

No. 866,757.

PATENTED SEPT. 24, 1907.

T. R. WEYANT.  
MACHINE FOR SETTING UP CARTONS.

APPLICATION FILED JAN. 29, 1907.

2 SHEETS—SHEET 1.

Fig: 1.

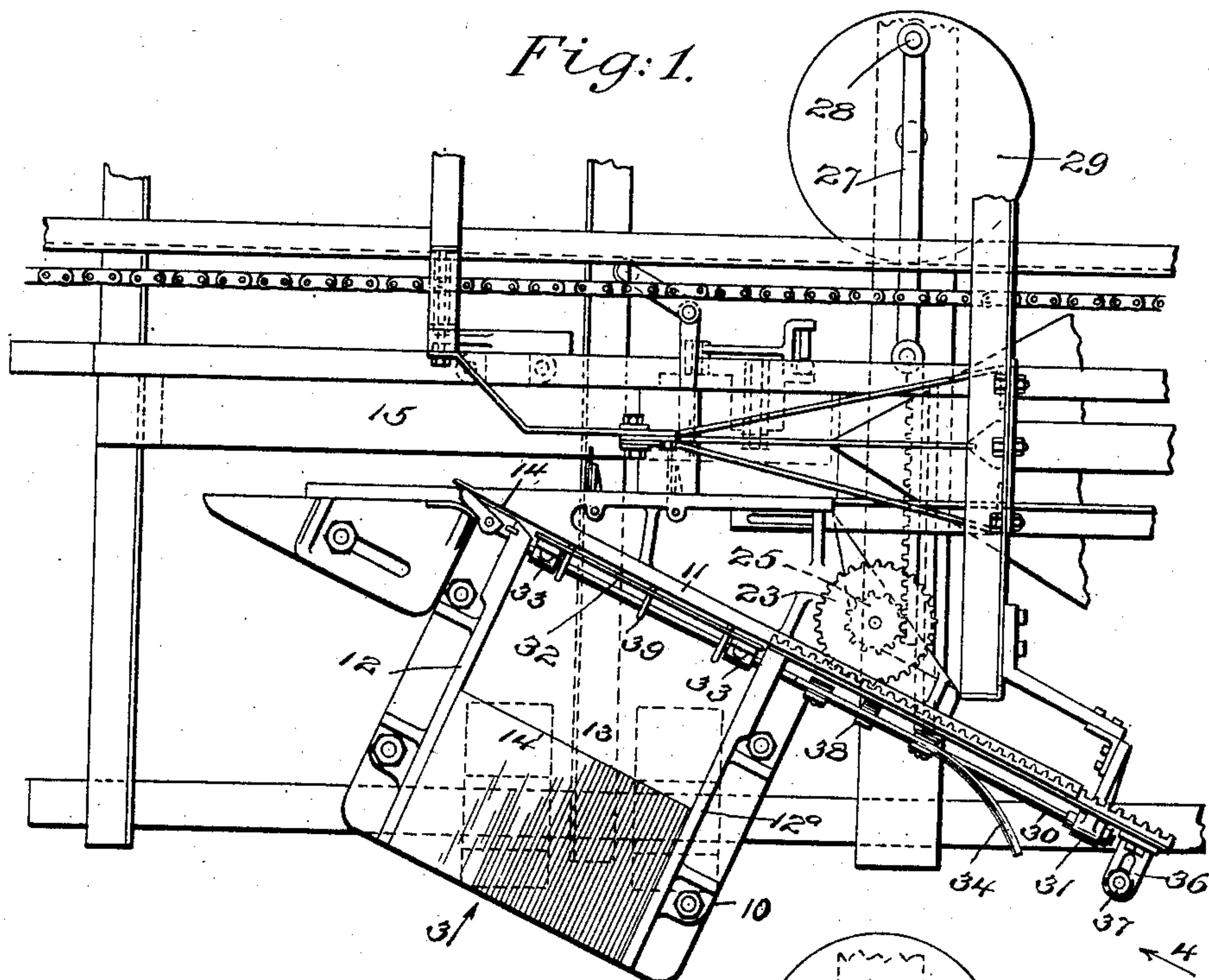
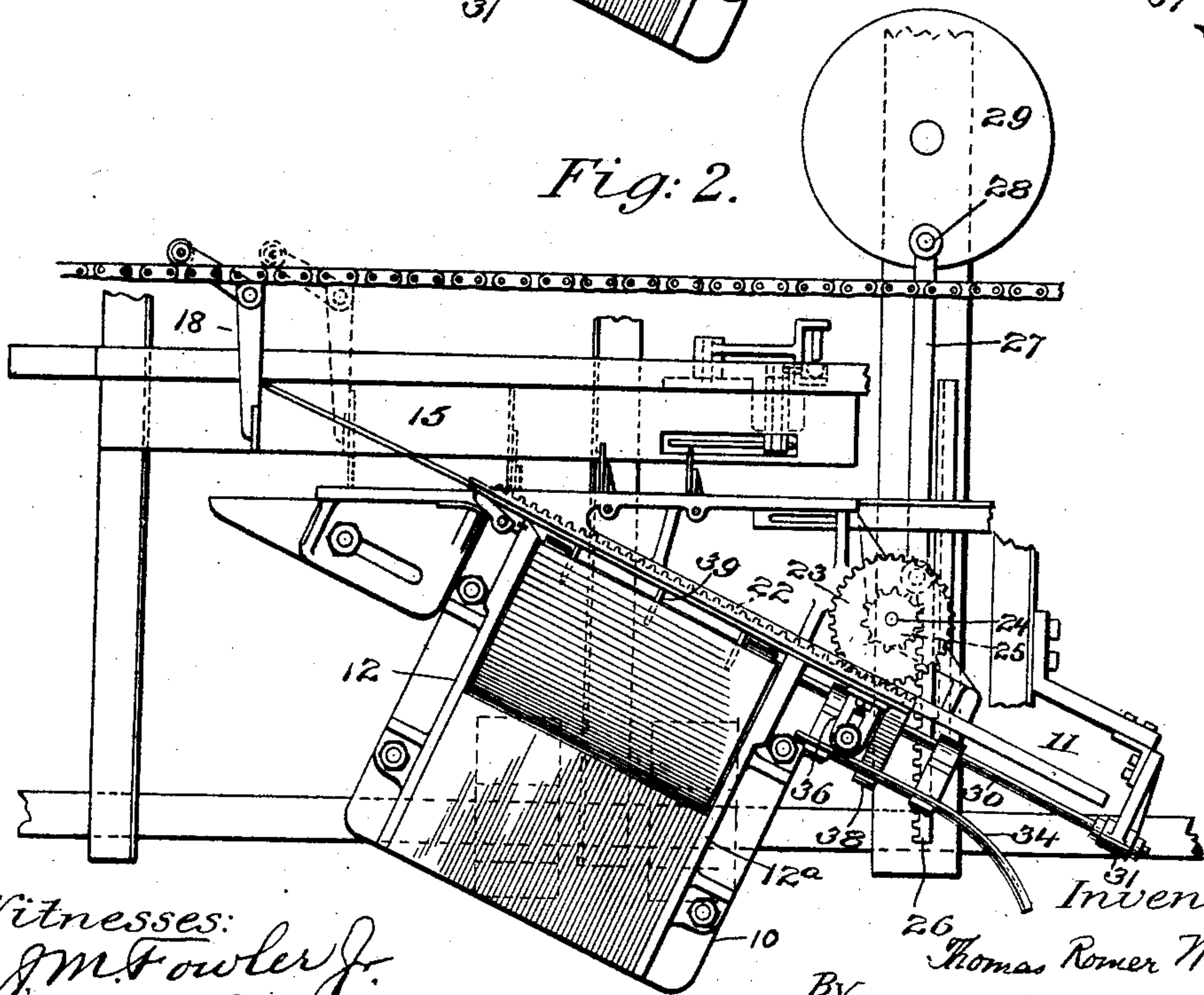


Fig: 2.



