

(No Model.)

3 Sheets—Sheet 1.

F. FREY.
BALING PRESS.

No. 387,508.

Patented Aug. 7, 1888.

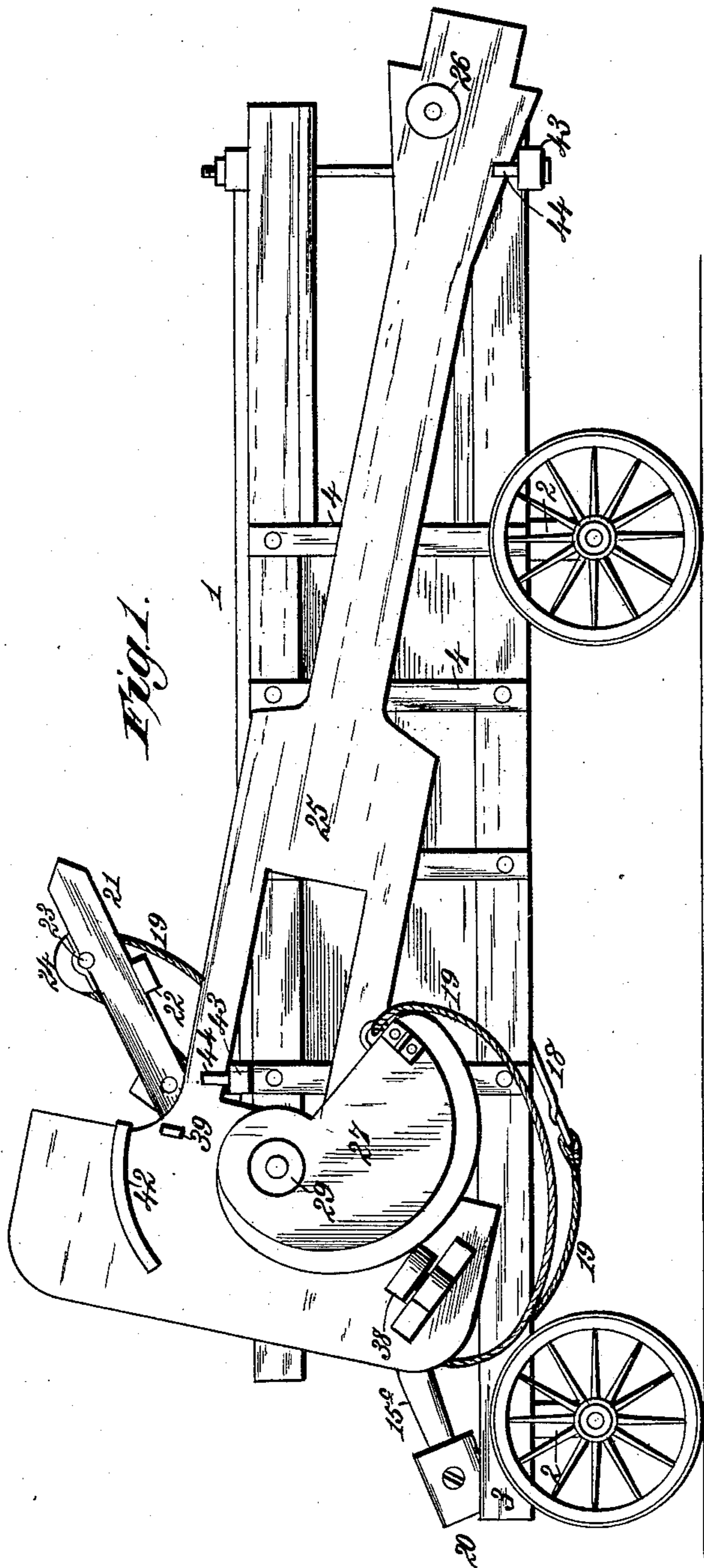


Fig. 1.

