

910,741.

H. M. TALLMAN.

BALING PRESS.

APPLICATION FILED NOV. 30, 1907.

Patented Jan. 26, 1909.

4 SHEETS—SHEET 1.

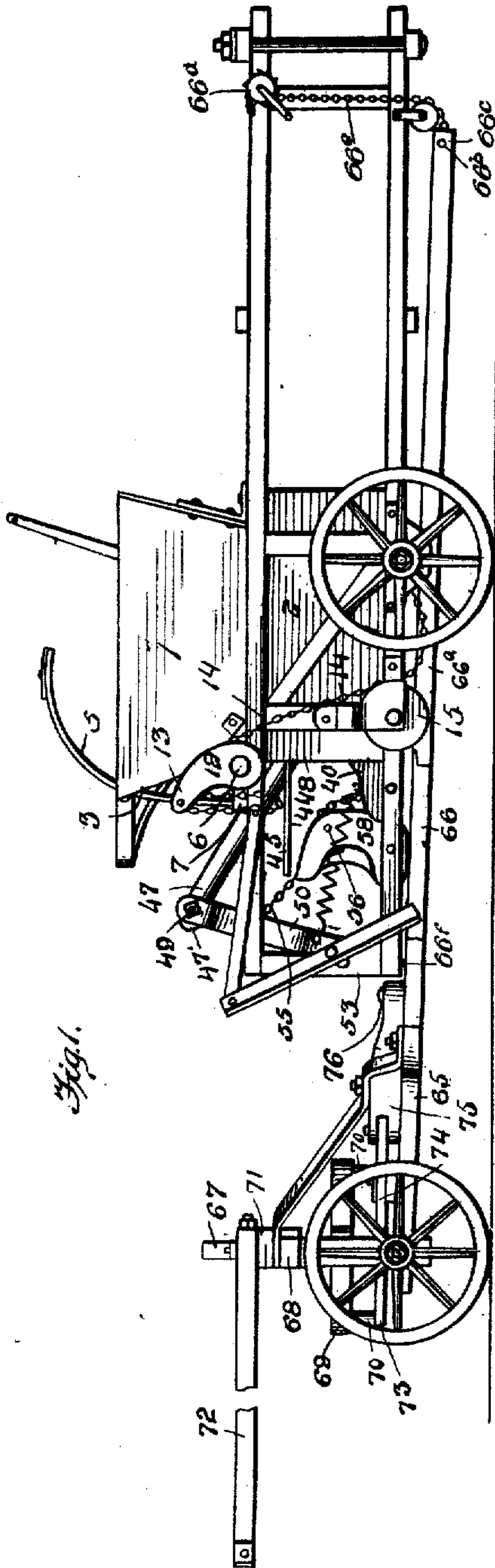


Fig. 1.

