

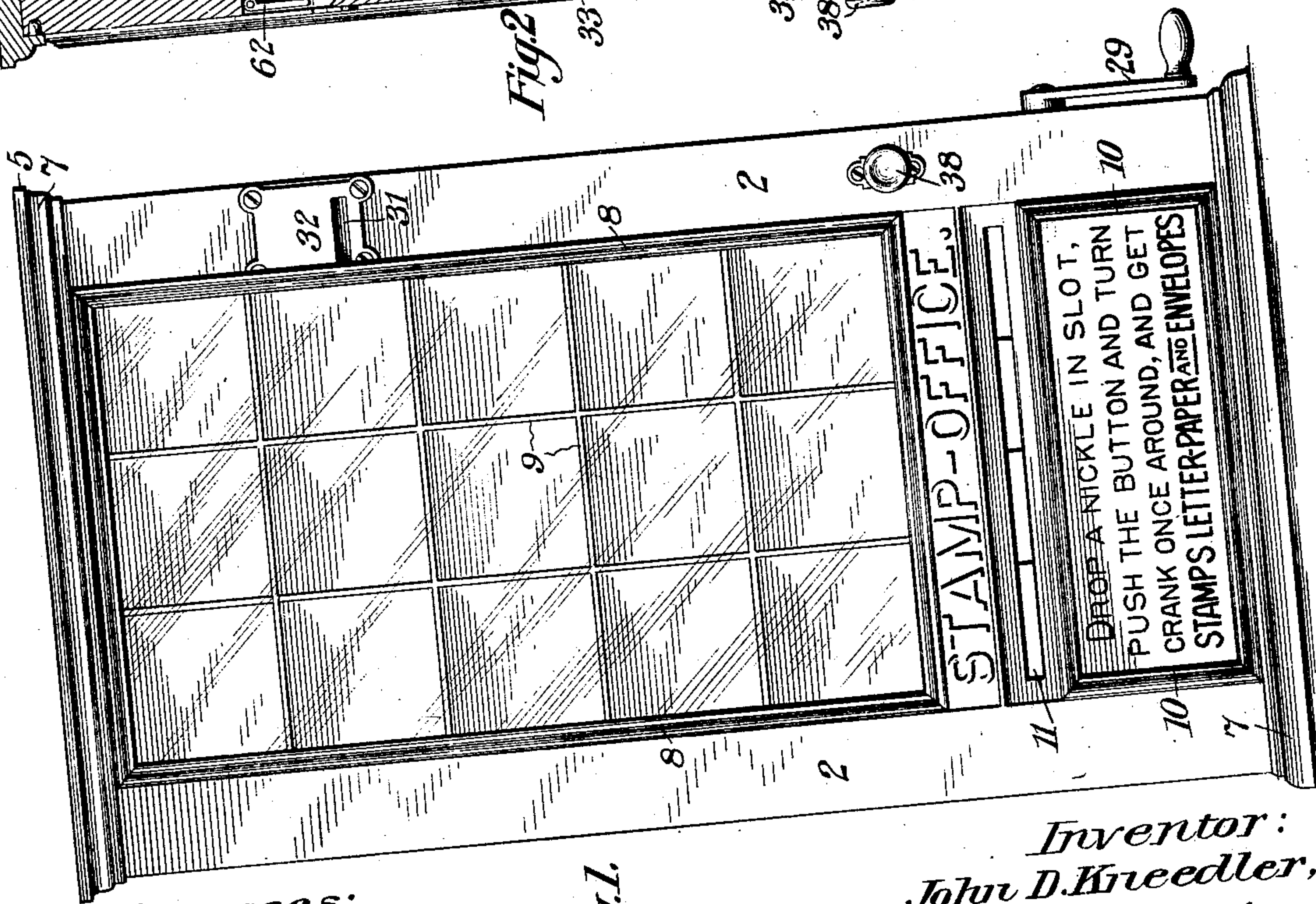
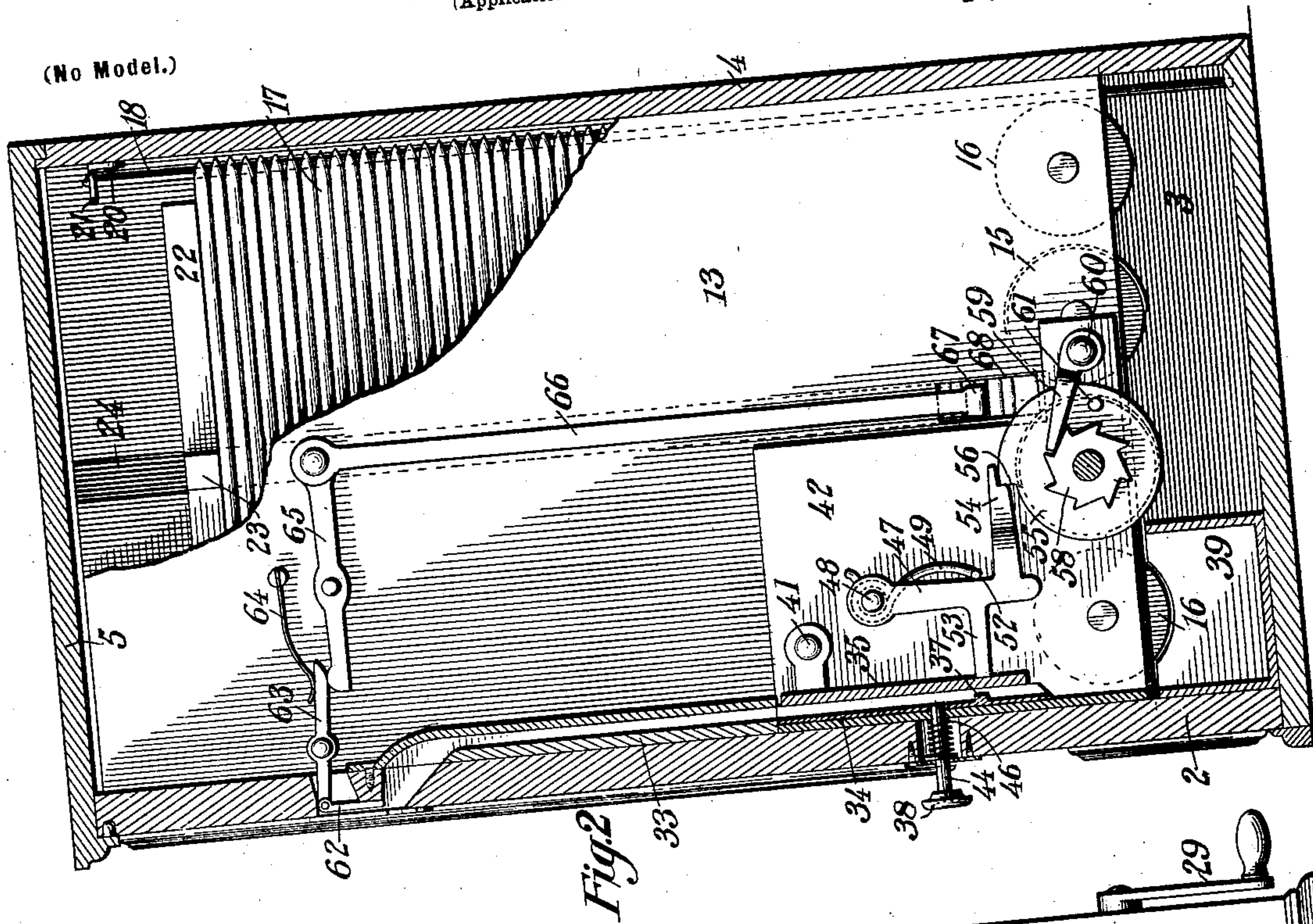
No. 705,362.