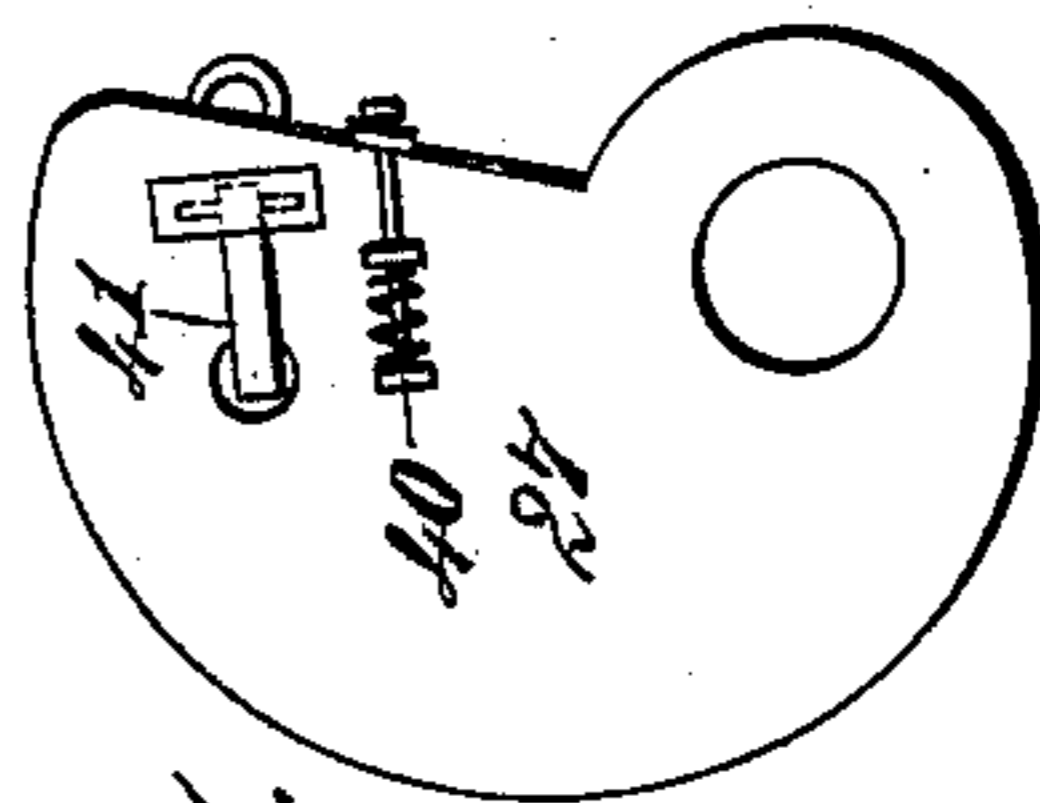
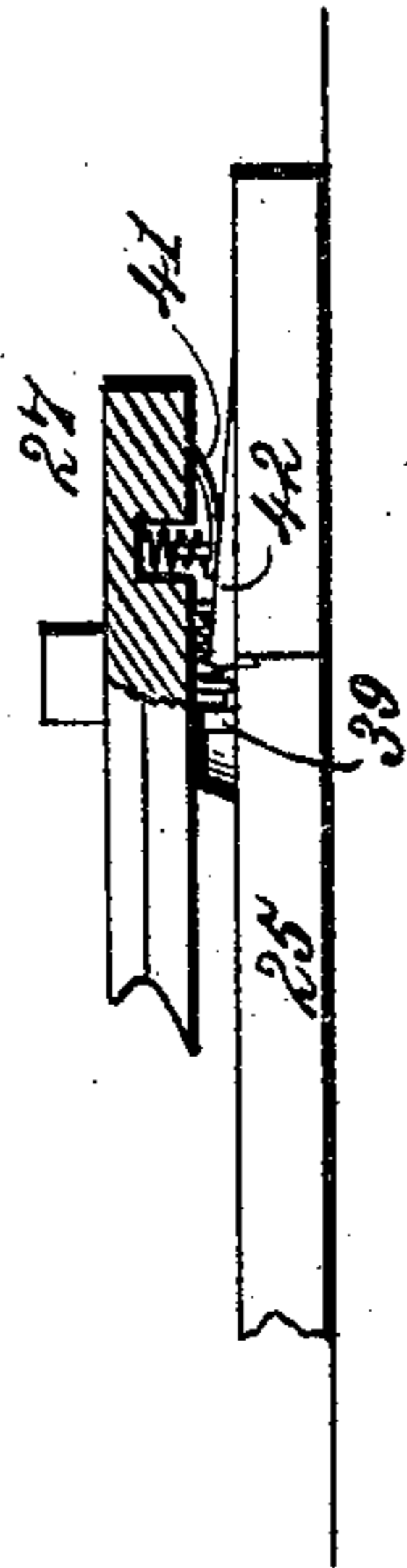


Fig. 2.