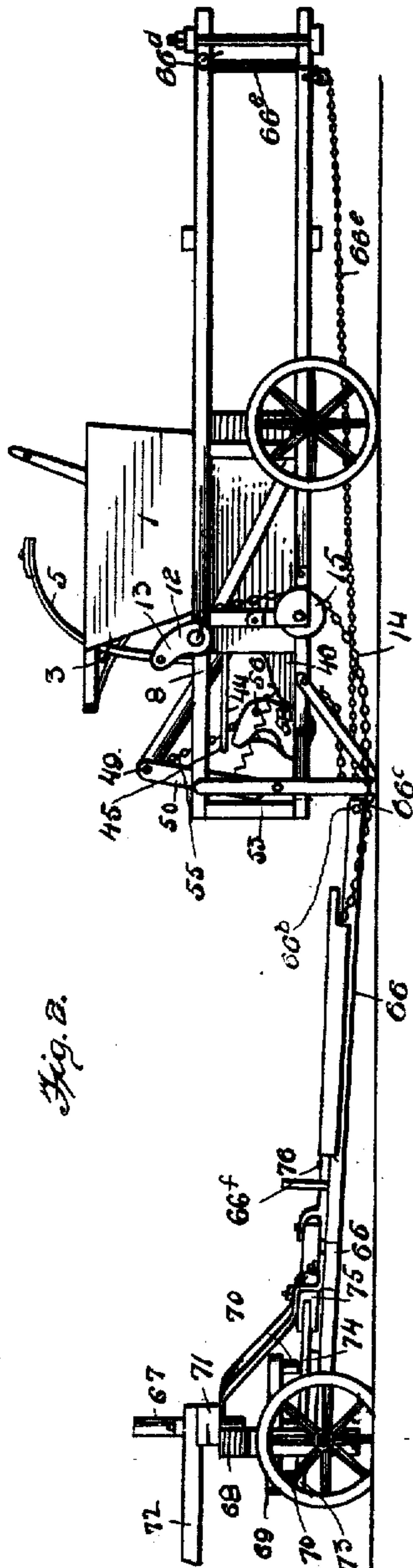


Fig. 2.

Witnesses

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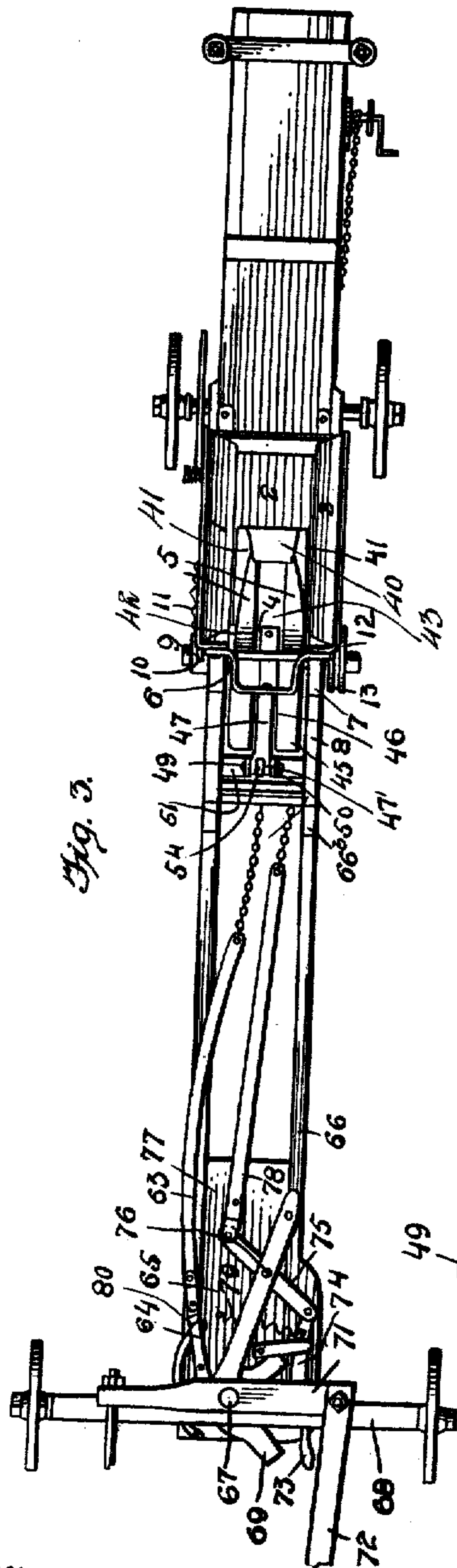


Fig. 3.