J. D. KNEEDLER.  
COIN CONTROLLED DEVICE.  
(Application filed Oct. 8, 1901.)

Patented July 22, 1902.

2 Sheets—Sheet 1.

(No Model.)



Witnesses:  
J. W. Riley,  
H. L. Amer.

Fig. 1.

Inventor:  
John D. Kneedler,  
By Rexford M. Smith,  
Attorney.



No. 705,362.

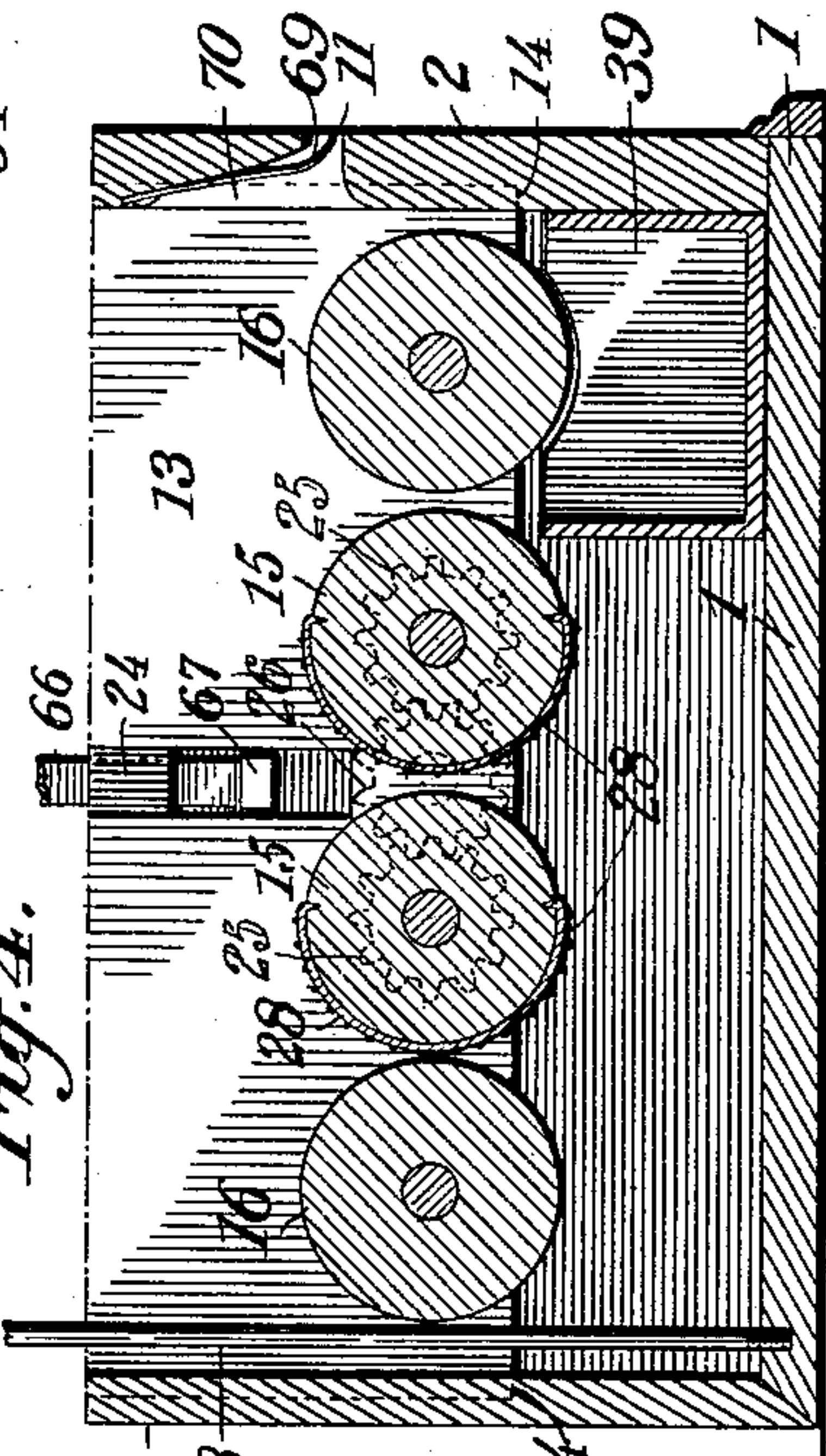
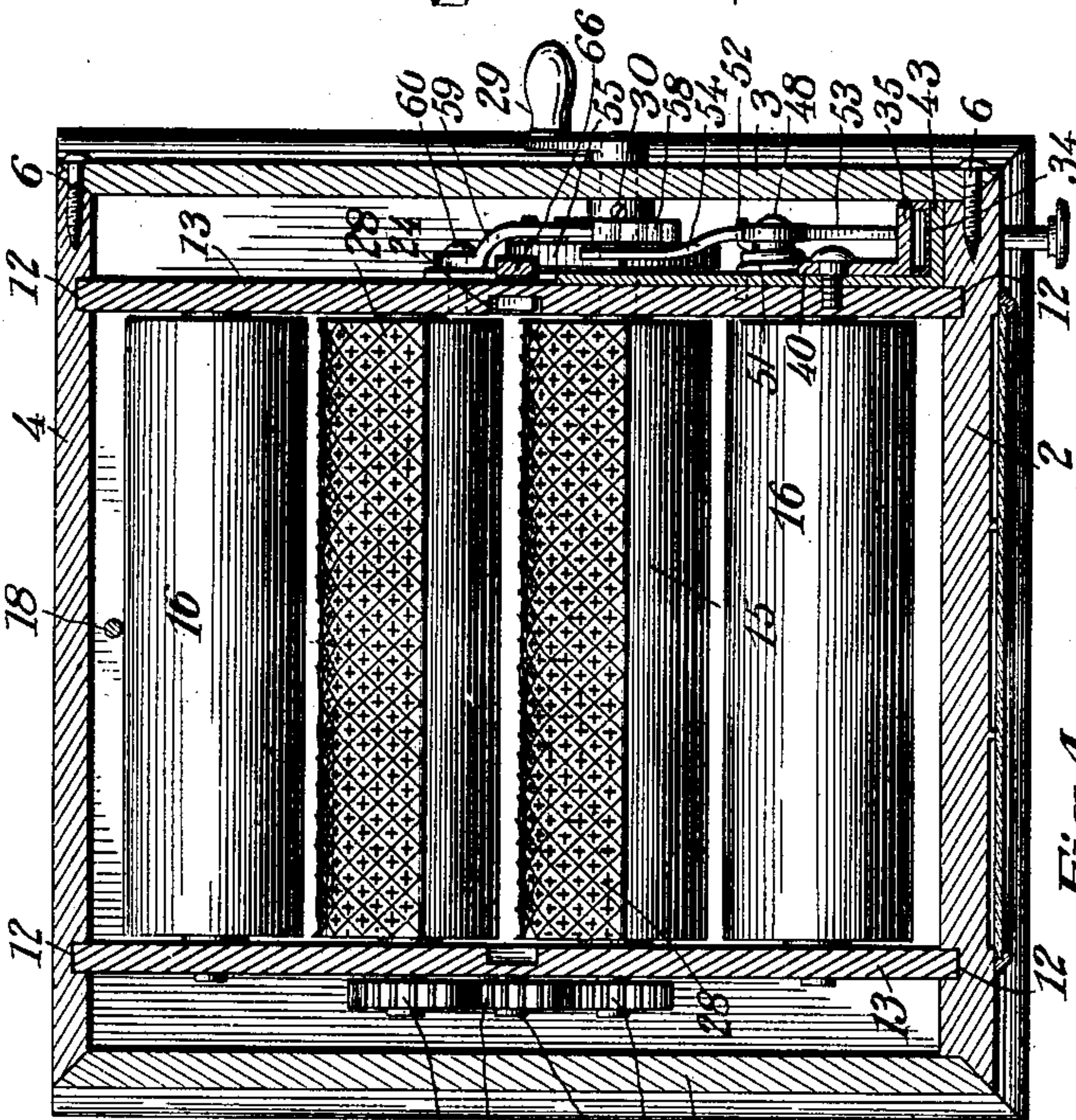
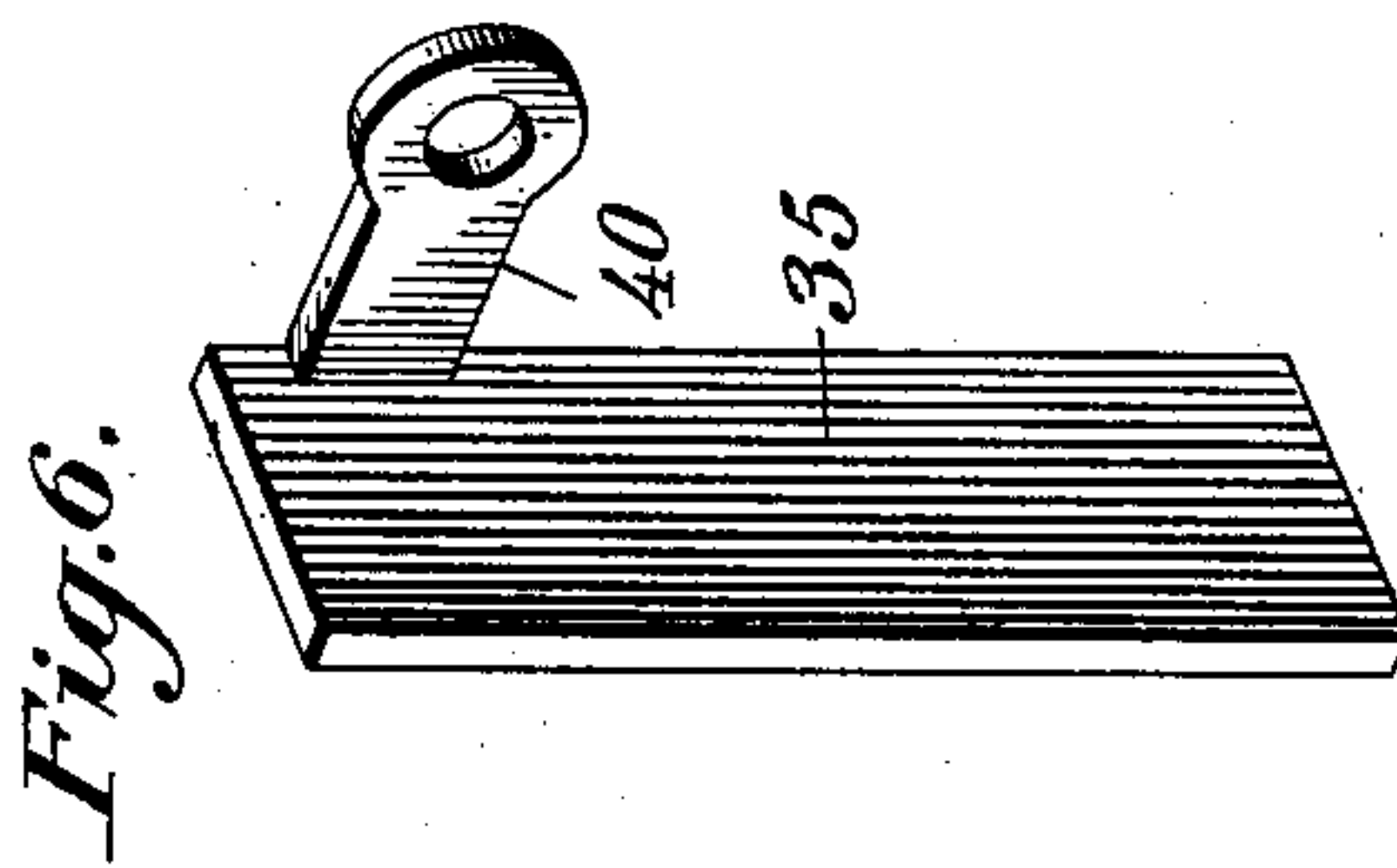
