

No. 646,801.

Patented Apr. 3, 1900.

W. J. BULMAN.
ENVELOP FEEDER.

(Application filed June 16, 1899.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

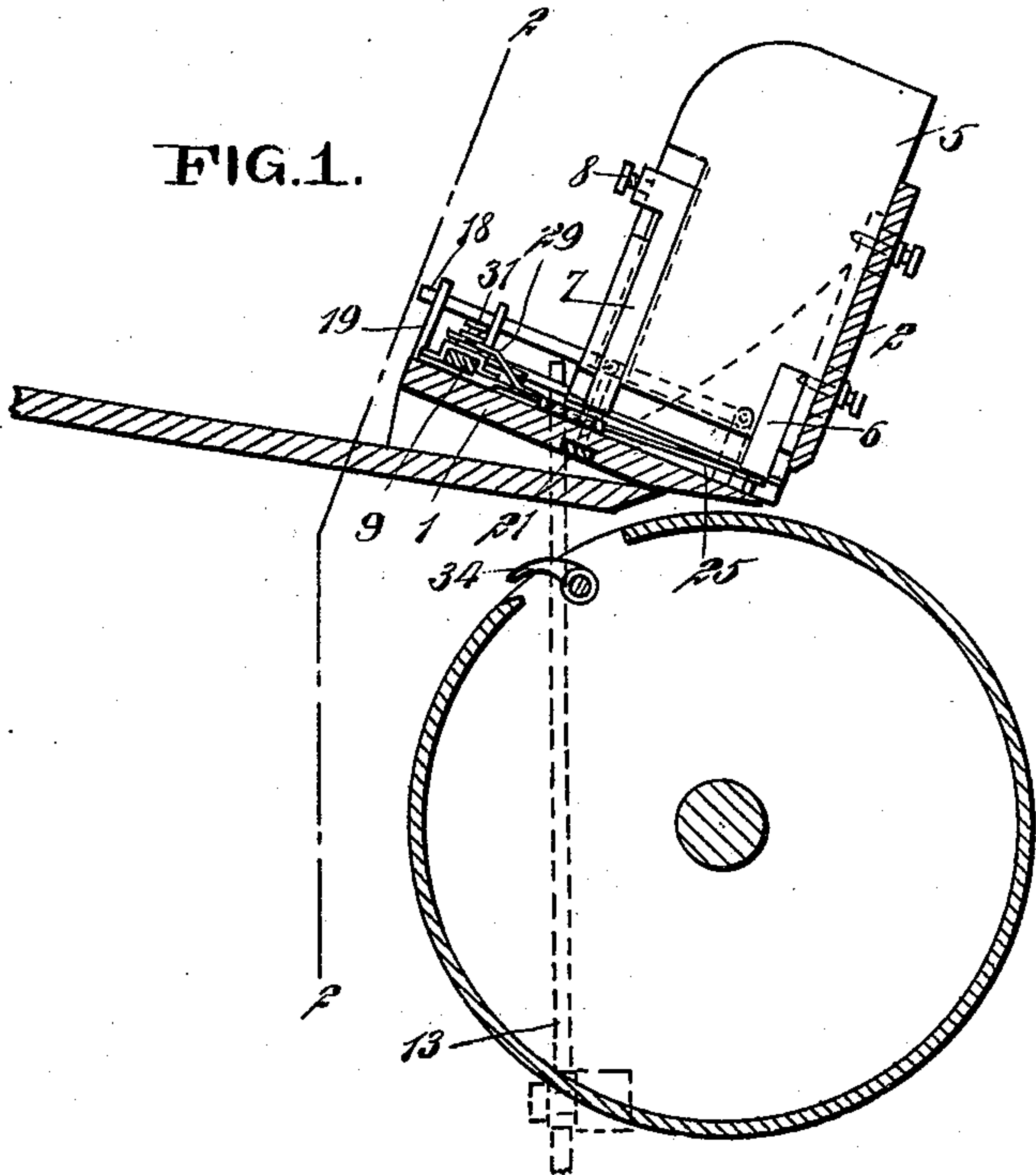
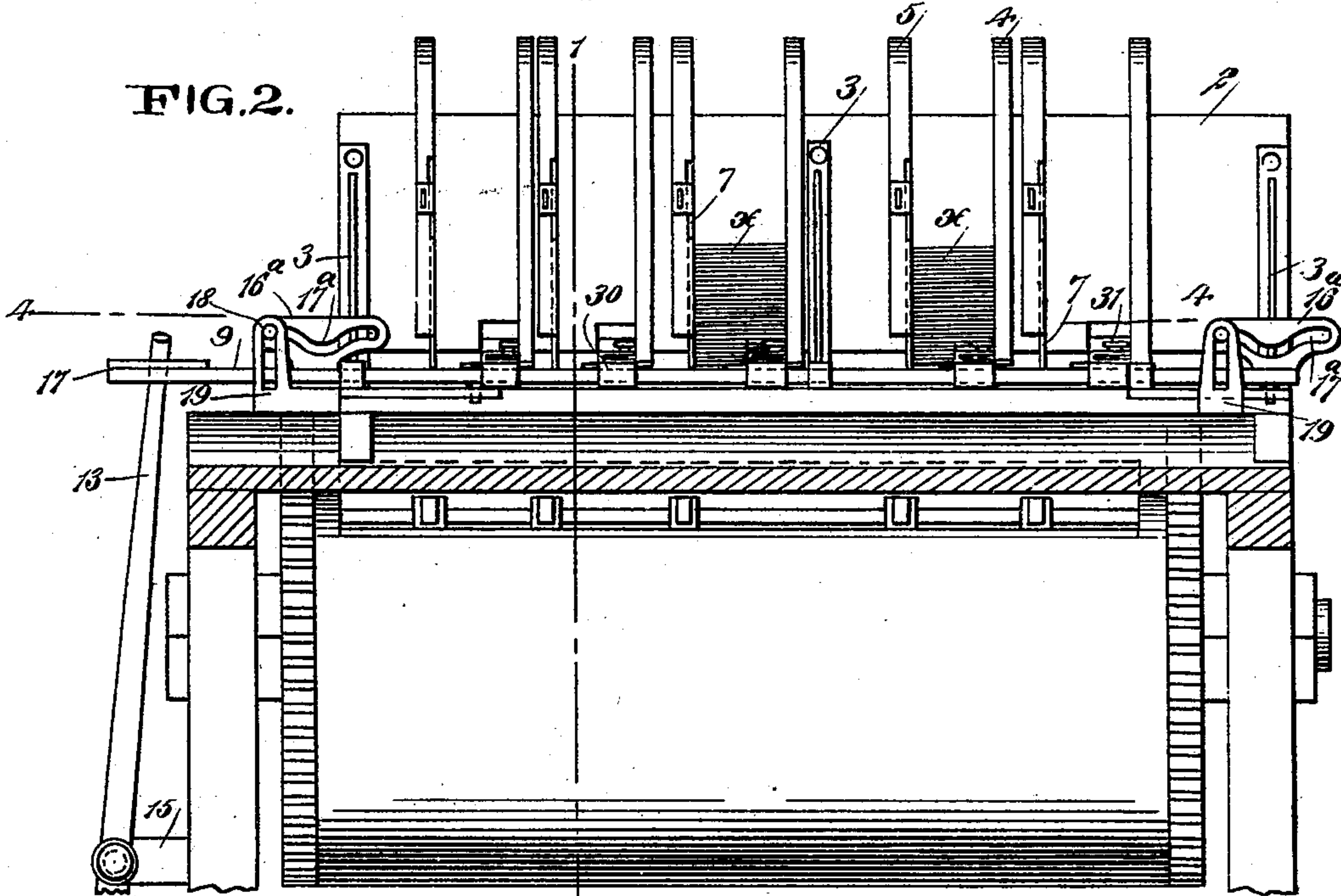