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2 SHEETS—SHEET 2.

Fig. 3.

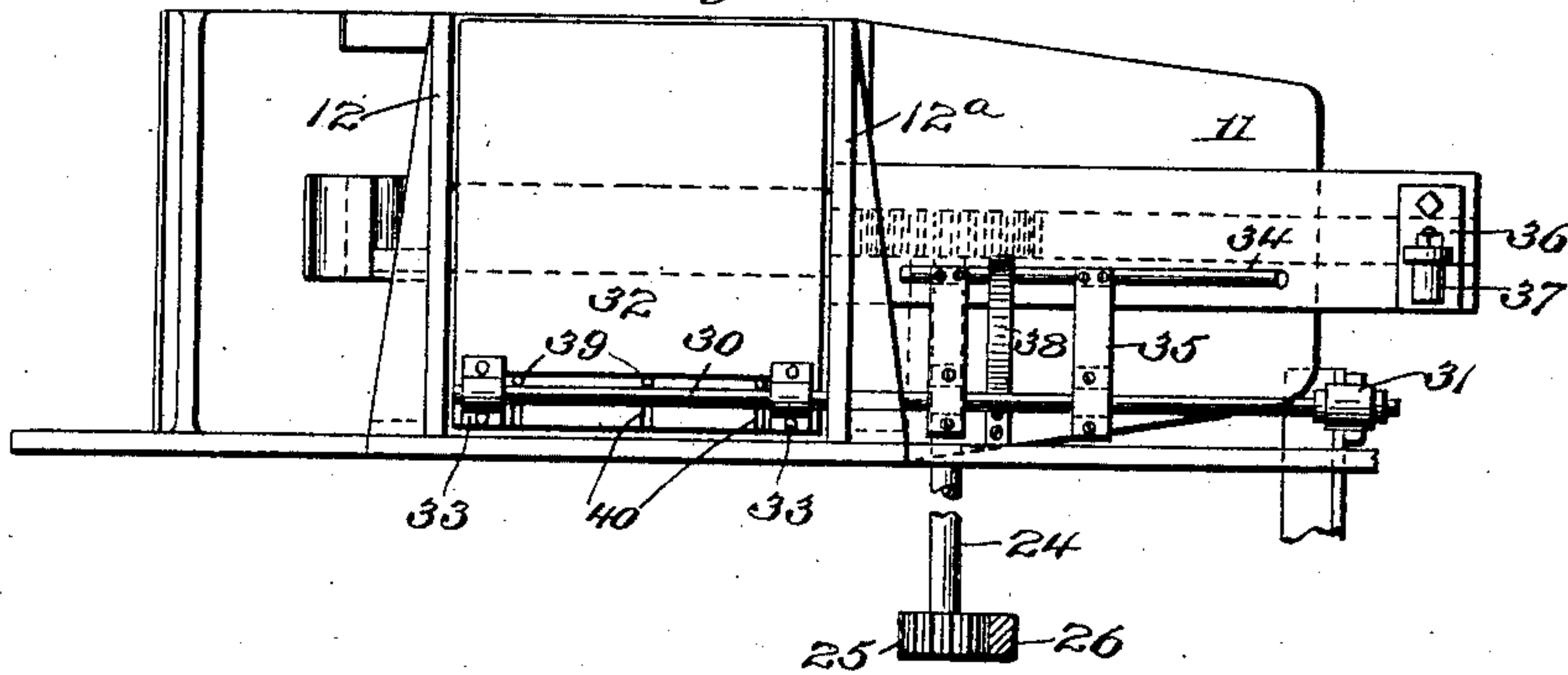


Fig. 4.