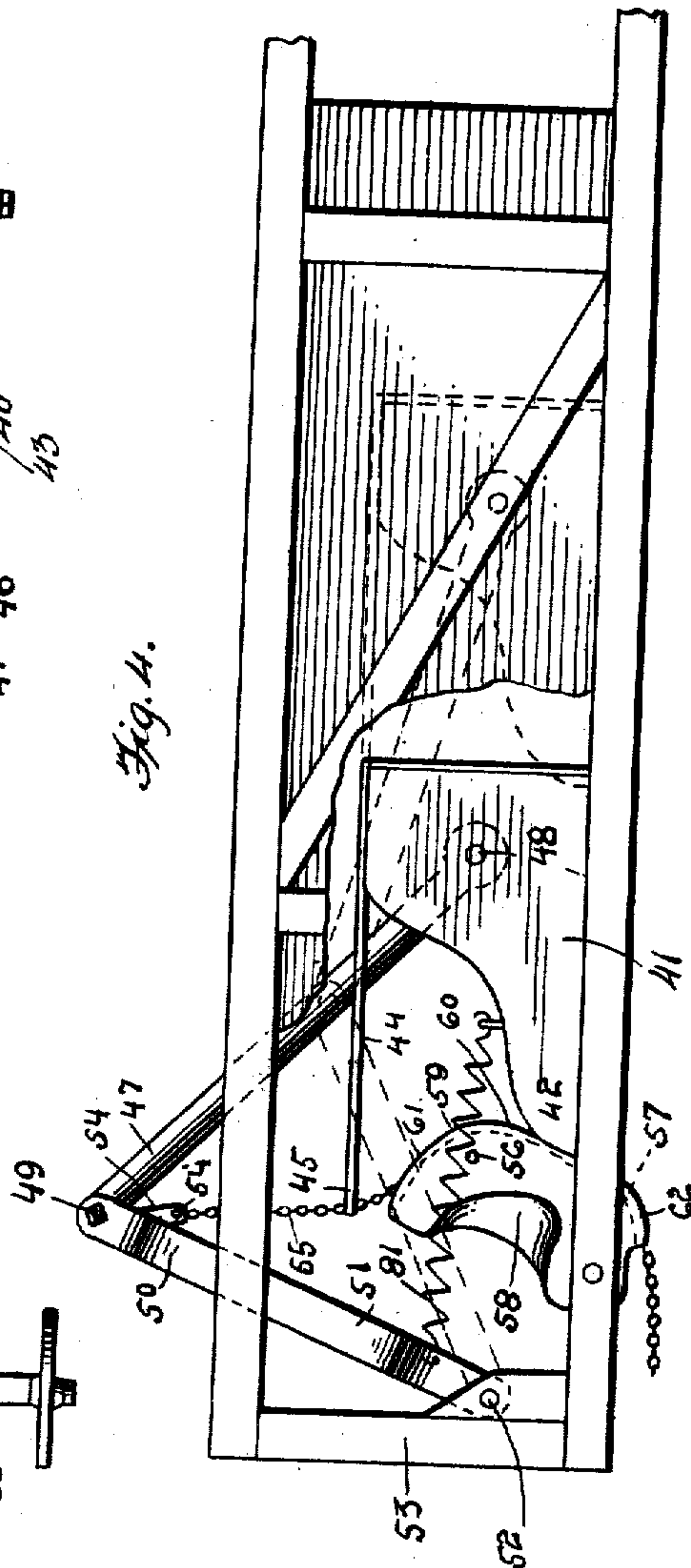


Fig. 4.

