No. 864,891. PATENTED SEPT. 3, 1907.

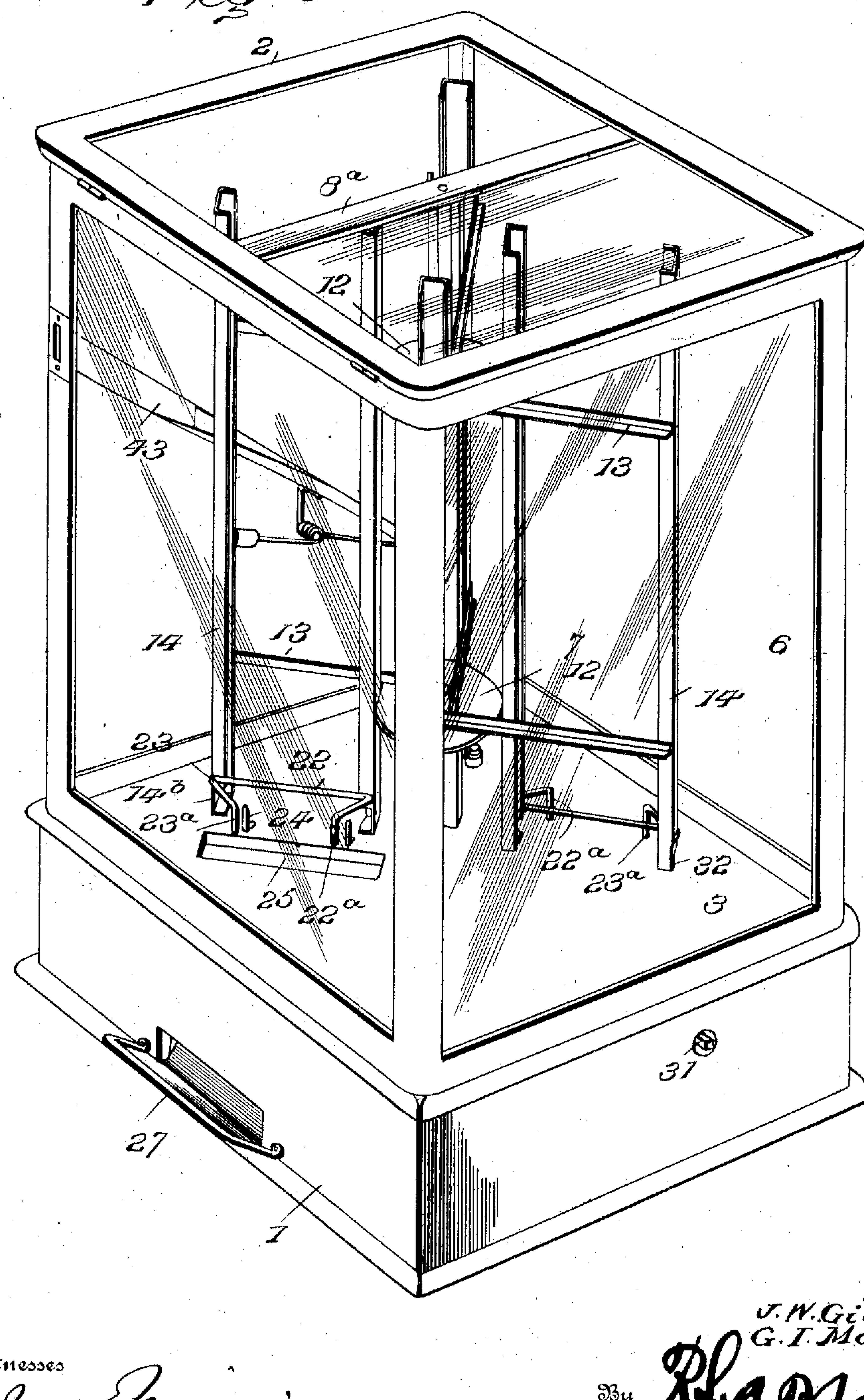
J. W. GILLETT & G. I. MARTIN.

VENDING MACHINE.

APPLICATION FILED OCT. 25, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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3 SHEETS—SHEET 2.