FIG. 2.



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FIG. 3.

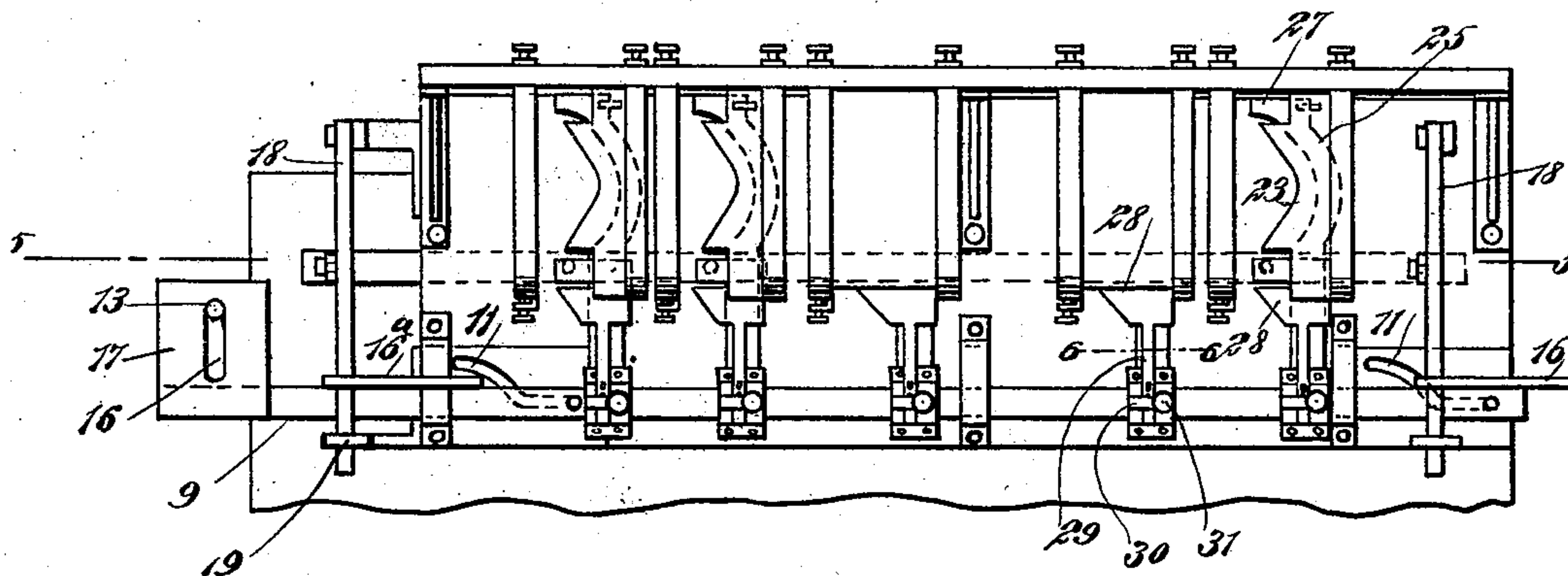


FIG. 4.