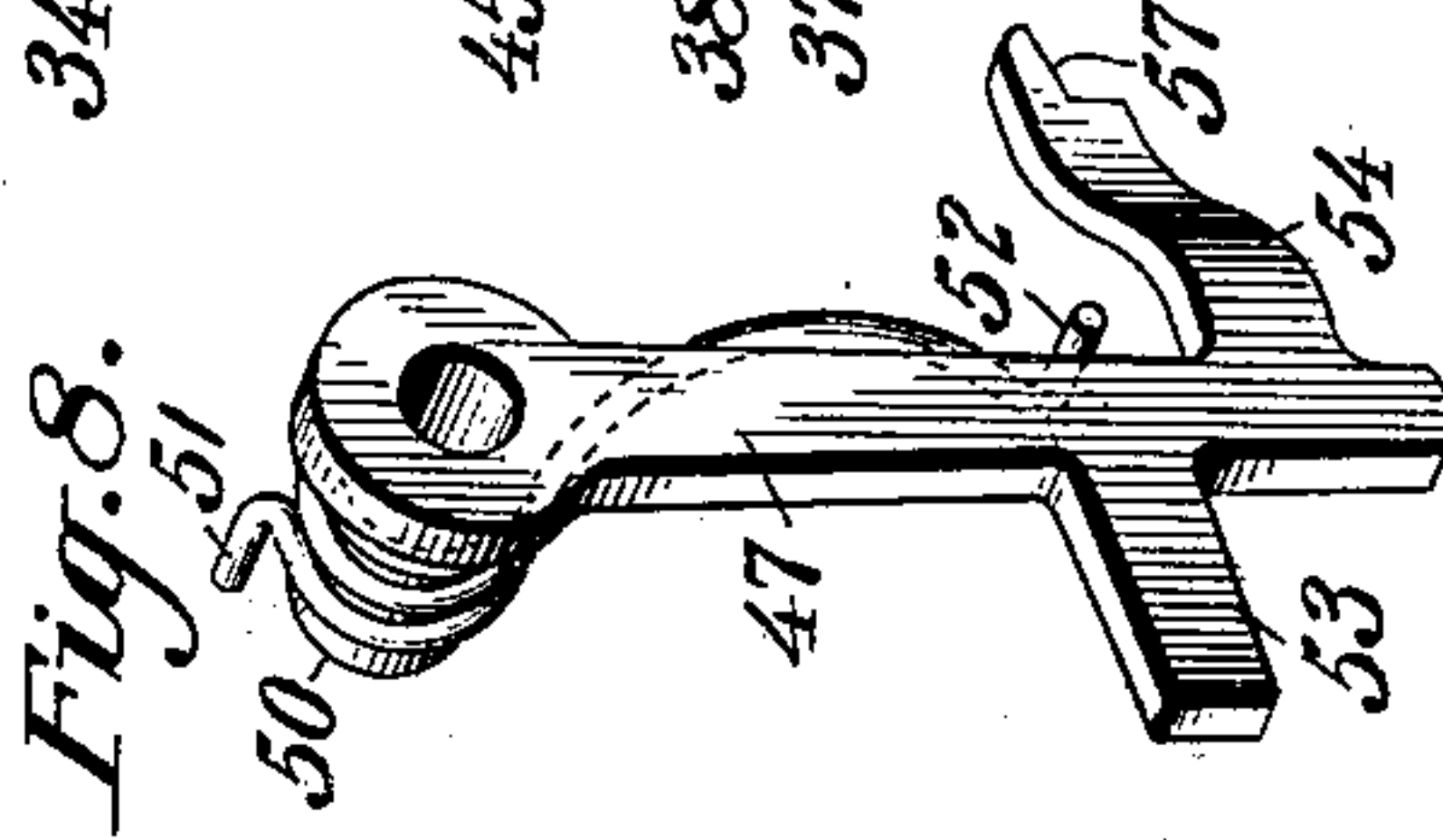
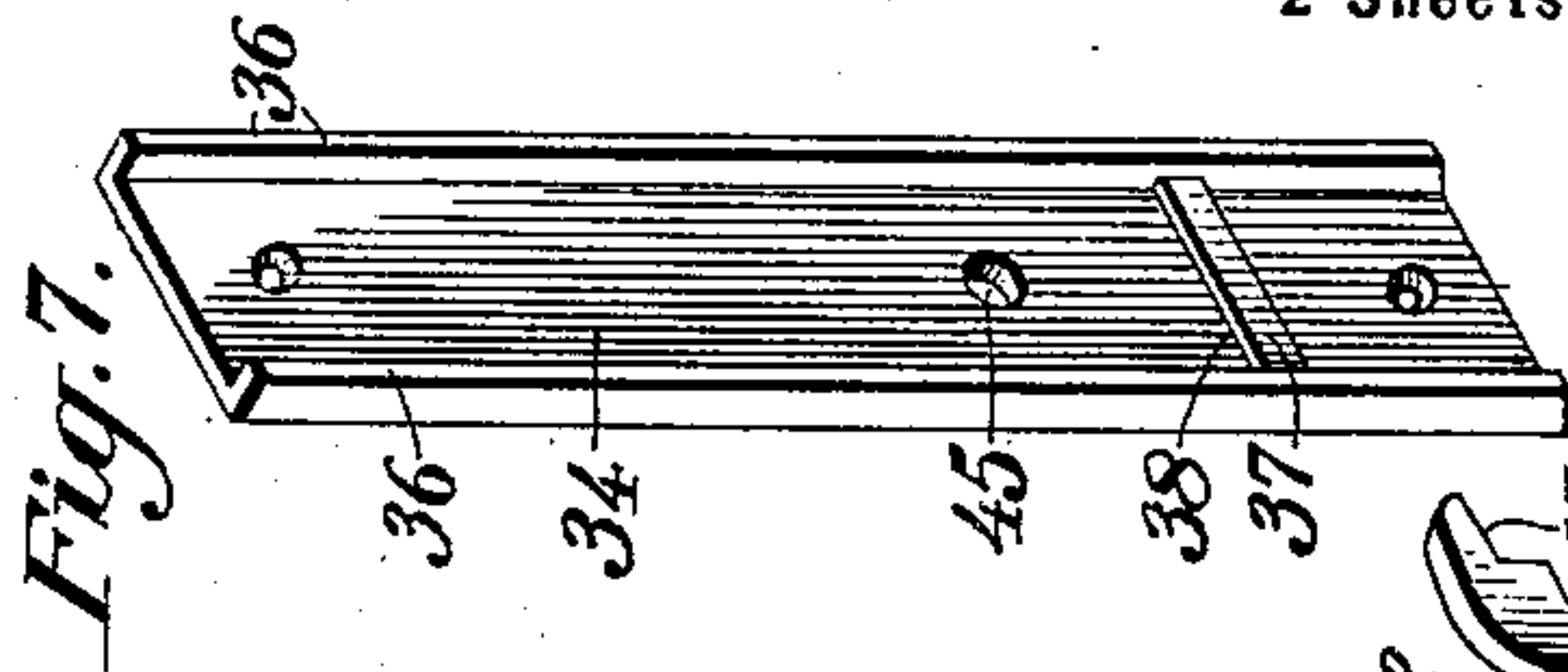
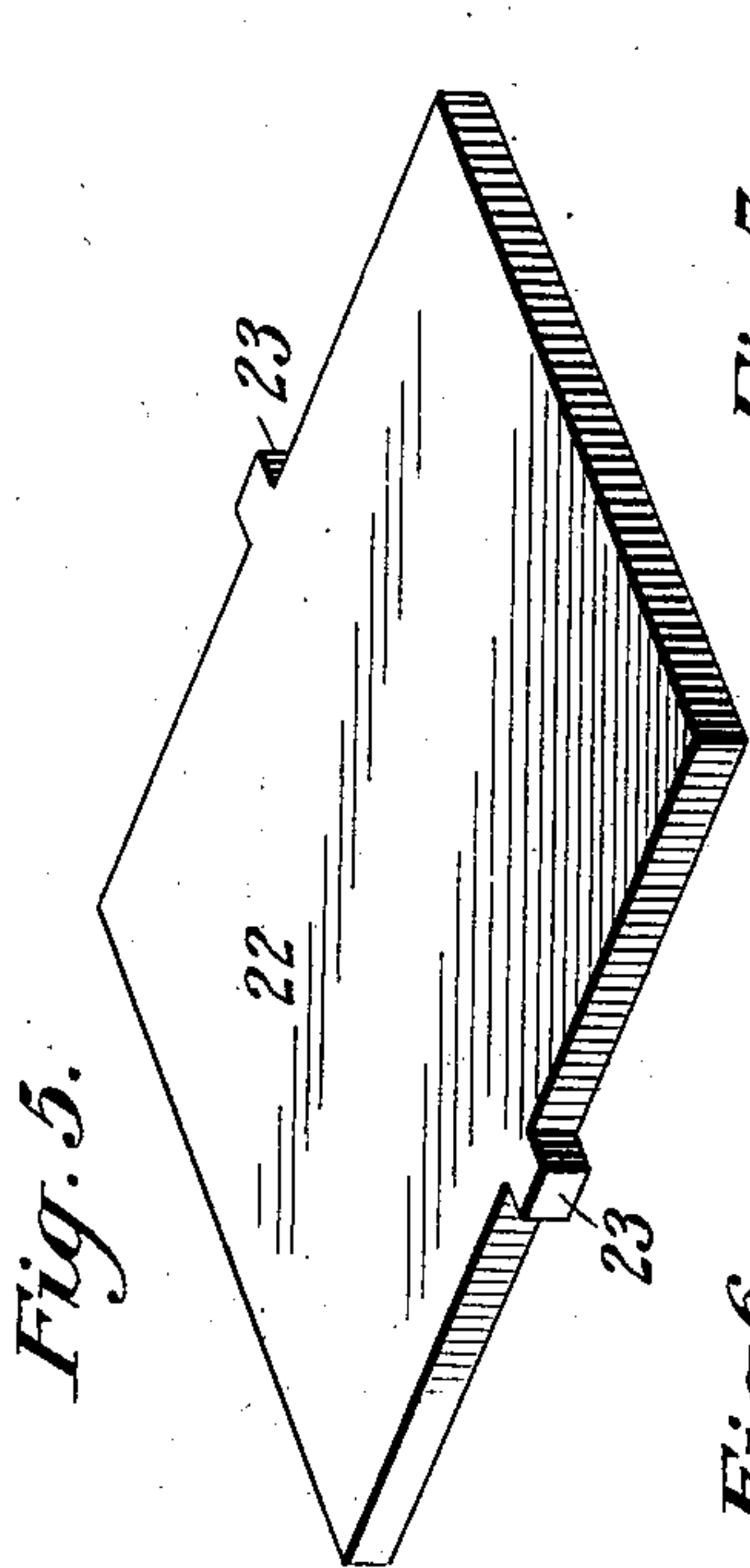
Patented July 22, 1902.