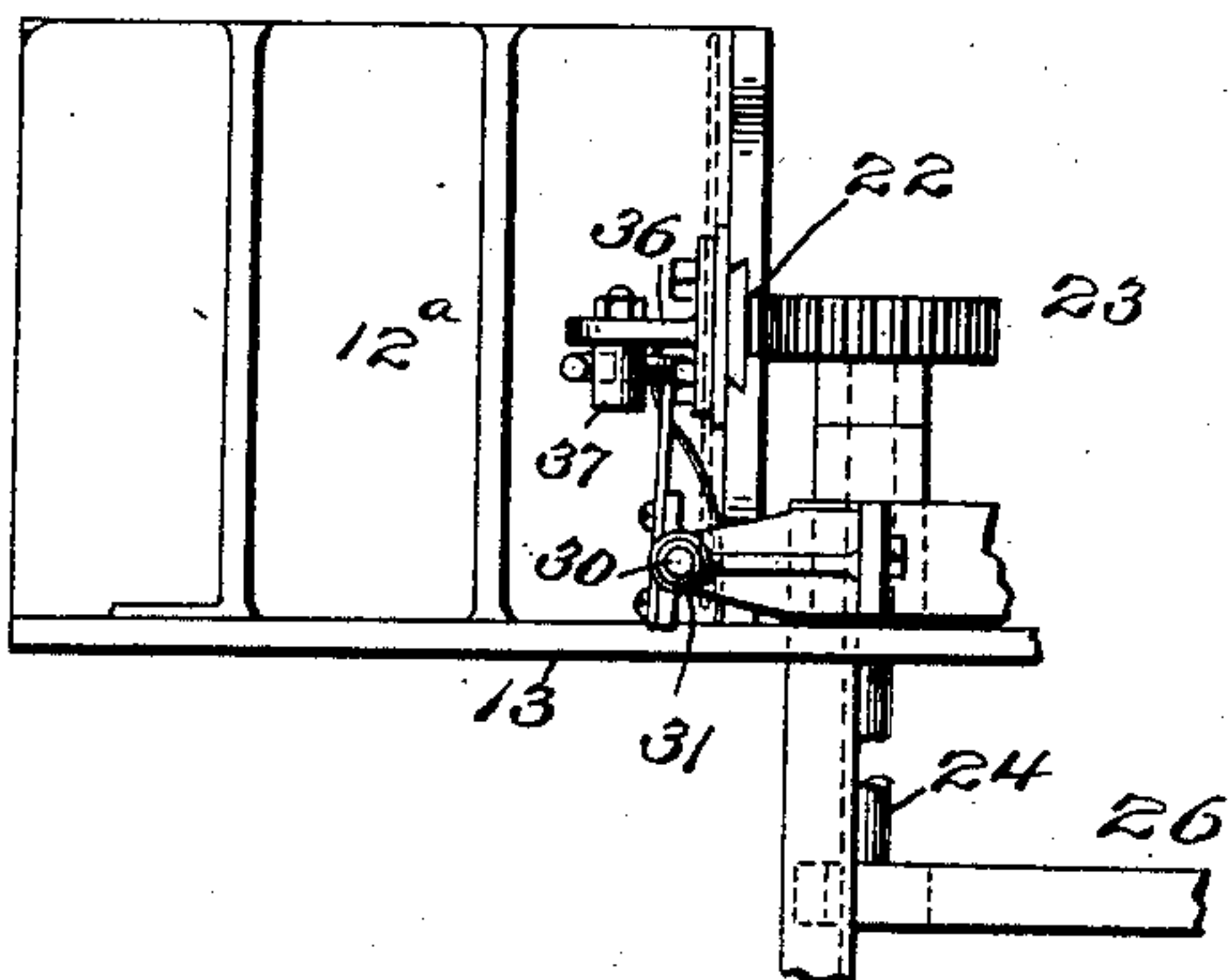


Fig. 5.