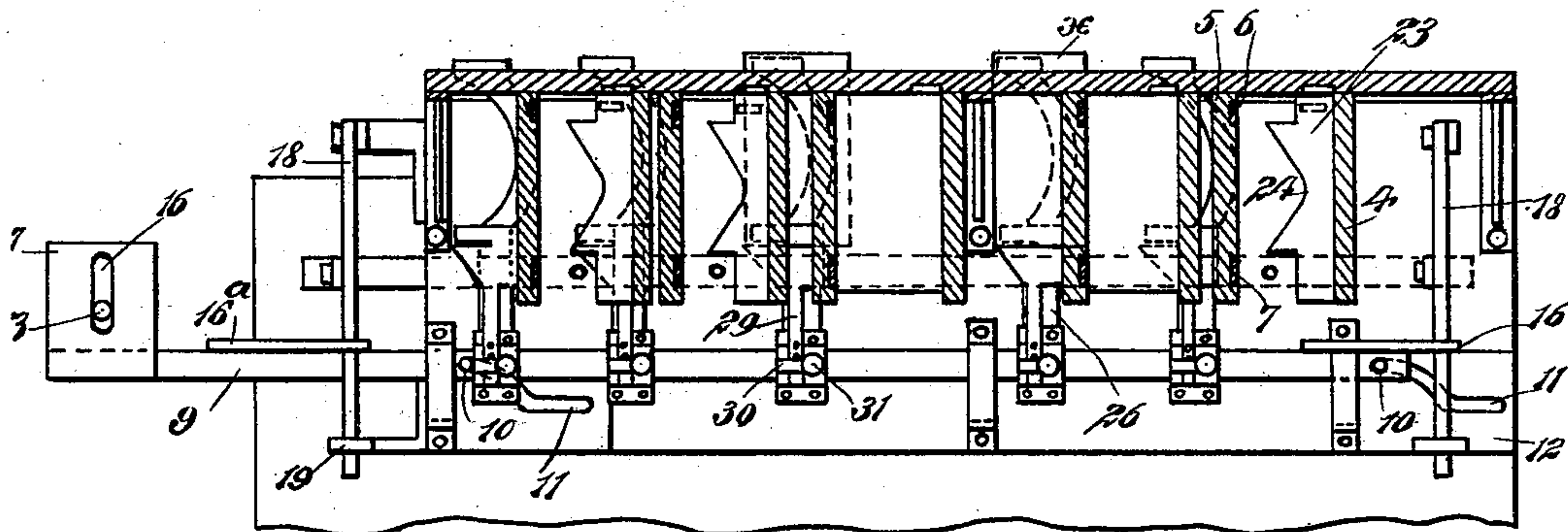
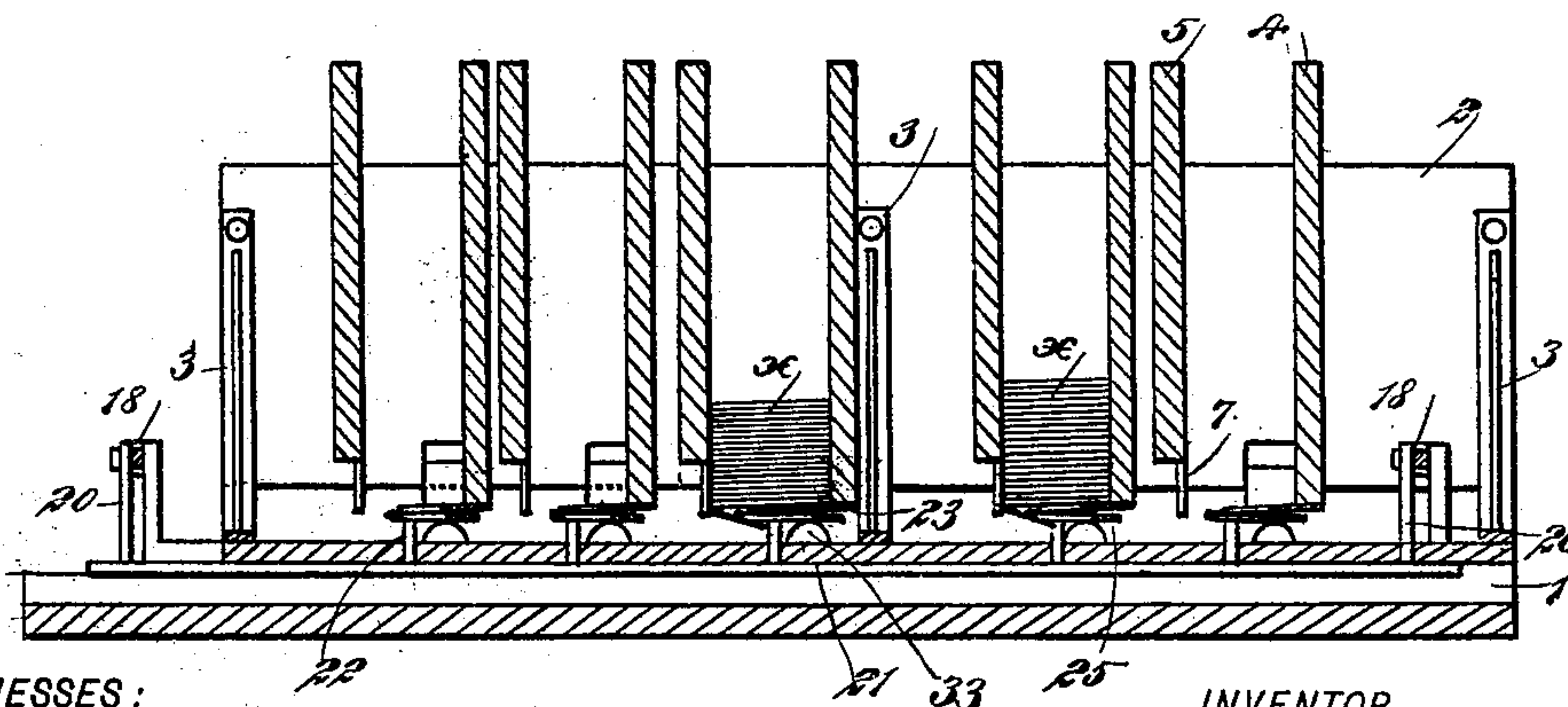