Witnesses

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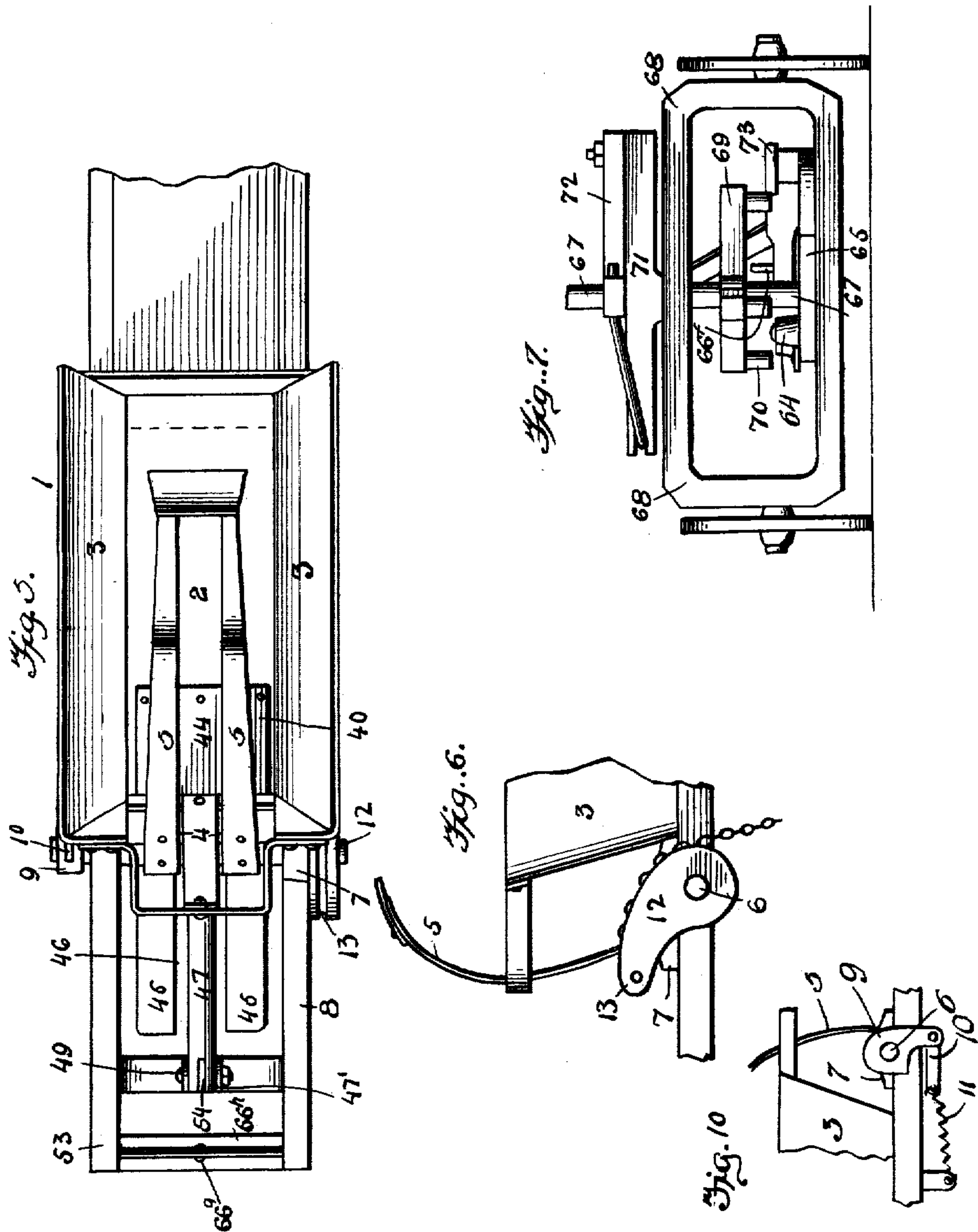
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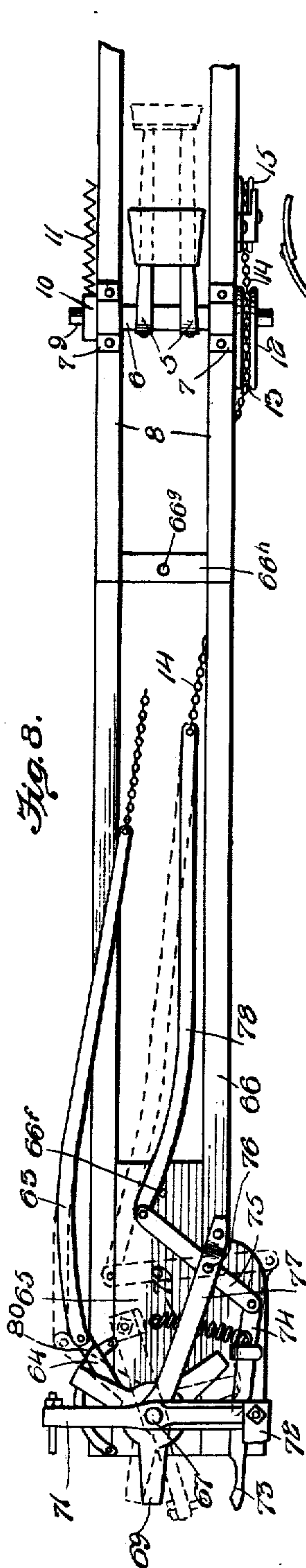


Fig. 8.