J. D. KNEEDLER.  
COIN CONTROLLED DEVICE.

(Application filed Oct. 8, 1901.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:  
J. W. Riley.  
H. L. Amer.

Fig. 3.

Inventor:  
John D. Kneedler,  
By Rexford M. Smith,  
Attorney.



# UNITED STATES PATENT OFFICE.

JOHN DEAM KNEEDLER, OF SIOUX CITY, IOWA, ASSIGNOR OF ONE-HALF  
TO BUEL COUCH, OF SIOUX CITY, IOWA.

## COIN-CONTROLLED DEVICE.

SPECIFICATION forming part of Letters Patent No. 705,362, dated July 22, 1902.

Application filed October 8, 1901. Serial No. 77,982. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN DEAM KNEEDLER, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented a certain new and useful Coin-Controlled Device, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to vending-machines; and the object in view is to provide a simple and reliable coin-operated machine by means of which upon the depositing of a coin of the proper denomination therein suitable delivery mechanism will be unlocked and thrown into readiness for operation, after which the operator may cause one of a series of packages contained in the machine to be delivered to a point where it will be accessible. Unless a coin of the proper denomination is deposited in the machine the operative parts of the machine which constitute the delivery mechanism are incapable of being thrown into action.

A further object of the present invention is to provide means by which only one package at a time may be removed.

Another object of the invention is to provide a cut-off for controlling and closing the coin-receiving slot when the machine is empty and to associate with said cut-off mechanism which will automatically trip the cut-off after the last package has been withdrawn from the machine.

With the above and various objects in view, the nature of which will more fully appear hereinafter, the invention consists in the novel construction, combination, and arrangement of parts hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a front elevation of a vending-machine constructed in accordance with the present invention. Fig. 2 is a vertical transverse section through the machine, taken adjacent to one of the outer walls thereof to illustrate the coin-operated locking devices for the delivery mechanism, one of the frame-plates being broken away to show the packages and the devices associated therewith. Fig. 3 is a horizontal section taken just above the feed and supporting rolls. Fig. 4 is a vertical cen-

tral transverse section taken through the lower part of the machine. Fig. 5 is a detail perspective view of the follower. Fig. 6 is a detail perspective view of the yielding section of the coin-chute. Fig. 7 is a similar view of the stationary section of the coin-chute. Fig. 8 is a perspective view of the locking-dog and controlling-spring. Fig. 9 is a detail perspective view showing the upper end of the stringer-rod and keeper therefor.

Similar numerals of reference designate corresponding parts in all the figures.

In carrying out the present invention I employ a cabinet substantially square or rectangular in plan and of any desired height, said cabinet comprising a bottom or base 1, front 2, sides 3, back 4, and top 5, the said parts being associated in any approved manner and one of the sides 3 being preferably made removable by means of detachable fasteners 6, such as screws. By making one side detachable it enables access to be had to the operative mechanism whenever necessary and also enables the coin-receptacle to be emptied. The cabinet may be provided with suitable molding 7 at top and bottom and otherwise ornamented as desired. By preference the front of the cabinet is provided with a large glass-covered ornamental panel 8, divided, by means of intersecting strips 9, into various spaces adapted to receive suitable advertising matter. Directions for manipulating the machine are also represented on the front of the cabinet, as shown at 10, and the front of the cabinet is further provided with a delivery or discharge slot 11, through which the packages hereinafter referred to are forced outward within reach of the operator. The front and back 2 and 4, respectively, of the cabinet are provided with vertical parallel grooves 12 to permit a pair of frame-plates 13 to be slid therein, said frame-plates being insertible through the top of the cabinet when the latter is removed. By preference these frame-plates do not extend entirely to the bottom of the cabinet, but terminate at a distance above the bottom, as shown in Figs. 2 and 4, where they rest upon shoulders 14, constituting the lower extremities of the grooves 12.