Fig. 3.



Witnesses.
Robert Emmett,
J. A. Rutherford.

Inventor,
Franklin Frey,
By James L. Norris,
Atty.

(No Model.)

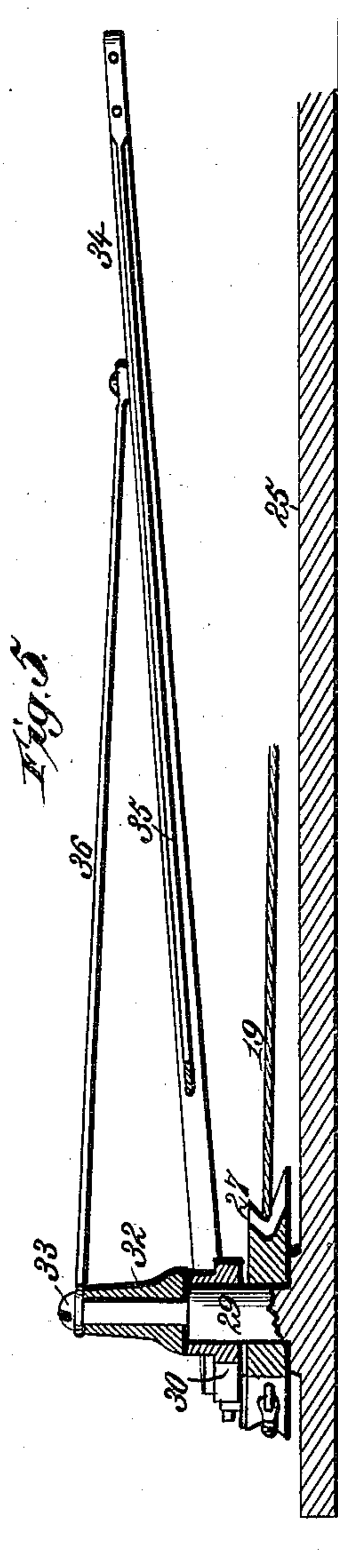
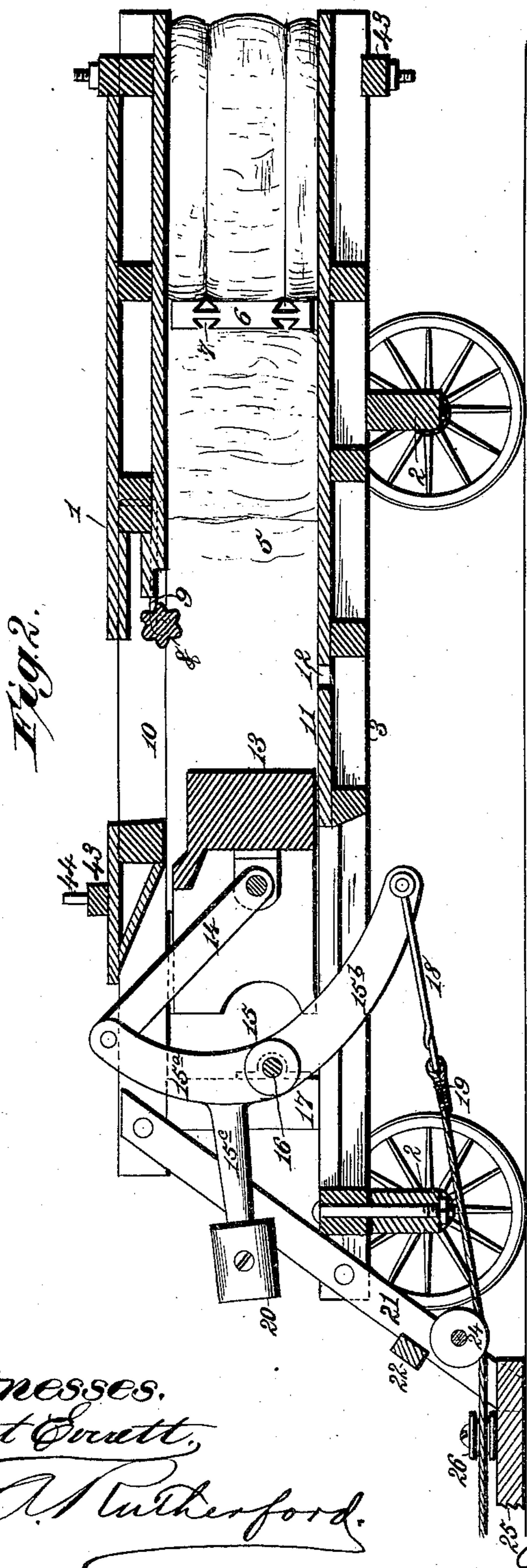
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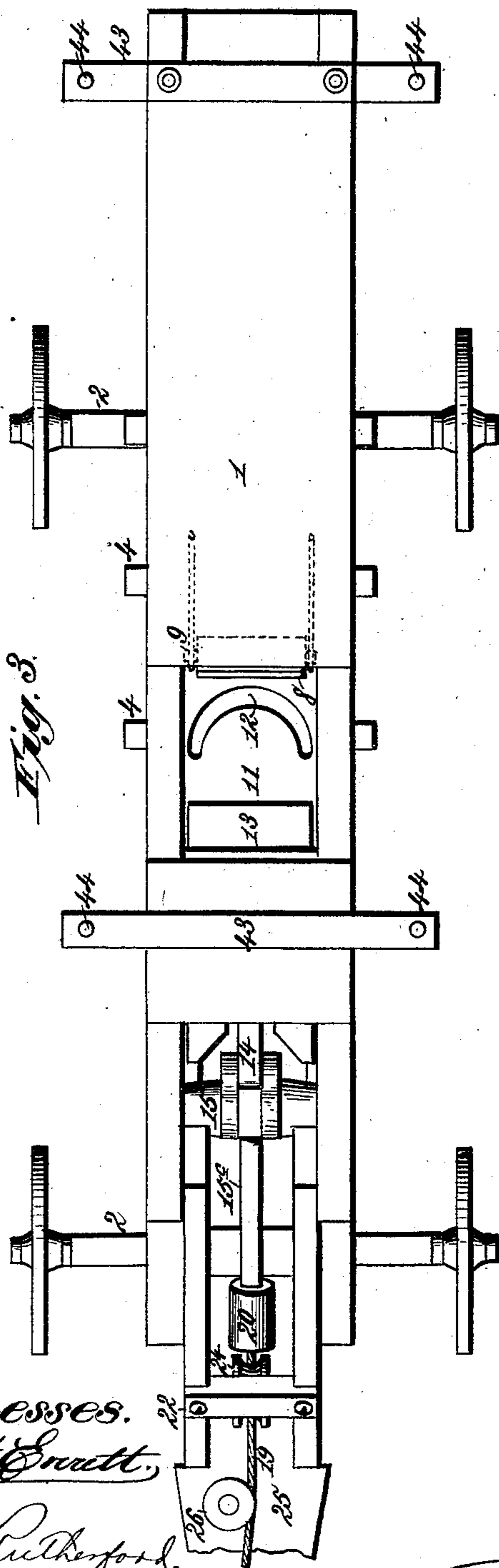
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3 Sheets—Sheet 3.