Fig. 2.

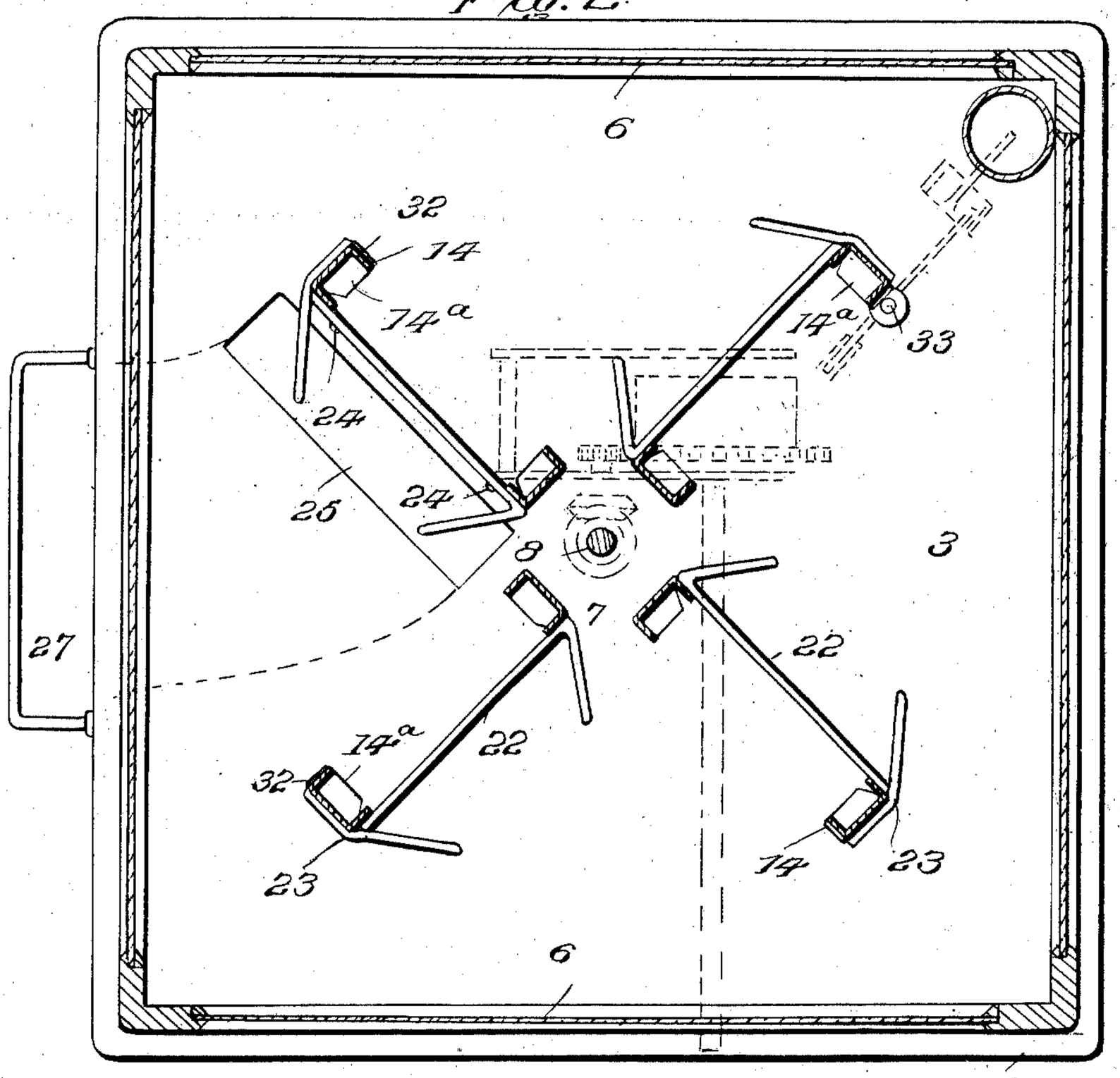


Fig. 3.