The delivery mechanism embodies a plu-



rality of rolls 15 and 16, all of said rolls being  
 of equal diameter and being journaled in the  
 same horizontal plane. The rolls 15 and 16  
 constitute a rest for a superimposed pile of  
 5 envelopes or wrappers 17, forming packages  
 in which may be placed letter-paper, envel-  
 ops, stamps, &c., to be delivered to the  
 operator. Only the lowermost package 17  
 rests in contact with the rolls 15 and 16, so as  
 10 to be acted upon by the feed-rolls 15. In or-  
 der, however, to guard against the possible  
 delivery of more than one package at a time,  
 all of the packages are provided near their  
 edges with perforations, enabling them to be  
 15 strung one after another upon a stringer-rod  
 18, which is preferably arranged at or near  
 the back of the cabinet, the lower end of said  
 rod being screwed or otherwise firmly con-  
 nected to the bottom of the cabinet, while the  
 20 upper end thereof is sharpened, as shown at  
 18, to facilitate the placing of the packages  
 thereon. The upper end of the rod is held by  
 means of a keeper 19, which is pivotally con-  
 nected at 20 to the inside of the cabinet and  
 25 provided with a laterally-extending perfo-  
 rated ear 21, adapted to fit over and firmly  
 hold the end of the stringer-rod, as shown in  
 Fig. 2. The packages are urged downward  
 by means of a follower 22, (shown in detail  
 30 in Fig. 5,) preferably consisting of a metal  
 plate of sufficient thickness to give the de-  
 sired weight. Said follower is provided with  
 one or more lugs 23, which traverse vertical  
 grooves 24 in the inner adjacent surfaces of  
 35 the frame-plates 13. All of the rolls 15 and  
 16 are journaled in the bottom portions of the  
 frame-plates 13, as shown in Figs. 2 and 4.  
 The outermost rolls 16 simply serve as sup-  
 ports for the packages and are journaled idly  
 40 and not geared together or to the other rolls.  
 The inner rolls 15 are, however, geared to-  
 gether, so as to rotate simultaneously in the  
 same direction. To accomplish this, the shafts  
 or journals of the rolls 15 are equipped with  
 45 spur-gears 25, with both of which intermeshes  
 an intermediate idle pinion 26, journaled on a  
 short stud-shaft 27, projecting from the adja-  
 cent frame-plate 13. The gears 25 and 26  
 are preferably located at the opposite side of  
 50 the casing from the locking and tripping  
 mechanism to be described.

The feed-rolls 15 have applied thereto  
 toothed segments 28, consisting, preferably,  
 of sheet-metal plates bent to cover approxi-  
 55 mately half of the periphery of the rolls and  
 fastened thereto in any convenient manner.  
 Each of the segments 28 is roughened or  
 toothed, as shown, in order to enable the feed-  
 rolls to obtain a firm grip upon the lower side  
 60 of the lowermost package when said rolls are  
 simultaneously turned in the same direction,  
 which turning is effected by means of an op-  
 erating-crank 29, located upon the exterior of  
 the casing and removably fastened, by means  
 65 of a screw 30 or its equivalent, upon the ex-  
 tended shaft of one of the feed-rolls, as shown  
 in Fig. 3. By covering portions only of the

peripheries of the feed-rolls said rolls are  
 adapted to engage and force outward through  
 the delivery-slot 11 the bottom package. The 70  
 extent of the toothed segments 28 is such that  
 after the bottom package has been projected  
 through the delivery-slot 11 the smooth or un-  
 covered portions of the feed-rolls 15 will come  
 in contact with the next succeeding package 75  
 without tearing the same from the stringer-  
 rod and urging it also outward with the low-  
 ermost package. The provision of the toothed  
 segments 28 insures the lowermost package  
 being torn loose from the stringer-rod, the en- 80  
 velops forming the covers for the packages  
 17 being ordinarily of paper or like fragile  
 material.

The mechanism for tripping and locking the  
 delivery devices will now be described. 85

The front of the cabinet is provided with a  
 coin-slot 31, preferably bounded by or formed  
 in an escutcheon-plate 32. After passing  
 through the slot 31 the coin gravitates down-  
 ward through a coin-chute 33 until it reaches 90  
 the lower sectional portion of the coin-chute.  
 The lower portion of the coin-chute is com-  
 posed of a stationary section 34 and a yield-  
 ing section 35. The stationary section (illus-  
 trated in detail in Fig. 7) is provided with op- 95  
 positely-located flanges 36, so as to confine  
 and direct the coin in its downward move-  
 ment, and adjacent to the bottom said sta-  
 tionary section is provided with a coin-ledge  
 37, which arrests the downward movement of 100  
 the coin until the push-button 38 has been  
 operated. The upper edge of the coin-ledge  
 37 is preferably beveled, as shown at 38, to  
 allow the coin to slip therefrom and fall into  
 the coin-receptacle 39 when the yielding sec- 105  
 tion 35 is operated. The yielding section 35  
 consists simply of a plate adapted to close the  
 open side of the section 34 by lying close to  
 or resting against the flanges 36. The sec- 110  
 tion 35 is provided with an arm 40, provided  
 at its end with an opening to receive a pin or  
 stud 41, mounted on a bracket 42, extending  
 from the front wall of the cabinet backward  
 a suitable distance therefrom, as shown in  
 Fig. 2, said bracket being provided in front 115  
 with an angular flange 43, by which it is se-  
 cured to the inner side of the front of the  
 cabinet, as shown in Fig. 3. The stud or  
 pivot 41 may, if desired, pass into the adja-  
 cent frame-plate 13, as shown in Fig. 3. The 120  
 stem 44 of the push-button 38 passes through  
 an opening 45 in the stationary chute-section  
 34 just above the coin-ledge 37, so as to bear  
 against the coin and push the same off the  
 ledge. The stem 44 passes through an open- 125  
 ing in the front wall of the cabinet and is nor-  
 mally held outward by means of a spring 46,  
 encircling the stem and exerting its tension  
 against a shoulder on the stem, as shown in  
 Fig. 2. 130

Located behind the yielding section 35 is a  
 swinging arm 47, pivotally mounted at 48 on  
 the bracket 42, the free end of said arm be-  
 ing normally urged toward the coin-chute by



means of a spring 49, coiled around the hub 50 of the arm 47 and having one end 51 connected fixedly with the bracket 42, while the opposite end 52 bears against the arm 47.