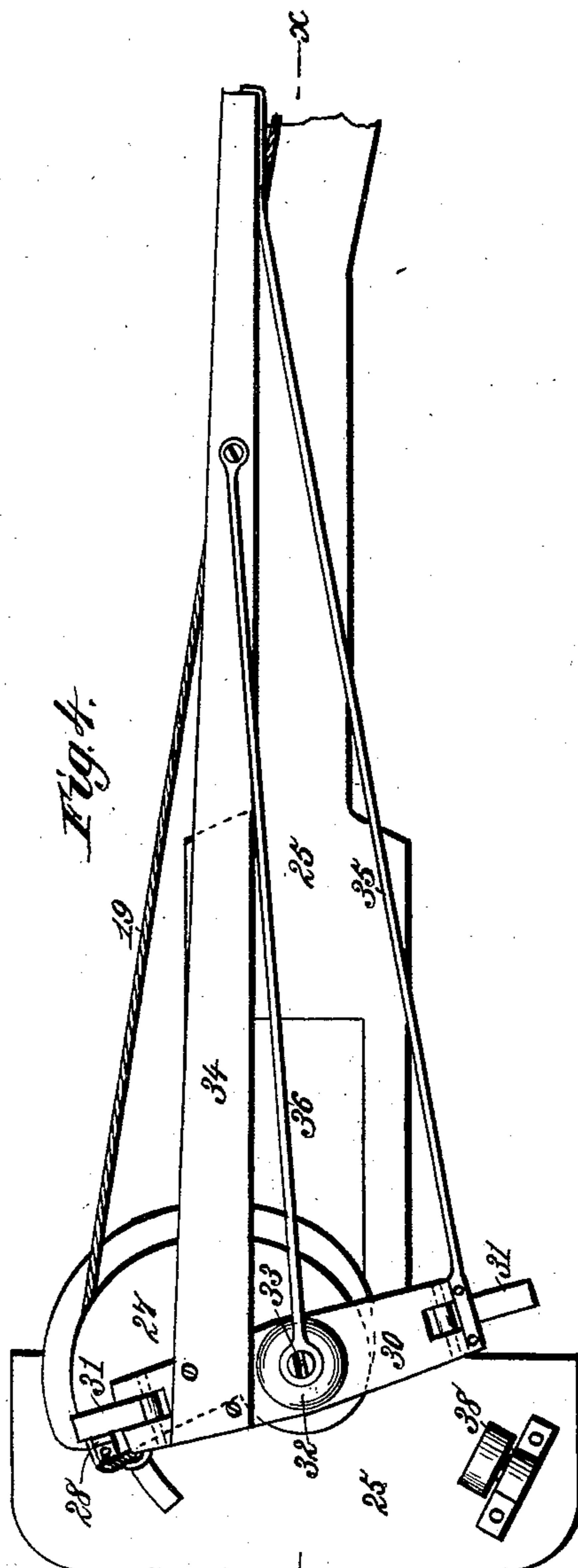
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UNITED STATES PATENT OFFICE.