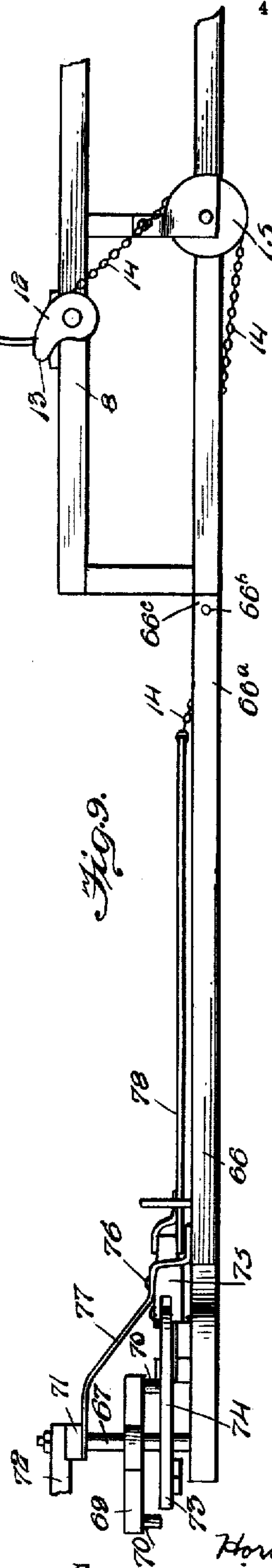


Fig. 9.

Witnesses
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UNITED STATES PATENT OFFICE.

HORACE M. TALLMAN, OF SHELBYVILLE, ILLINOIS.

BALING-PRESS.

No. 910,741.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed November 30, 1907. Serial No. 404,563.

To all whom it may concern:

Be it known that I, HORACE M. TALLMAN, a citizen of the United States, residing at Shelbyville, in the county of Shelby and State of Illinois, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification, reference being had therein to the accompanying drawing.

My present invention relates to improvements in baling presses, and one of the objects is the provision of a means whereby I obtain a maximum stroke of the plunger in order to obtain a large feed opening with a minimum stroke of the trip-lever, the said mechanism being preferably cam shaped so that as it moves the pitman forward very rapidly, the draft being very close to the center or the start, the pitman travels farther and comes up to the heavy pressure, and the cam by this time having passed over the center before coming to the heaviest pressure at this point, gains in leverage and decreases the draft. I have found by experience that the cam must be what I term oblong shaped instead of round, as it is the only means whereby I can secure enough movement for a three beat baling press, and further by this peculiar shaped cam I am able to gain very much in the quick movement of the pitman when there is practically little draft, and at the same time get three beats as easy as it is possible to secure two with a plain round cam or wheel.

Another object of my invention is the provision of means for operating the cam and pitman and to also operate a self-feeding mechanism at a period when the plunger is in its farthest forward position, when a greater amount of the material to be baled is fed within the baling chamber.

Another object of my invention is the provision of means whereby the relative length of the baling press may be shortened during transportation, or in other words, my baling press is telescoping.

In the accompanying drawings:—Figure 1 is a side elevation of the complete press telescoped and ready for transportation. Fig. 2 is a similar view of the press ready for operation. Fig. 3 is a top plan view thereof. Fig. 4 is an enlarged broken side elevation of the press near the baling chamber showing the operation of the cam, the extreme forward position thereof being shown

in dotted lines. Fig. 5 is an enlarged top plan view of the forward end showing the self feed mechanism in operating position. Fig. 6 is an enlarged detail view of the self feed mechanism. Fig. 7 is a front elevation of the forward end of the baling press. Figs. 8 and 9 are views to clearly show the feeding mechanism. Fig. 10 is a detail view of the spring controlled side of the self-feed mounted upon its side of the baling chamber.