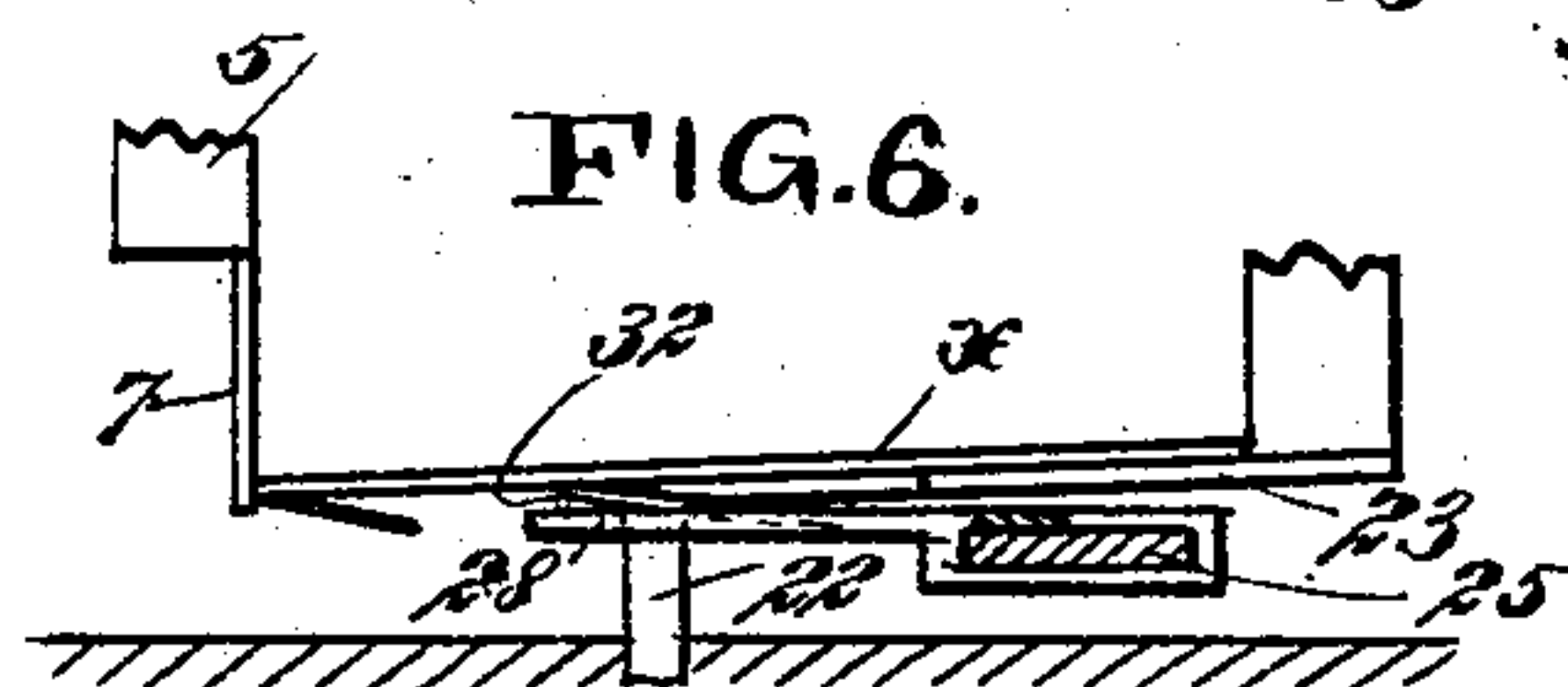
FIG. 5.



WITNESSES:

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FIG. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM JOHN BULMAN, OF WINNIPEG, CANADA.

ENVELOP-FEEDER.

SPECIFICATION forming part of Letters Patent No. 646,801, dated April 3, 1900.

Application filed June 16, 1899. Serial No. 720,814. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JOHN BULMAN, of Winnipeg, in the Province of Manitoba and Dominion of Canada, have invented a new and Improved Envelop-Feeder, of which the following is a full, clear, and exact description.

This invention relates to improvements in devices for automatically feeding envelopes to a printing-machine; and the object is to provide a device of this character that may be readily attached to a printing-machine and by means of which envelopes may be rapidly fed to the cylinder of the press, and, further, to so arrange the device that it may be adjusted to different sizes of envelopes.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a section on the line 1 1 of Fig. 2 of an envelop-feeder embodying my invention. Fig. 2 is a partial elevation and partial section on the line 2 2 of Fig. 1. Fig. 3 is a plan view. Fig. 4 is a section on the line 4 4 of Fig. 2. Fig. 5 is a section on the line 5 5 of Fig. 3, and Fig. 6 is a section on the line 6 6 of Fig. 3.