FRANKLIN FREY, OF QUINCY, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, OF TWO-THIRDS TO JOHN O. HUNSACKER AND CHARLES M. SWAIN, BOTH OF SAME PLACE.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 387,508, dated August 7, 1888.

Application filed March 27, 1888. Serial No. 268,698. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN FREY, a citizen of the United States, residing at Quincy, in the county of Adams and State of Illinois, have invented new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to portable horse-power presses for baling hay and other materials, and it comprises a press in which a horizontally-movable follower is actuated through a lever and cable from a horse-power located in line with and abutting against the braced rear end of the press, said power being continually acting in one direction and provided with mechanism for automatically releasing the horse-power cable when the follower has completed its stroke and for again engaging and drawing on the cable for the next forward stroke of the follower.

The invention consists in the construction and combination of parts in a portable and detachable horse-power press, as will be hereinafter described, and then pointed out in the claims.

In the annexed drawings, illustrating the invention, Figure 1 is a side elevation of my improved baling-press mounted on wheels and with the horse-power mechanism suspended on the sides of the machine, which is thus made ready for transportation. Fig. 2 is a vertical longitudinal section of the press. Fig. 3 is a plan of the press and a portion of the horse-power in operative position; Fig. 4, a detail plan view of the horse-power; Fig. 5, a sectional view on the line $x x$, Fig. 4; Fig. 6, a detail side view, partly in section, of the eccentric pulley on one end of the beam or platform; and Fig. 7, a detail inverted plan view of the eccentric pulley.

The body of the press 1 occupies a horizontal position on wheeled axles 2, and is provided with supporting-sills 3 and vertical side braces, 4, constructed and arranged in any suitable manner. In one end of the press is a baling-chamber, 5, of ordinary construction, and in this chamber, as usual, are placed movable transverse platens 6, which are ejected with the bale and have grooves 7 for receiving the cords that confine the baled material.

At the rear or inner upper edge of the baling-chamber 5 is a longitudinally-fluted roller, 8, journaled in spring-bearings 9, so as to be capable of yielding somewhat to the pressure of the hay or other material forced into the chamber. As the material to be baled is forced into the chamber, it comes in contact with this roller 8 and causes it to rotate downward and inward, so as to fold the upper portion of the material inward, and thereby make a smooth bale. This roller also prevents cramping or binding of the pressed material at the entrance into the baling-chamber.