Referring to the drawings:—The numeral 1 designates the hopper which leads to the baling chamber 2. In the forward inclined wall 3 of the hopper I provide the slots 4 through which project the curved arms 5, of the self-feed device, these arms are secured to the rock-shaft 6, which is journaled in bearings 7, upon the frame 8. Upon one end of this shaft is a crank 9 in which is pivoted a link 10, which has acting thereon a spring 11, which normally holds the self-feeding arms above the hopper (Fig. 10). Upon the other end of the rock-shaft, I mount the cam arm 12, which is provided with the groove or slot 13, in which is connected the end of the chain 14, which passes downwardly and around the pulley 15, journaled upon the exterior lower side of the baling chamber. The mechanism for operating this chain will be explained hereafter.

Slidingly mounted within the baling chamber is the plunger 40, which consists of the two side walls 41, which taper from the upper edge to the lower rear edge and form the projections 42, provided with a slot 43 therebetween. Upon the upper face of this plunger is provided a plate 44, having the two terminals 45, which provide a slot 46 for the passage of the pitman or arm 47, which is pivotally connected at 48, within the plunger and has its other end pivotally connected at 49, to the reduced end of the yoke 50, the extended ends 51, being pivoted upon the shaft 52, between the standards 53 of the frame.

Upon the pivot 49, I mount the swinging short link 54, the same being in the slotted end 47' of the pitman. To the free end 54' of this link is connected a chain 55, which passes down and is connected by means of a pin 56 in the groove 57, of the oblong shaped cam 58, the pin 56 being at a point within but opposite the knuckle 59 of the cam, which is further provided with the

straight portion 60, which is approximately at right angles with the short end 61 of the cam, the straight portion 60 further terminating in the rounded curved portion 62, for the reception of the remainder of the chain which passes forward and is connected to the curved bar or link 63, pivotally connected to the trigger arm 64, which is connected to the upper forward portion of the platform 65, which is carried by the telescoping frame 66.

Pivoted to the forward end of the frame 66 by means of the vertical shaft 67 is the hollow rectangular frame 68 carrying the front axles and wheels and providing a space for the rotation of the three fingers or trip lever 69. Each arm is provided upon its end with the downwardly projecting roller studs 70, by means of which the self feed and pressing mechanism are operated. To the upper extreme end of the vertical shaft is mounted or secured a cross bar 71 to which is connected the usual sweep 72. As the sweep rotates the shaft, the trip lever is also rotated so that one of its studs 70 will engage the notched end 73 of the trip block 74, which is pivoted to one end of the double lever 75, which is pivoted at 76 to the bracing-plate 77, and the frame 66, its other end being pivotally connected to the curved link or bar 78, which is connected to the chain 14 which operates the feeding-arms. It will be noted that the studs 70 are pocketed in the trip-block slightly off its center, the spring 79 holding the trip-block against the stud, and while the stud is thus approaching the feeding-arms which move into the hopper and are released just as the preceding stud 70 is engaging the shouldered portion 80 of the trigger arm of the plunger operating mechanism; and as the sweep continues in its movements, the link and chain connected to the cam and plunger operating device is pulled forward, pulling the cams downwardly until the pitman of the plunger is in a horizontal plane, at which time the trigger is released and the spring 81 returns the plunger to the position shown in full lines, Fig. 4.

The telescoping feature of my press, consists of drawing the inner end of the platform or frame 66, below the baling chamber, by means of a windlass 66^a, carried by the baling chamber. This is attained by connecting the strips 66^a, together at their ends 66^b, by means of the bar 66^c, the chain 66^e, being connected to said bar and passing to the windlass, which as it is wound, draws the ends 66^b, below the baling chamber and holds them elevated during transportation. In order to assist in holding the platform thus telescoped, the pin 66^f, carried by the platform 66, enters the opening 66^d, of the cross-piece 66^h, of the forward end of the baling chamber's frame.

