

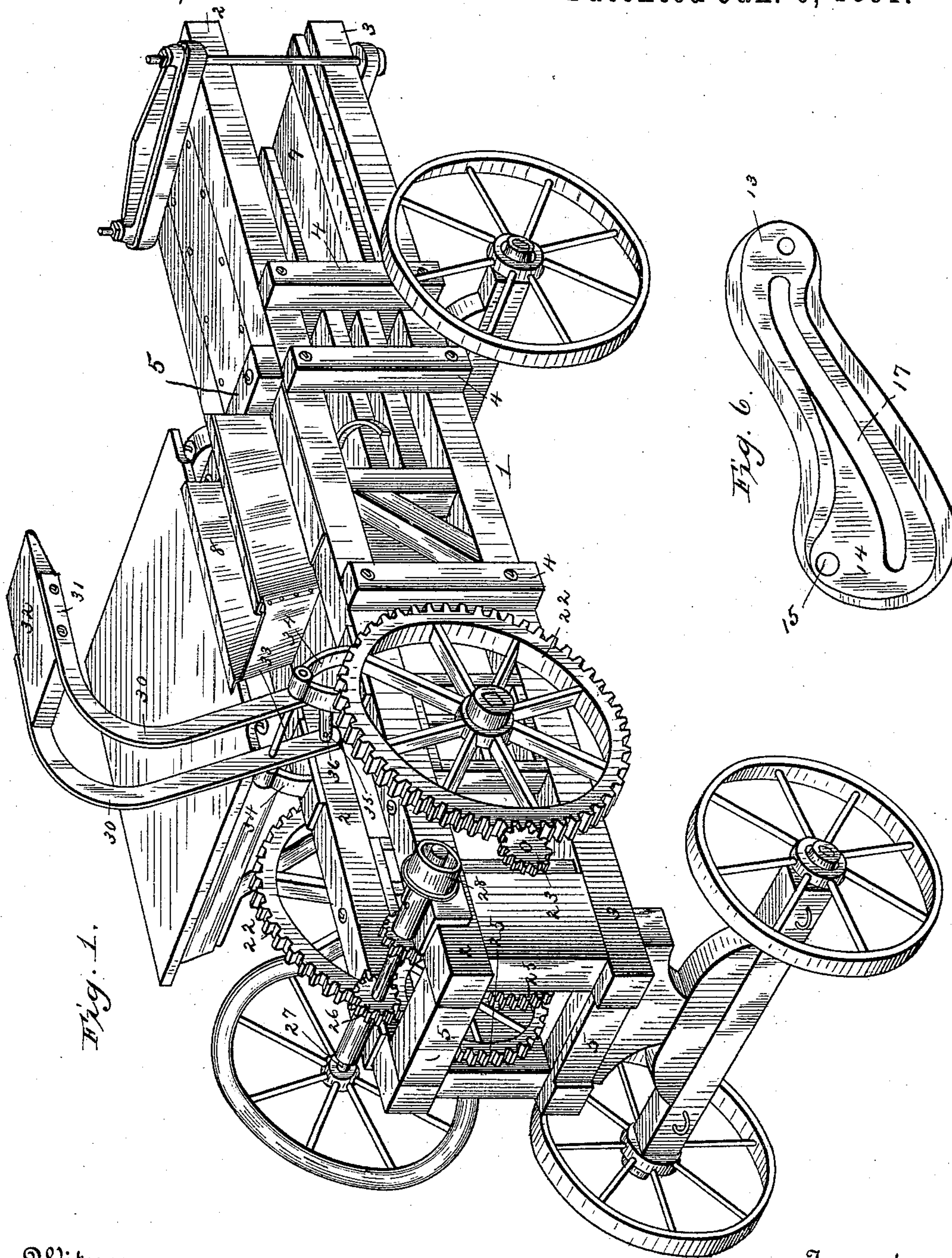
(No Model.)

3 Sheets—Sheet 1.

D. A. KEENA.  
BALING PRESS.

No. 444,194.