The feeder comprises a base-board 1 and a front board 2, attached to the base-board by any suitable means. I have here shown it as attached to the base-board by means of brackets 3 and in such manner that there is a space between the lower edge of the front board and the front edge of the base-board through which envelopes may pass.

Connected to the front board is a series of partitions 4 5, between which envelopes are to be arranged one upon another, as indicated at *x*, with the flap portions downward and toward the partitions 5. The several partitions are held adjustable longitudinally of the front board 2, so as to provide the proper space for the envelopes placed therein. The lower edges of the partitions 5 are somewhat above the base-board 1, and attached to the forward edge of each partition 5 near the front board 2 is a plate 6, which provides a stop for the envelop being fed outward. At the opposite edge of each partition 5 is a similar plate or stop 7, which, however, is adjustable vertically relative to the partition, so that more

or less space may be made between its lower end and the base-board 1. The adjustable stops 7 are held as adjusted by means of set-screws 8, and these stops 7 are mounted to slide in channels formed in the partitions.

Movable on the base-board 1 is a feeder-bar 9. This feeder-bar near its ends has pins 10, which pass into cam-slots 11, formed in the base-board, or, as here shown, in a plate 12, secured to the base-board. The cam-slots 11 are so shaped as to provide for a movement of the bar 9 directly lengthwise of the base-board and then forward or toward the front board of the device.

Reciprocating motion is imparted to the bar 9 by means of a lever 13, the said lever 13 being pivoted to a stud 15, extended from the frame of the press, and the lower end of the lever is designed be engaged with a cam on a continuously-rotating shaft of the press. The upper end of the lever 13 extends through a slot 16, formed in a plate 17, attached to the bar 9, the said slot being extended at right angles to the length of said bar, so as to permit of the movements of the bar, as above described.

Secured to the bar 9, near its ends, are plates 16^a, each having a cam-slot 17^a, which from its central portion extends upward and outward in both directions. Passing into these cam-slots 17^a are levers 18, which are pivoted at one end to brackets on the base-board and at their opposite or free ends are movable vertically in slots formed in plates 19, mounted on the base-board. These levers 18 have link connections 20 with a lifting-rod 21, extended along the under side of the base-board and having pins 22, which project and are movable through perforations formed in the base-board for a purpose to be hereinafter described.

Attached to the lower end of each partition 4 and projected toward its opposite partition 5 is a plate 23 for supporting the envelopes arranged in piles. The edges of these plates 23 which are toward the partitions 5 are curved inward, conforming substantially to the curve of an envelop-flap, as indicated at 24. Movable underneath each base-board 23 is a feeder-blade 25, which feeder-blades have their shank portions 26 adjustably connected to the bar 9, so that the said feeder-blades

may be moved or adjusted longitudinally of said bar. At the forward end of each feeder-blade 25 is a finger 27, adapted to engage between the flap and body portion of an envelop, and a similar finger 28 is adjustably mounted on the opposite end of the blade. This finger 28 is designed to engage with the end of an envelop to force it outward, as will be hereinafter described, and the object in making it adjustable lengthwise of the blade is to provide for different lengths of envelops. As here shown, the finger 28 has a shank portion 29, provided with perforations, in either one of which a pin on the shank portion 26 may be engaged, and when adjusted the finger is held by means of a clip 30 and a set-screw 31, which also serves to hold the feeder-blade as adjusted on the bar 9. Mounted on each adjustable finger 28 is a spring-finger 32, adapted to engage between the body portion and flap of an envelop, and these spring-fingers 32 are in the line of movement of the pins 22. It may be here stated that the feeder-blades are slightly resilient, so that their forward ends may be sprung upward by engaging with rounded lugs 33 on the base-board 1.