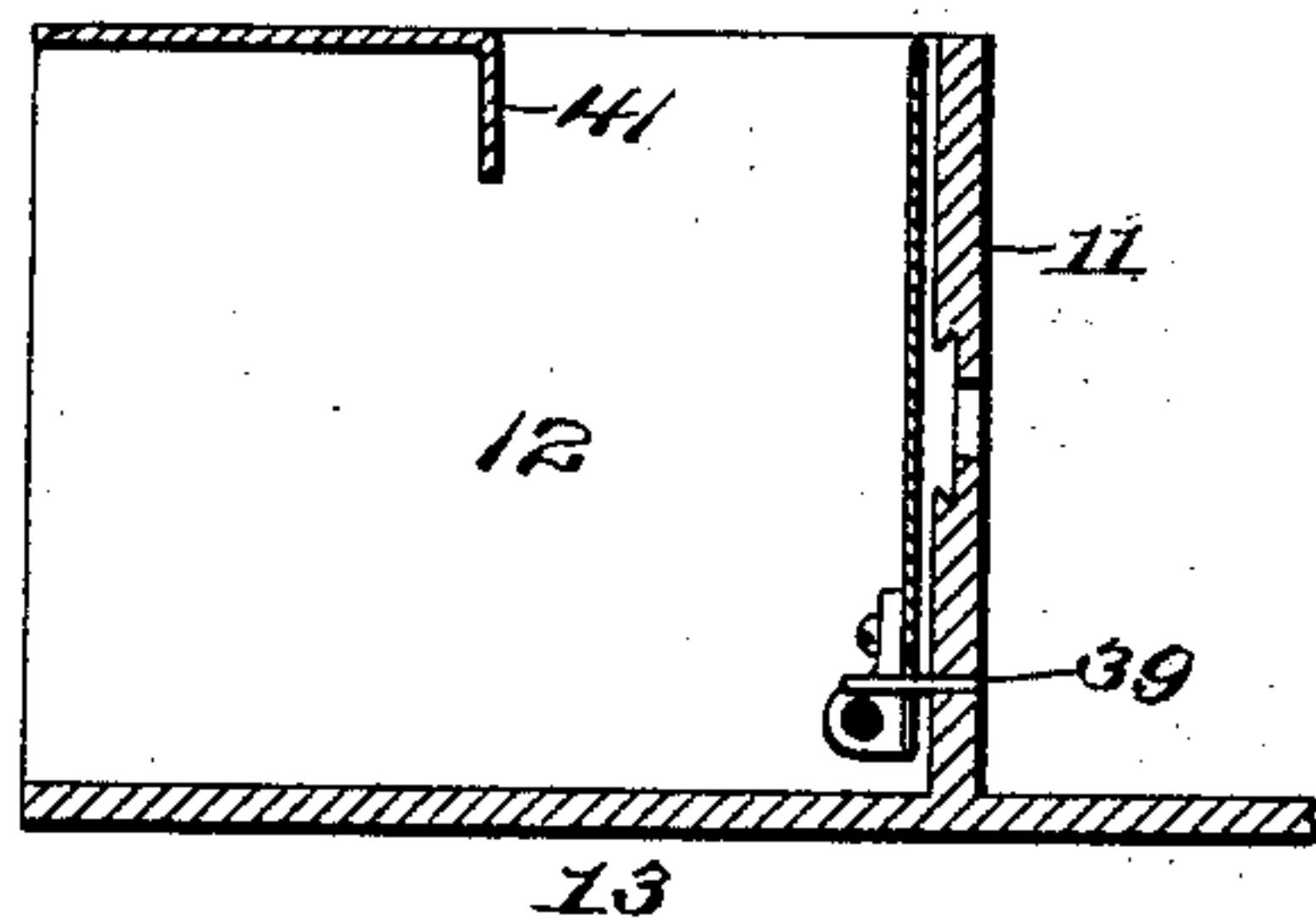