Patented Jan. 6, 1891.



Witnesses

Harry L. Amer.

Inventor

Daniel A. Keena.

By his Attorneys

*W. H. Puley* *C. A. Snow & Co.*

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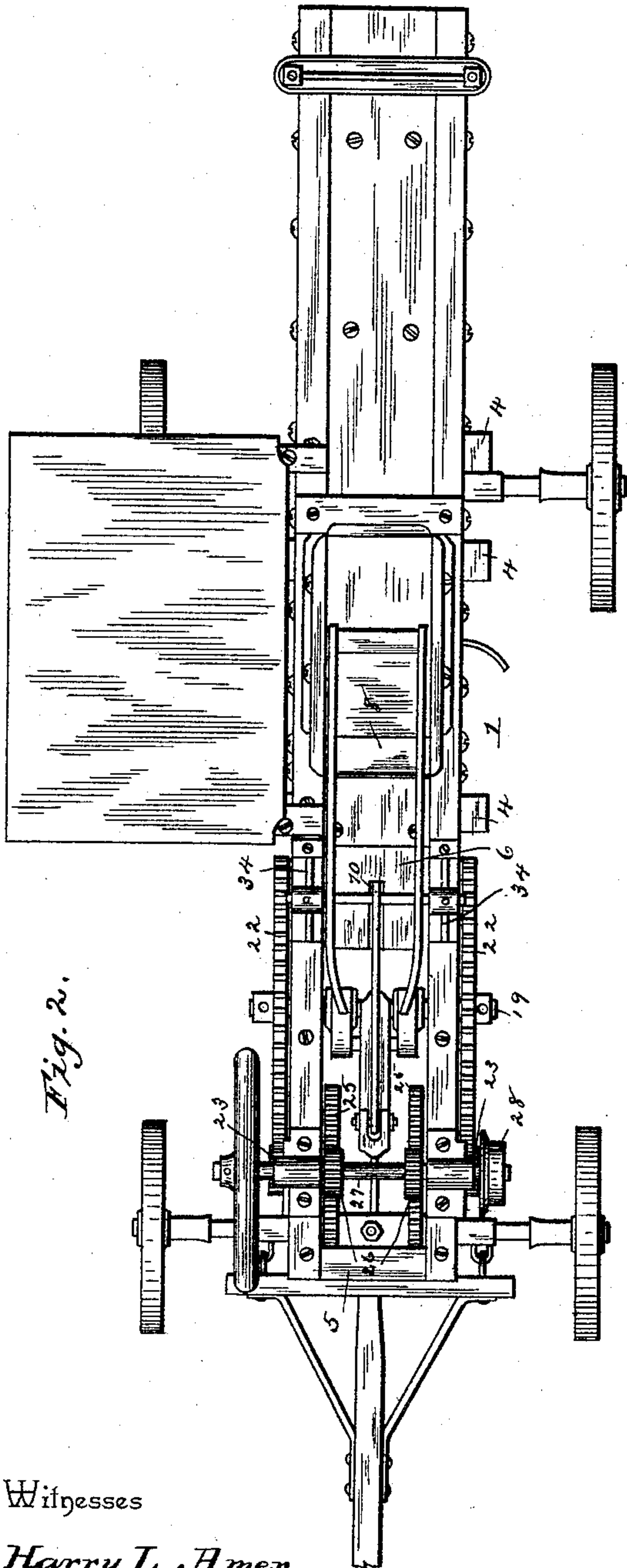


Fig. 2.