From the foregoing description taken in connection with the drawings, the operation

of my baling press is fully understood, and it is evident that I provide a new and novel means of operating the knuckle or toggle jointed plunger, the peculiar shape of the oblong cam, being produced so that it when operated, moves the piston rod forward, the draft chain being connected in such a position, that when the same is pulled upon the cam is moved to pull the toggle joint of the piston downwardly, thus moving the piston toward the pressing action, this action straightening the toggle and giving the heaviest pressure with minimum power, the leverage being increased by the peculiar form of the cam, just as the toggle is being straightened.

Another novel feature resides in the peculiar construction of self-feed and the mechanism for operating the same, whereby its trigger or trip-block is held pocketed against the trip lever, that is, the stud 70 of the trip lever 69, enters the notch of the end 73, and is thus pocketed until the feeding arms have reached their lowest point within the baling chamber, the plunger at this point being in its farthest forward position, giving a greater space for receiving material to be baled.

What I claim as new and desire to secure by Letters Patent, is:—

1. In a baling press, the combination of a plunger, a toggle pivotally secured to the press frame and said plunger, a cam having an outer surface composed of two substantially right angled portions terminating in a curved portion and journaled within the press frame between and below the ends of the toggle, a cable attached to the joint of said toggle and passing around and secured to the periphery of the cam, and means for operating the cam, whereby the cam and plunger move rapidly toward the point of greatest compression at which point the members of the toggle are brought slowly in to approximately a horizontal plane, for the purpose set forth.

2. In a baling press, the combination of a power frame, and a baling chamber frame, each being mounted upon its respective wheels, and means for drawing and holding the inner end of the power frame below the baling chamber to telescope the press.

3. In a baling press, comprising two separable frames, each mounted upon its respective wheels, and a windlass and chain for telescoping said frames and holding them in telescoped position.

4. In a baling press, comprising two separated wheeled frames, a windlass journaled upon one frame, and a chain connected to the other frame and the windlass, whereby the two sections are telescoped and held in such position during transportation.

5. A cam for guiding the plunger operating cable of a baling press having an outer surface composed of two substantially right

angled portions terminating in a curved portion.

6. In a baling press, the combination of a frame, a baling chamber at one end, a spring
5 returned feeding mechanism mounted in the baling chamber, a spring returned baling mechanism also mounted in the baling chamber, a power mechanism mounted in the
10 other end of the frame and having a vertical shaft carrying a series of fingers, a platform carried by forward portion of the frame, a bar having an inwardly curved forward end with its other end operably connected with
15 the feeding mechanism, another bar having an oppositely curved forward end and its other end operably connected to the baling mechanism, means upon the platform for guiding the curved forward end of the feeding mechanism's bar, a double lever journaled
20 intermediate of its ends to said platform and having one end pivotally connected to the curved end of the feeding mechanism's bar, a trip block having its rear end pivotally connected to the forward end of the lever and
25 provided with a notched portion adapted to be engaged by one of the fingers at a time, means for holding the trip block toward the fingers, means for limiting such inward movement of the trip block, and pivoted means
30 for holding the other end of the baling mechanism's bar in the path of the fingers.

7. In a baling press, the combination of a frame, a baling chamber at one end, a platform at the other end, a spring returned feed-

ing mechanism in the baling chamber, a 35 spring returned baling mechanism also in the baling chamber, a power mechanism mounted in the platform end and having a vertical shaft carrying a series of operating fingers, a bar having an inwardly curved forward end 40 with its other end operably connected to the feeding mechanism, another bar having an oppositely curved forward end and its other end operably connected to the baling mechanism, means upon the platform for guiding 45 the curved forward end of the feeding mechanism's bar, a double lever journaled intermediate of its ends to said platform and having one end pivotally connected to the curved end of the feeding mechanism's bar, a trip 50 block having its rear end pivotally connected to the forward end of the lever and provided with a notched portion adapted to be engaged by one of the fingers at a time, means for holding the trip block toward the fingers, 55 means for limiting such inward movement of the trip block, and a trigger arm having one end pivotally connected to the platform and the other end pivotally connected to the curved end of the baling mechanism's bar, 60 the said trigger arm being in the path of the fingers, as and for the purpose set forth.

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

HORACE M. TALLMAN.

Witnesses:

CHAS. E. KELLER,
L. S. WEBSTER.