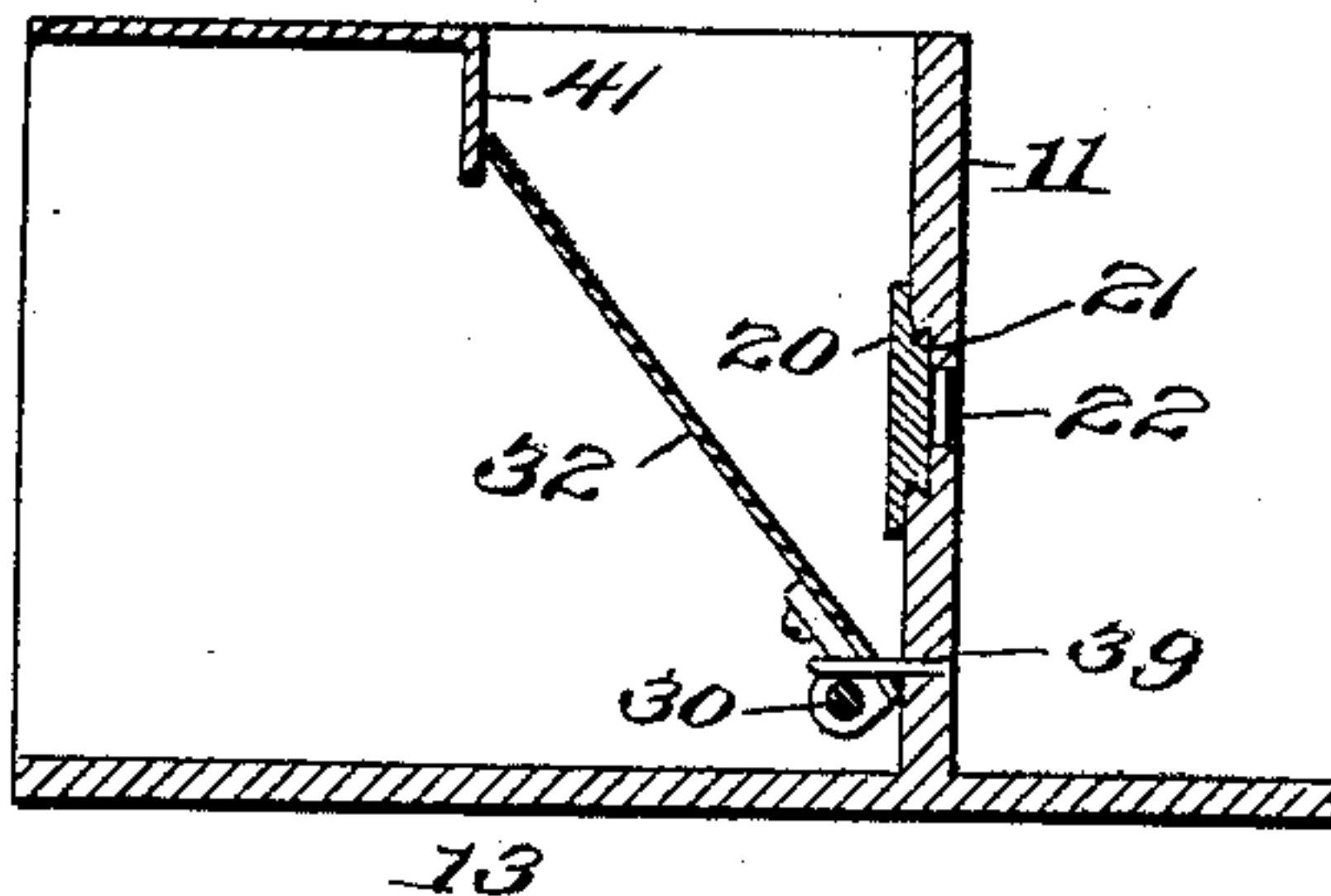