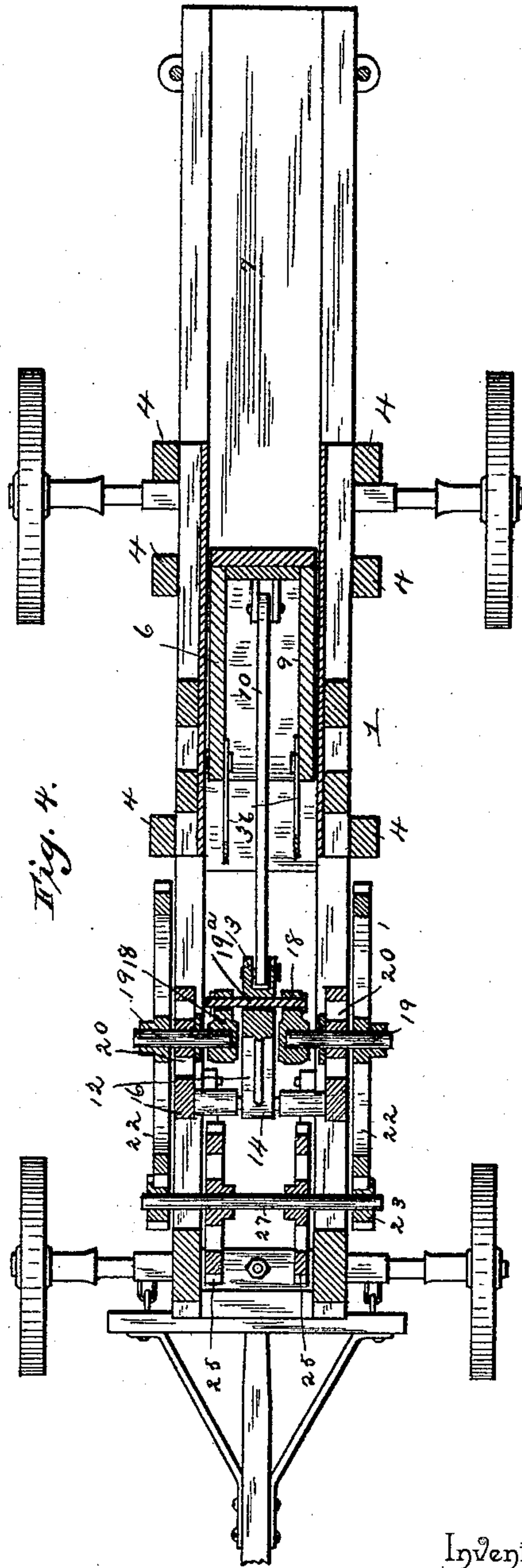


Fig. 4.

