth-shaped rack 17, which travels in the path of a link-shaped pawl 18, which is pivoted to the upper cross-bar 8.

19 19′ represent vertical parallel standards arising from the framework and connected at their upper ends by a transverse brace 20, to which is fulcrumed a depending lever 21, the lower end of which is pivoted to the upper end of a connecting-lever 22, having its lower end pivoted on the bolt 14, which connects the lever 13 and bar 15. A hand-lever 23 is fixed to the lower end of the connecting-lever 22, and it is adapted to reciprocate in a vertical plane to impart the proper movements to the follower-block.

24 represents a locking-lever fulcrumed on the front face of the standard 19′, and it is adapted to engage the keeper 25 on the lever 21 and an alined keeper 26 on the standard 19 to lock the lever 21 in place during the process of forming the bale, and when said locking-lever is thrown upward, as shown in dotted lines in Fig. 9, to release the lever 21

during the process of compressing the bale, as will be hereinafter more fully set forth.

27 represents the loose platen, and 28 the end gate or head fixed to the vertical parallel bars 29 29, fulcrumed at their lower ends to the frame, and the upper ends of these bars 29 29 are arranged to engage the link 30 to retain the gate in place when the press is in operation.

The longitudinal side rails 31 31, forming the sides of the baling-chamber, are left free at their outer ends to permit a lateral spring movement, and their immediate ends are formed with beveled faces 32 32, which engage the correspondingly-beveled walls 33 33 of the vertical parallel recesses 34 34 in the gate 28 to retain the ends of the rails in place against the lateral pressure exerted by the bale.

35 represents a bell-crank lever fulcrumed on one of the standards 9, and its longer arm projects into the path of both of the pivoted pawls 12 18, so that both pawls may be simultaneously manipulated to engage or release their respective racks at will.

The operation is as follows: The lever 21 being locked in place, as shown in Fig. 8, the pawls 12 and 18 raised out of engagement with their respective rack-bars, and the hand-lever raised to withdraw the follower to the back limit of its stroke, as shown in Fig. 3, a charge of hay is inserted in the forward end of the bale-chamber through the hopper 2, and by depressing the hand-lever the lower end of the lever 22 is carried forward, forcing with it the lever 13. At the same time the follower-block is forced forward, carrying the charge of hay with it into the bale-chamber, as shown in Fig. 4. The hand-lever is then raised to retract the follower-block and the next charge of hay inserted and the operation repeated until the amount of hay in the chamber is sufficient to form a bale. When this has been done, the pawls 12 and 18 are released, so as to engage their respective racks, and the locking-lever 24 raised to release the depending lever 21.

By referring to Fig. 5 it will be seen that the lever 13 and bar 15 form a toggle-joint, as also do the levers 21 and 22, so that the compound leverage of a double-toggle-joint lever is exerted on the follower-block when the hand-lever is depressed, as shown in Fig. 6, the bar 5, the rack 10, and its pawl 12 holding the follower against any backward movement while the hand-lever is being raised, and when it is raised to its full limit the rack 17 and its pawl 18 retain the bar 15 in this position, so that when the hand-lever is again depressed the entire movement is transmitted to the follower-block to force it forward, and by the arrangement of the duplex system of toggle-joint levers one man can compress a bale within a compass which will meet the commercial requirements of this class of merchandise.

Having thus fully described our invention, what we claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. A baling-press comprising the bale-chamber, the follower-block traveling in said chamber, the racked bar, 5, fixed to said block, and the lever, 13, pivoted to said bar, 5, in combination with the racked bar, 15, pivoted to said lever 13, the pawls, 12 and 18, projecting into the path of the teeth on said bars 5 and 15 respectively, the depending lever, 21, fulcrumed on a fixed support and the lever, 22, connecting the free end of the depending lever and contiguous ends of the lever, 13, and bar, 15, and means for operating said levers, substantially as and for the purpose set forth.

2. A baling-press comprising the bale-chamber, the follower-block, the racked bar, 5, fixed to said block, and the lever, 13, pivoted to said racked bar, in combination with the racked bar, 15, pivoted to said lever 13, the pawls, 12 and 18, projecting into the path of the teeth on said rack-bars 5 and 15 respectively, the depending lever, 21, fulcrumed on a fixed support, means for locking and releasing said depending lever, the lever, 22, connecting the lower end of said depending lever and the contiguous ends of the lever, 13, and bar, 15, and the hand-lever fixed to said connecting-lever, substantially as and for the purpose set forth.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JOHN W. CLICK.
JOSEPH S. CLICK.

Witnesses:
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JAS. R. SHIPMAN.