Fig. 6.



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# UNITED STATES PATENT OFFICE.

THOMAS ROMER WEYANT, OF NEW YORK, N. Y.

## MACHINE FOR SETTING UP CARTONS.

No. 866,757.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed January 29, 1907. Serial No. 354,760.

*To all whom it may concern:*

Be it known that I, THOMAS ROMER WEYANT, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Setting Up Cartons, of which the following is a specification.

This invention relates to machines for setting up cartons and particularly to the means employed for feeding cartons singly, in a flat or knocked down condition, into a guideway or passage where they are operated upon by certain mechanisms to bring them into rectangular form and to fold and seal their end flaps.

I will describe a preferred embodiment of my invention and then point out the novel features in claims.

In the accompanying drawings:—Figure 1 is a plan view of the receiving end of a machine for setting up cartons, embodying my invention. Fig. 2 is a similar view showing some of the parts in a different position; Fig. 3 is a front elevation of the feeding mechanism looking in the direction of arrow 3 on Fig. 1. Fig. 4 is a side elevation looking in the direction of arrow 4 on Fig. 1. Figs. 5 and 6 are sectional views of the feed box.

In an application filed by me November 9, 1906, Serial No. 344,090, I have illustrated and described a machine for setting up cartons, in which a quantity of cartons in a flat or knocked down form, are placed in a reservoir, pushed toward the front wall and discharged one at a time into the passage or guideway. My present invention provides means for receiving a single carton and moving it into vertical position against the front wall of the feed box in position to be pushed therefrom into the passage or guideway. The cartons may be fed singly by hand or otherwise to the receiving devices.

The feed box is indicated by 10 and comprises a front wall 11, side walls 12, 12<sup>a</sup> and bottom 13. A narrow vertical passage 14 leads from the forward end of the feed box into a guideway or passage 15. It will be observed that the front wall 11 of the feed box and the narrow passage 14 are oblique to the guideway 15, so that a carton when pushed from the feed box into the guideway will extend obliquely across the latter, as indicated in Fig. 2. The cartons will be engaged by flights 18 and moved along the guideway 15 where they will be opened up into rectangular form and have their end flaps folded and sealed. It is unnecessary to describe in detail any of the mechanism which acts on the carton after it has been delivered into the guideway as this forms no part of the present invention, and has been fully described in the above named application.

Any suitable means may be employed to push the carton singly from the feed box into the guideway 15, and as shown I employ a push-bar 20 attached to a dovetail tongue 21 which slides in a dovetail groove

in the front wall 11 of the feed box. The tongue is provided with a rack-bar 22 with which a gear 23 meshes. This gear is carried by a shaft 24 supported in suitable bearings and on the same shaft is a smaller gear 25 which meshes with a rack-bar 26. This bar is connected at one end to a crank rod 27 which in turn is connected to a crank pin 28 on a rotatable disk or wheel 29. The disk may be rotated by any suitable means not shown.

The front wall 11 extends beyond the side wall 12<sup>a</sup> in order to afford a substantial support for the push bar in its longitudinal reciprocations. It is obvious that with every complete revolution of the disk 29 the push bar 20 will make a full reciprocation.

A rock-shaft 30 is journaled in the side 12<sup>a</sup> of the feed box and in a bearing 31 on a fixed part of the machine. This shaft is located just above the bottom of the feed box and a plate 32 is connected at its lower end to the shaft within the feed box in any suitable manner as by clips 33, and the plate will oscillate toward and away from the front wall 11 when the shaft is rocked.

It is preferable to have the oscillation of the plate 32 controlled by the reciprocation of the push-bar, and in order to effect this I provide a cam bar 34 rigidly connected to the rock shaft 30 above it and outside the feed box, by means of tie plates 35 or any other suitable means. On the push-bar a bracket 36 is secured, to which a roller 37 is adjustably secured in position to engage the cam bar 34 and cause it to rock the shaft 30 and move the plate 32 away from the front wall 11, as indicated in Figs. 2 and 6. The plate 32 will normally be held in a substantially vertical position adjacent to the front wall 11 by means of a plate spring 38 secured at its lower end to the extension of the front wall, or to any other fixed part of the machine, and its upper end loosely engaging the cam bar 34.

A series of pins 39 project inwardly from the front wall 11 just above the rock shaft 30 and extend through slots 40 in the lower end of plate 32. These pins serve to support the lower end of the carton and the slots permit the plate to move away from the wall 11 without interference by the pins. The extent of movement of the plate away from the wall 11 is limited by a cross bar 41 secured to the feed box in any suitable manner.