In the rear of the baling-chamber 5 is an open feed-space, 10, through which is fed the material to be pressed. This space 10 has a floor, 11, which is continuous with the floor of the baling-chamber 5 and affords a support for the material to be forced therein. In the bottom of the feed-space 10 is a curved or semicircular slot, 12, through which dirt and extraneous matter can find an exit.

The material to be pressed and baled is placed in the feed-space 10, and is forced therefrom into and through the baling-chamber by means of a horizontally-movable follower, 13, that is supported on the frame-work or press-body. The rear end of the follower 13 is slotted and recessed to receive the pitman 14 and a portion of the connecting-lever 15, through which said follower is actuated. The lever 15 is fulcrumed at 16 to strong vertical struts 17 near the rear end of the machine-frame. This lever 15 is a three-armed lever, as shown. Two of the arms, 15^a and 15^b, are curved and project toward the follower, the upper arm, 15^a, being pivotally connected with one end of the pitman 14, which has its other end pivoted in the recessed portion of the follower, while to the lower arm, 15^b, is pivoted a bail, 18, to which is attached one end of a cable, 19, that connects with the horse-power. The arm 15^c of the three-armed lever 15 projects rearward from above the lever-fulcrum 16, and to the end of this arm is attached a weight, 20, that is adjustable thereon to any suitable point, so as to cause the lever to swing downward and back promptly, and thereby retract the follower when the horse-power cable is released.

To the rear end of the press body or frame

1, on each side, are secured inclined braces 21, the lower ends of which extend to the ground. Near their lower ends these braces are connected by a cross-piece, 22, and their under sides or edges are provided with bearings 23 for the shaft of a guide-pulley, 24, beneath which the cable 19 passes.

The lower ends of the inclined braces 21 serve as an end support or abutment for one end of a horizontal beam or platform, 25, on the other end of which is located the horse-power. This beam or platform 25 is provided near its press end with a vertically journaled guide-pulley, 26, for the horse-power cable. Near the other end of the horse-power platform 25 is pivoted a horizontally-movable eccentric pulley, 27, to which the horse-power cable 19 is secured, and near the point of cable attachment is a lug, 28, which is located on the upper face of said eccentric pulley. The eccentric pulley is pivoted on a fixed post, 29, and on this post, above said pulley, is also pivoted a double-armed lever, 30, in each end of which is pivoted a latch, 31, that is adapted to engage the lug 28 on the upper face of the eccentric pulley. Above the lever 30, on the post 29, is an elongated nut, 32, held in place by a vertical screw-bolt, 33, which can be withdrawn for the purpose of disconnecting the pulley, lever, and attached parts. To one arm of the lever 30 is secured an inclined sweep, 34, which is provided with a brace, 35, that extends to the other arm of the lever 30, and with another brace, 36, that connects with the upper end of the post 29, on which the lever and eccentric pulley are pivoted.

The draft-animal is hitched to the sweep 34, and on moving in a circular path rotates said sweep and attached double-armed lever 30, thereby bringing the latches 31 alternately into engagement with the lug 28, so as to rotate the eccentric pulley 27 and draw on the cable 19, which in turn draws on the lower arm, 15^b, of the follower-lever, and through the pitman 14 forces the follower 13 into the baling-chamber of the press. The continued rotation of the sweep 34, attached lever 30, and eccentric pulley 27 brings the latch 31, which for the time is in engagement with the lug 28, into contact with a cam or roller, 38, suitably located on the platform 25, and thereby raises said latch, so as to disengage it from the lug 28 and relieve the tension on the cable 19 just as the follower completes its forward stroke. The horse-power cable 19 being thus released or relieved from strain, the weighted arm 15^a of the follower-lever causes said lever to fall back and retract the follower, and the lower lever-arm, 15^b, in moving toward the follower draws on the cable 19 and returns the eccentric pulley 27 to its normal position without affecting the sweep or necessitating any cessation in its movements. The movement of the sweep and attached lever 30 therefore continues with the forward movement of the draft-animal, and the other latch 31 in turn engages the lug 28 and actuates the eccentric pulley 27, cable 19,