5 The spring-pressed arm 47 is provided with an extension 53, which lies in contact with the yielding section 35 of the coin-chute, and is provided at the opposite side with another extension 54, constituting a locking-dog, which  
10 coöperates with a locking-disk 55, mounted on the shaft of one of the feed-rolls 15, as shown in Fig. 2. The disk 55 is fast on its shaft and is in the shape of an involute cam, thereby providing a locking-shoulder 56. The  
15 extremity of the dog 54 is notched, as shown at 57, so as to provide a shoulder to meet the shoulder 56 and a projecting or overhanging portion which rests against the periphery of the locking-disk when the parts are in their  
20 locked position, as shown in Fig. 2.

Upon the same shaft which carries the locking-disk 55 there is fastened a ratchet-wheel 58, with which engages a pawl or detent 59, pivotally mounted at 60 on the bracket 42.  
25 The arrangement of the locking-disk, ratchet-wheel, locking-dog, and pawl 59 is such that normally the shaft of the feed-roll which carries the disk 55 is held locked against movement in both directions except to a very  
30 limited extent, a sufficient amount of backlash being provided to enable the dog 54 to disengage itself from the disk 55 when operated upon by the coin and push-button.

61 represents a tripping-pin on the locking-disk 55 for elevating the pawl 59 and disengaging it from the ratchet-wheel 58 as the feed-rolls are turned.

In order to avoid loss to the operator, I provide means for closing the coin-slot 31 immediately upon the delivery of the last package contained in the cabinet. In carrying out this part of the invention I provide a sliding cut-off 62, which is adapted to move up and down behind the escutcheon-plate 32, as shown  
45 in Fig. 2. The cut-off 62 is pivotally hung from one end of a lever 63, which is fulcrumed intermediate its ends and which has its inner end normally held downward by means of a spring 64, which thus operates to hold the cut-off open. Coöperating with the lever 63 is a  
50 trip-lever 65, also fulcrumed intermediate its ends and having connected to one end thereof a slide-bar 66, the lower end of which is provided with a foot 67, which works through a vertical slot 68 in the adjacent frame-plate  
55 13, said foot lying in the path of movement of one of the lugs 23 of the follower 22. Just before the follower reaches the limit of its downward movement it acts on the foot 67 to depress and draw down the slide-bar 66, with the result that the trip-lever 65 is vibrated, thereby effecting a closure of the cut-off through the medium of the lever 63.

In order to prevent unscrupulous persons  
65 from extracting a package from the cabinet, I employ one or more guard-springs 69, as shown in Fig. 4, which springs are located in

recesses 70, formed in the inside surface of the front of the cabinet. The springs normally project across the slot 11; but on account of their flexibility they are adapted to yield under the influence of an outmoving package until a sufficient portion of the package has been projected outside of the cabinet to be grasped and withdrawn by the operator, whereupon the guard-springs spring back into place and close the delivery-slot.

The operation of the machine is as follows: A coin is dropped through the receiving-slot, whereupon it descends until it rests upon the ledge 37. The push-button 38 is then thrust inward, whereupon the stem 44 pushes the coin rearward until it may drop off the ledge 37 and fall into the coin-receptacle 39. As the coin is pushed backward the yielding chute-section 35 is swung backward on its pivotal connection and in turn acts to vibrate the swinging arm 47 against the tension of the spring 49. This has the effect of disengaging the locking-dog 54 from the locking-disk 55. The operator may now turn the crank 29, whereupon the tripping-pin 61 disengages the pawl 59 from the ratchet-wheel 58. The feed-rolls 15 and 16 now grasp the lowermost package, tearing the same loose from the stringer-rod, and force it outward through the delivery-slot. As the package is thus forced outward the feed-rolls complete their revolution, and as the coin has become displaced from the chute and allowed the parts 35 and 54 to resume their normal positions the shoulder 56 of the locking-disk meets the corresponding shoulder of the locking-dog 54, thereby insuring the return of the yielding coin-chute section 35 to its normal position. At the same time the pawl 59 re-engages the ratchet-wheel 58, and thus the feed-rolls are locked against movement in both directions. When the last package is withdrawn from the machine, the cut-off for the coin-slot is automatically operated in the manner above specified.

The construction of the front of the cabinet to provide an advertising space or panel adds greatly to the value and attractive appearance of the cabinet as a whole, enabling advertising matter and announcements to be advantageously displayed adjacent to the printed directions for manipulating or operating the machine.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a package-vending machine, package-delivery mechanism embodying a feed-roll, and actuating means therefor, in combination with a locking-dog engaging the feed-roll, and a coin-chute comprising a hinged section adapted to be operated upon by the coin and to swing the locking-dog out of engagement with the feed-roll, substantially as described.

2. In a package-vending machine, package-delivery mechanism embodying a feed-roll, and actuating means therefor, in combination



with a spring-pressed locking-dog engaging the feed-roll, a coin-chute comprising a hinged section adapted to swing the locking-dog out of engagement with the feed-roll, and means  
5 for pressing a coin against the hinged section of the coin-chute for the purpose of swinging the latter and causing it to operate the locking-dog, substantially as described.

3. In a package-vending machine, package-  
10 delivery mechanism embodying a feed-roll, and actuating means therefor, in combination with a pivoted arm having an extension constituting a locking-dog engaging the feed-roll and another extension projecting toward the  
15 coin-chute, a coin-chute comprising a hinged

section operatively engaged with one of the extensions of the pivoted arm, a spring for urging the pivoted arm toward the coin-chute and holding the locking-dog in engagement with the feed-roll, and a push-button ar- 20 ranged to press a coin against the hinged section of the coin-chute, for the purpose specified, substantially as described.

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

JOHN DEAM KNEEDLER.

Witnesses:

WM. E. DAVIS,  
BUEL COUCH.