In operation the envelops are to be arranged in piles in the several compartments, as indicated in the drawings, and, as before stated, with the flap sides downward. As the bar 9 is moved to the right by means of the lever 13 the levers 18 will be moved downward by the cams 17^a, and this of course will lower the pins 22, allowing the spring-fingers 32 to spring downward. During this time the bar 9, carrying the feeder-blades, will be moved in a rearward or outward direction by the cams. The ends of the feeder-blades will move off of the lugs 33, permitting the fingers 27 to engage between the body portion and flap of an envelop near the forward end, and the spring-fingers 32 will also engage between the body portion and flap near the opposite end, and as the blades carried by the bar move to the left and downward and forward, the downward movement being permitted by the moving downward of the pins 22, the bottom envelop will be carried down with its edge underneath the stops 6 and 7, and then as the fingers or plates 28 engage with the end of the envelops the said envelops will be pushed outward by the forward movement of the blades, so that their forward ends may be engaged by the grippers 34, carried by the press-cylinder. After this feeding operation the parts will be again carried back to their original position for feeding other envelops at the bottom of the packs or piles.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. An envelop-feeder, comprising a base-board and a front board, partitions mounted on the front board, a feeder-bar, means for moving said feeder-bar on the base-board longitudinally of said board and also transversely thereof, feeder-blades carried by the

bar and having fingers for engaging between the flap and body portion of envelops, fingers adjustably mounted on the blades and means operated by the movement of the feeder-bar for moving said fingers upward, substantially as specified.

2. An envelop-feeder, comprising a base and a front board, partitions adjustably mounted on the front board, envelop-supporting plates mounted on certain of the partitions, adjustable stops on the other partitions, a feeder-bar, means for imparting a longitudinal and transverse movement to said bar, feeder-blades adjustably mounted on the bar and extended underneath the supporting-plates, spring-fingers adjustable on the blades, and means for moving said spring-fingers upward, substantially as specified.

3. An envelop-feeder, comprising a base and a front board, there being a space between the lower edge of the front board and the base, partitions mounted on the front board, supporting-plates on certain of said partitions, the said supporting-plates having concave edges, a feeder-bar, means for moving said feeder-bar longitudinally and also transversely of the base, feeder-blades carried by said bar, fingers on the forward ends of said blades, lifting-lugs on the base with which said fingers are designed to engage, spring-fingers on said blades, pins movable vertically in the base and adapted to engage the said spring-fingers, and means for moving said pins, substantially as specified.

4. An envelop-feeder, comprising a base and a front board, partitions mounted on the front board, envelop-supporting plates secured to the lower ends of certain of said partitions, a feeder-bar, means for imparting a longitudinal motion and also a transverse motion to said bar on the base, feeder-blades mounted on the bar and extended underneath the supporting-plates, feeder-plates adjustable longitudinally of the feeder-blades, spring-fingers attached to said feeder-blades, a bar movable vertically underneath the base and having pins extended through perforations in the base and adapted for engagement with the spring-fingers, and cams carried by the feeder-bar for operating the vertically-movable bar, substantially as specified.

5. An envelop-feeder, comprising a base-board and a front board, there being a space between the front board and the base-board, partitions mounted on the front board, envelop-supporting plates on the lower ends of certain of said partitions, a feeder-bar, pins extended from said bar into cam-slots in the base whereby said feeder-bar will be directed in a longitudinal and transverse direction, and feeder-blades carried by said bar, substantially as specified.

6. An envelop-feeder, comprising a base and a front board, partitions mounted on the front board, and means for engaging with envelops and moving the same laterally, then

downward and then forward, substantially as specified.

5 7. In an envelop-feeder, the combination with a holder for envelops, of a feeding device in the holder and having a lateral, a downward, and a forward movement, as and for the purpose set forth.

10 8. In an envelop-feeder, the combination with a holder for envelops arranged above a base-board and having its bottom terminating short of one side thereof, of a feeding device arranged below the bottom of the holder, and means for imparting a lateral, a downward, and a forward movement to said feeding device, substantially as described.

15 9. In an envelop-feeder, the combination with a holder for the envelops arranged above a base-board and having a supporting-plate projecting from one side partially over the bottom thereof, and stops on the opposite side and terminating short of the base-board,

of a feeding device arranged below the supporting-plate, and means for imparting a lateral, a downward, and a forward movement to said feeding device, substantially as described. 25

10. In an envelop-feeder, the combination with a holder for envelops arranged above a base-board and having a supporting-plate projecting from one side partially over the bottom thereof, and stops on the opposite side and terminating short of the base-board, of a longitudinally and laterally movable bar, a feeder-blade below the supporting-plate and secured to the said bar, and means for lowering the feeder-blade from the said bar, substantially as described. 30 35

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Witnesses:

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HEATH JACKSON.