lever 15, pitman 14, and follower 13 until this latch is also released by coming in contact with the cam 38, the latches 31 at the opposite ends of the lever 30 being thus caused to act alternately on the eccentric pulley 27 and attached cable 19, so as to accomplish two beats of the follower in each rotation of the sweep. It is obvious, however, that one of the latches 31 can be dispensed with, or it may be thrown back or held in any suitable way out of possible engagement with the lug 28, thus leaving only one latch to engage said lug, and thereby make the machine single-acting or capable of accomplishing only one stroke of the follower in each rotation of the sweep.

In order to prevent any jar or strain from the recoil of the eccentric pulley 27 when the latch 31 and lug 28 are disengaged by the cam 38, a brake mechanism may be provided. A simple form of brake consists of a stop-lug, 39, located on the platform 25 beneath the eccentric pulley 27, and a spring-bolt, 40, supported in suitable bearings on the under side of said eccentric pulley, so as to come in contact with the lug 39 when the eccentric pulley recoils. This brake or cushion stop is advantageously supplemented by a spring friction-brake consisting of a curved spring, 41, attached to the under side of the eccentric pulley 27 and adapted to exert a frictional pressure during the recoil of the eccentric on an inclined bearing-surface or friction-way, 42, formed on or attached to the platform 25 in the path of said spring.

It will be observed that the horse-power, when arranged for operation, is in a direct line with the press, so as to be capable of exerting its action on the follower 13 in the most convenient and direct manner. In order to steady the horse-power, its platform 25 should be secured to the ground by stakes or otherwise, so as to prevent lateral or endwise movement. The inclined braces 21 serve a useful purpose in this respect, and with a stake driven into the ground at the extreme end of the platform and at suitable points on its side it can be held firmly without any difficulty.

When it is desired to pack the horse-power on the press for transportation, the screw-bolt 33 and nut 32 will be detached from the post 29, thereby enabling the sweep and attached lever to be disconnected, and the platform 25 can be supported on one side of the press-body, as shown in Fig. 1, the press-body being provided with cross-beams 43, having pins 44 in their ends to facilitate the attachment and support of said platform. The sweep 34 can, if desired, be likewise supported on the opposite side of the press-body. In making the press ready for transportation the inclined braces 21 are disconnected from the sills of the press-body and are turned upward and backward onto the machine-frame.

What I claim is—

1. The combination, in a baling-press having a horizontally-movable follower, of a three-armed lever fulcrumed back of said follower,

a pitman for connecting the follower with the upper arm of said lever, a cable connecting the lower arm of the lever to a horse-power, and a weight on the rear arm of the lever, substantially as described.

2. The combination, in a baling-press having a horizontally-movable follower, of a horse-power located in a direct line with the press, a three-armed lever through which the follower is actuated, a pitman connecting one arm of the lever with the follower, a cable connecting another arm of the lever with the horse-power, and a weight on another arm of the lever to retract the follower when the horse-power cable is relieved, substantially as described.

3. The combination, in a baling-press having a horizontally-movable follower, of a horse-power comprising an eccentric pulley having a lug, a lever having a latch to engage said lug, a sweep to actuate said lever, a cable connecting the eccentric pulley to the follower-lever, and a cam to release the latch that engages the lug on the eccentric pulley, substantially as described.

4. The combination, in a baling-press hav-

ing a horizontally-movable follower, of a lever connected with the follower, a horse-power comprising a cable attached to the follower, an eccentric pulley having a lug and connected with the cable, a lever having a latch to engage the lug on the pulley, a cam to release the latch, a sweep, and a brake mechanism to ease the recoil of the pulley, substantially as described.

5. The combination, with the horizontally-movable follower 13 and weighted lever 15, of the cable 19, the guide-pulleys 24 and 26, the eccentric pulley 27, having lug 28, the lever 30, having latches 31, the sweep 34, and the cam 38, substantially as described.

6. The combination, with the eccentric pulley 27, of the stop 39, spring-bolt 40, friction-way 42, and spring-brake 41, substantially as described.

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

FRANKLIN FREY.

Witnesses:

ALBERT W. WELLS,
L. E. EMMONS, Jr.