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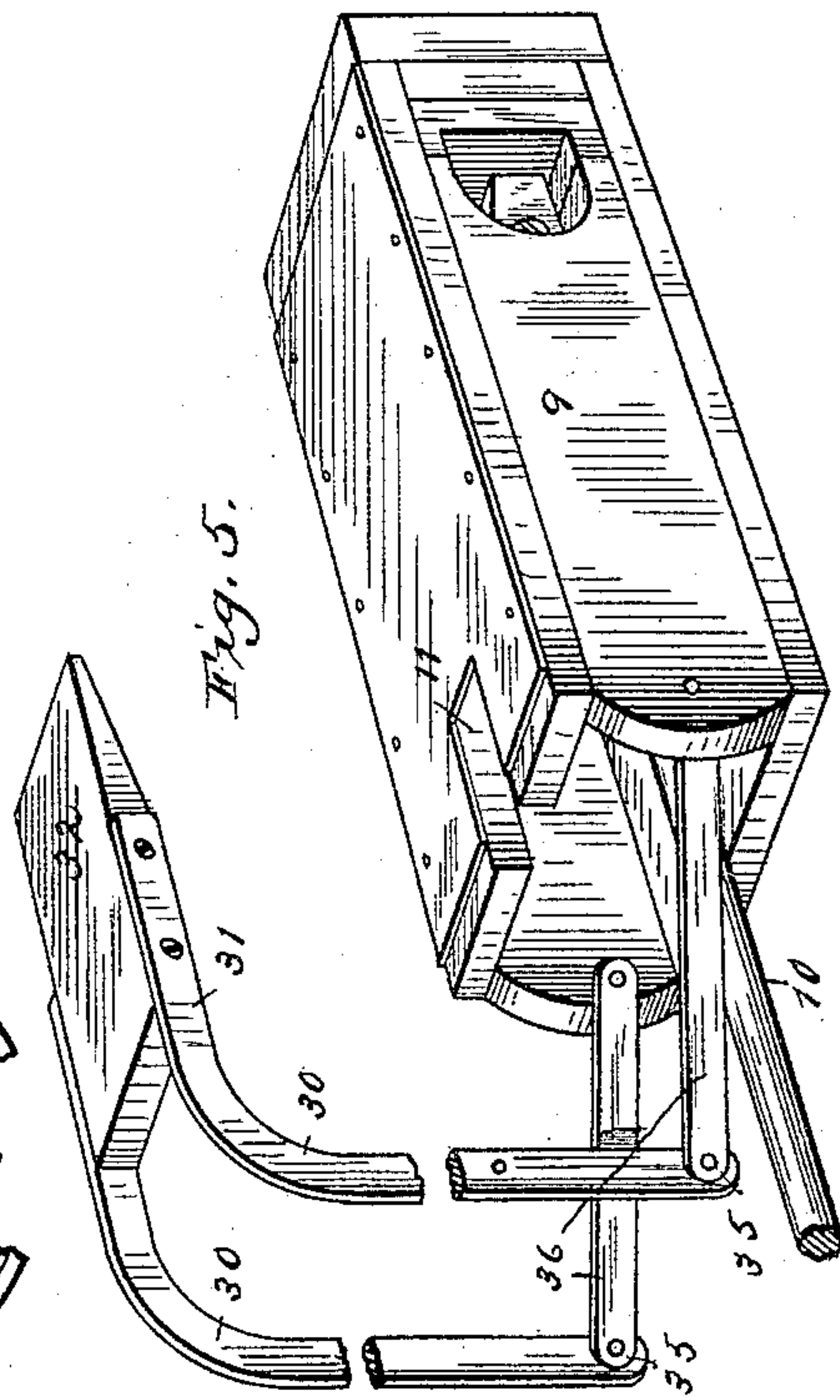
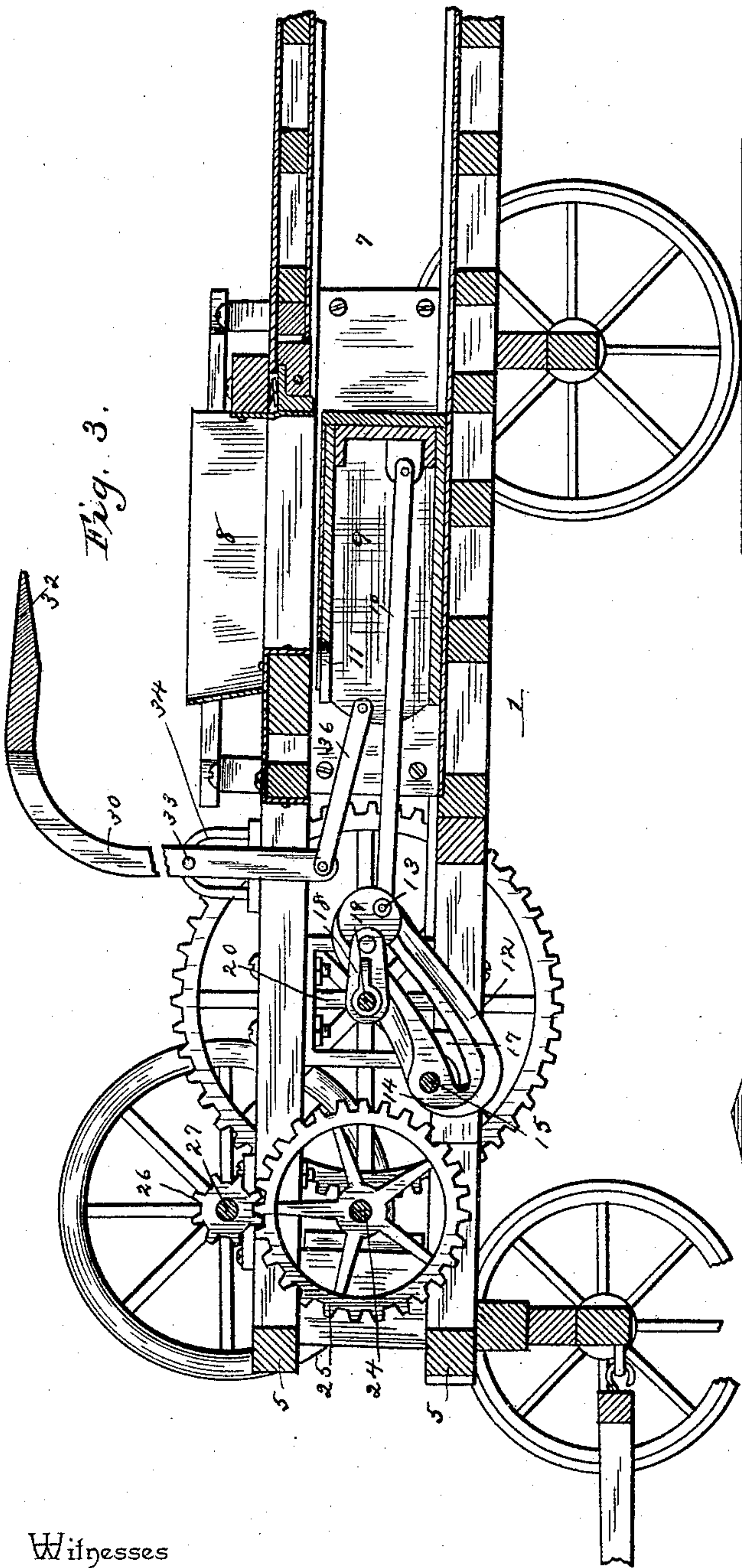
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# UNITED STATES PATENT OFFICE.