The operation is as follows: Assuming the parts to be in the position shown in Fig. 2 with a carton just pushed out into the guideway 15 and the plate 32 in the position shown in Fig. 6, the push bar will be just starting on its return movement. The operator will now put a carton on the inclined plate 32 in the feed box with its lower end resting on the pins 39. As soon as the roller 37 reaches the curved portion of the cam bar 34 the spring 38 will gradually move the plate 32 toward the front wall 11 and when the roller 37 passes entirely off the bar 34 the plate 32 will be in substantially vertical position with the carton in a similar position between



the plate and the front wall. When the push bar again moves toward the guideway 15 it will push the carton ahead of it through the narrow passage 14, and since the roller 37 will not act on the cam bar until a considerable portion of the carton has been pushed into the passage 14, the latter will hold the carton in vertical position when the plate 32 begins to move away from the carton.

Obviously by a slightly different arrangement of the parts the spring could be used to move the plate to inclined position and the cam bar to move it to vertical position.

I do not limit myself to the precise details of construction illustrated and described, but

Having described a preferred embodiment of the invention, I claim:

1. In a machine of the class described having a guideway through which cartons may be moved, the combination of a feed box communicating with said guideway through a narrow vertical passage, a pivoted plate in the box, means for moving said plate to an inclined position to receive a flat carton, means for moving it to a vertical position to bring said carton into register with said narrow passage, and means for pushing the carton through said narrow passage into said guideway.

2. In a machine of the class described having a guideway through which cartons may be moved, the combination of a feed box communicating with said guideway through a narrow vertical passage, a pivoted plate in the box, means for moving said plate to an inclined position to receive a flat carton, a fixed support for the lower end of the carton above the pivotal axis of the plate, means for moving said plate to a vertical position to bring said carton into register with said narrow passage, and means for pushing the carton through said narrow passage into said guideway.

3. In a machine of the class described having a guideway through which cartons may be moved, the combination of a feed box communicating with said guideway through a narrow vertical passage, a plate pivoted in said box and movable to an inclined position to receive a flat carton and to a vertical position to bring said carton in register with said vertical passage, and means for moving said plate to said positions.

4. In a machine of the class described having a guideway through which cartons may be moved, the combination of a feed box communicating with said guideway through a narrow vertical passage, a plate pivoted in said box and movable to an inclined position to receive a flat carton and to a vertical position to bring said carton

in register with said vertical passage, a spring for moving said plate to one of said positions and a cam mechanism for moving it to the other position.

5. In a machine of the class described having a guideway through which cartons may be moved, the combination of a feed box communicating with said guideway through a narrow vertical passage, a plate pivoted in said box and movable to an inclined position to receive a flat carton and to a vertical position to bring said carton in register with said vertical passage, a push-bar slidably supported in the front wall of the feed box, means for reciprocating said bar to push said carton through said vertical passage into the guideway, a spring for moving the said plate to one of said positions, and a cam device connected to the plate and actuated by the push-bar for moving said plate to the other position.

6. In a machine of the class described having a guideway through which cartons may be moved, the combination of a feed box communicating with said guideway through a narrow vertical passage, a rock shaft journaled in the lower portion of the feed box and extending beyond it on one side thereof, a cam bar rigidly connected to said shaft above it and outside said feed box, a plate rigidly connected at its lower end to said shaft within the box, a movable device for engaging said cam bar to move the plate to inclined position to receive a carton, a spring for moving said plate to a vertical position to bring the carton to register with the said narrow vertical passage, and means for pushing the carton through said narrow vertical passage into said guideway.

7. In a machine of the class described having a guideway through which cartons may be moved, the combination of a feed box communicating with said guideway through a narrow vertical passage, a rock shaft journaled in the lower portion of the feed box and extending beyond it on one side thereof, a cam bar rigidly connected to said shaft above it and outside said feed box, a plate rigidly connected at its lower end to said shaft within the box, a movable device for engaging said cam bar to move the plate to inclined position to receive a carton, fixed pins projecting through slots in the plate above said shaft, for supporting the lower end of the carton, a spring for moving said plate to a vertical position to bring the carton to register with the said narrow vertical passage, and means for pushing the carton through said narrow vertical passage into said guideway.

In witness whereof, I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

THOMAS ROMER WEYANT.

Witnesses:

H. R. BAUER,  
CHAS. E. COX.