DANIEL A. KEENA, OF EAGLE GROVE, IOWA.

## BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 444,194, dated January 6, 1891.

Application filed March 19, 1890. Serial No. 344,565. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL A. KEENA, a citizen of the United States, residing at Eagle Grove, in the county of Wright and State of Iowa, have invented a new and useful Baling-Press, of which the following is a specification.

The invention relates to improvements in toggle-joint baling-presses.

10 The object of the present invention is to simplify and improve the operating mechanism of baling-presses, increase their power, and insure positiveness of operation.

15 A further object of the invention is to provide means for automatically feeding the press and carrying the hay to the press-box.

20 The invention consists in the construction and novel combination and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

30 In the drawings, Figure 1 is a perspective view of a baling-press constructed in accordance with this invention. Fig. 2 is a plan view. Fig. 3 is a vertical longitudinal sectional view, partly in elevation. Fig. 4 is a horizontal sectional view. Fig. 5 is a detail perspective view of the plunger. Fig. 6 is a detail view of the slotted arm to which the pitman is connected.

Referring to the accompanying drawings, 1 designates the frame of the press, which is mounted upon suitable running-gear, and is adapted to be readily moved from place to place, and the said frame 1 is constructed, in the usual manner, of longitudinal beams 2 and 3, vertical posts 4, and cross-pieces 5, and is provided with a press-box 6 and a baling-chamber 7. The baling-chamber 7 has open sides, and the press-box 6 is closed and provided at the top of the frame with a mouth 8, and is constructed in the usual manner. The plunger 9 moves longitudinally in the frame and has its front end open and pivotally connected to a pitman 10, that forms one arm of a toggle-joint, and the said plunger is provided in its top with a slot 11, to provide a way for the pitman 10. The other arm 12 of the toggle-joint is slightly sigmoidal and has one end 13 bifurcated and pivoted to the pitman 10, and it is provided near its other end with an enlargement 14, that has an opening

15, in which is arranged a shaft that is journaled in suitable bearings 16. The arm 12 of the toggle-joint swings vertically to force the plunger forward and to withdraw the same, and it is provided with a longitudinal slot 17, that is slightly sigmoidal and receives a crank consisting of crank-arms 18, mounted upon the inner ends of oppositely-arranged stub-shafts 19, which are journaled in suitable bearings of the frame, and the outer ends of the crank-arms are connected by a pin 19<sup>a</sup>, arranged in the slot 17. During the rotation of the crank-shaft the crank moves along the longitudinal slot 17 of the arm 12 and swings the latter up and down and carries the plunger forward and backward. The enlargement 14 is arranged at one end of the arm 12, and the opening 15, through which passes the shaft, is located considerably to one side of the slot, which is arranged eccentrically of the pivotal point. When the press-plunger is being carried forward, the crank 18 is at the upper end of the arm, and is at its farthest position from the shaft upon which the arm 12 is mounted. Consequently the arm 12 is moved forward and downward more slowly than it is moved upward and rearward when the crank is near the bottom of the slot and the pivot or fulcrum of the arm 12. It will thus be seen that the plunger is carried forward slowly and with great force while pressing the hay, but is returned quickly.

The crank-shaft 19 is mounted in suitable bearings 20, that are secured at the sides of the frame between the top and bottom beams, and these castings 20, in which the shaft is journaled, are also provided at their lower front edge with bearings 16, for the shaft upon which the arm 12 is mounted. The crank-shaft 19 has splined or otherwise secured to its ends cog-wheels 22, that are arranged upon the outer sides or faces of the frame and mesh with pinions 23, that are secured to the ends of a shaft 24. The shaft 24 is provided with a pair of cog-wheels 25, that are arranged within the frame and mesh with pinions 26 of a drive-shaft 27. The drive-shaft 27 is provided at one end with a pulley 28, that is designed to be connected by a belt with suitable power, and the other end of the shaft 27 is provided with a fly-wheel.

The hay-press is provided with means for



automatically carrying the hay within the press-box in position to be acted upon by the plunger, and this consists of a pair of levers 30, that are similar in construction and have their upper ends 31 curved and provided with a block 32, that is secured between the ends 31 of the lever and enables them to readily act upon a large amount of hay and force the same through the mouth 8 and into the press-box. The levers are fulcrumed upon a shaft 33, that is mounted in hangers or brackets 34, which are secured upon the top beams 2 of the frame. The ends 35 of the feed-levers are pivoted to a pair of connecting rods or bars 36, that have their other ends secured to the plunger within its open end, and when the plunger is being returned the feed-levers are simultaneously and quickly lowered, and are adapted to carry the charge of hay within the press-box, and when the plunger moves forward it carries with it the lower ends of the feed-levers, which are thereby raised and brought slowly into position to operate upon another charge of hay. It will readily be seen that the operating mechanism is simple and comparatively inexpensive in construction, and is capable of positive and reliable operation and of exerting a great amount of force, and that the feeding mechanism is operated automatically and is capable of carrying a charge of hay to the press box at every return of the plunger;

and I desire it to be understood that I do not limit myself to the precise details of construction herein shown and described, as I may without departing from the spirit of the invention make minor changes therein, such as varying the construction of the frame and its chambers.

From the foregoing description and the accompanying drawings the construction, operation, and advantages of the invention will readily be understood.

Having thus described my invention, what I claim is—

In a hay-press, the feeding mechanism consisting, essentially, of three elements, to wit: a pair of L-shaped levers 30, similar in construction and having their upper bent ends extending horizontally over the feed-opening when in their normal position and provided with a rigid block 32, secured between them, the shaft 33, on which the levers are fulcrumed, and the pivoted rods or bars connecting the lower ends of the levers 30 directly to the plunger, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of witnesses.

DANIEL A. KEENA.

Witnesses:

JOHN LAVIN,  
A. L. YEARAUS,  
E. O. HAUSON.