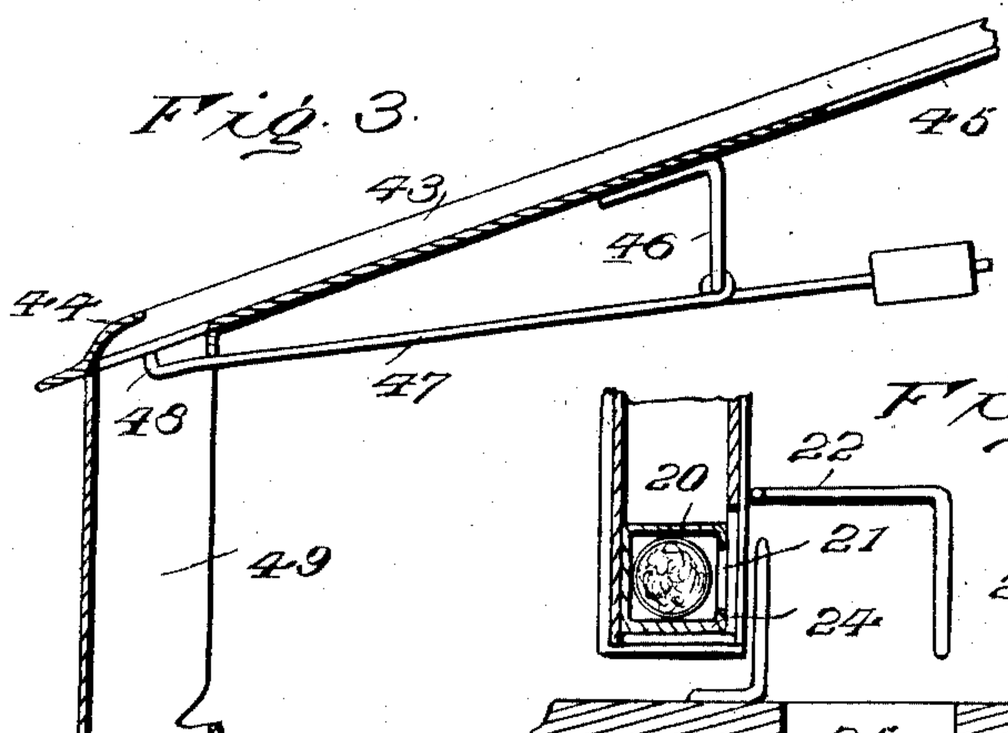
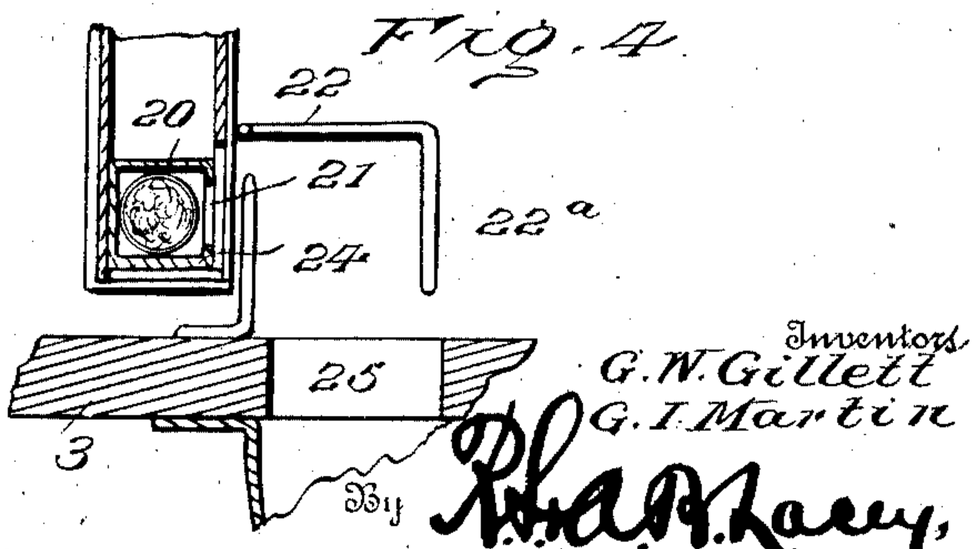


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

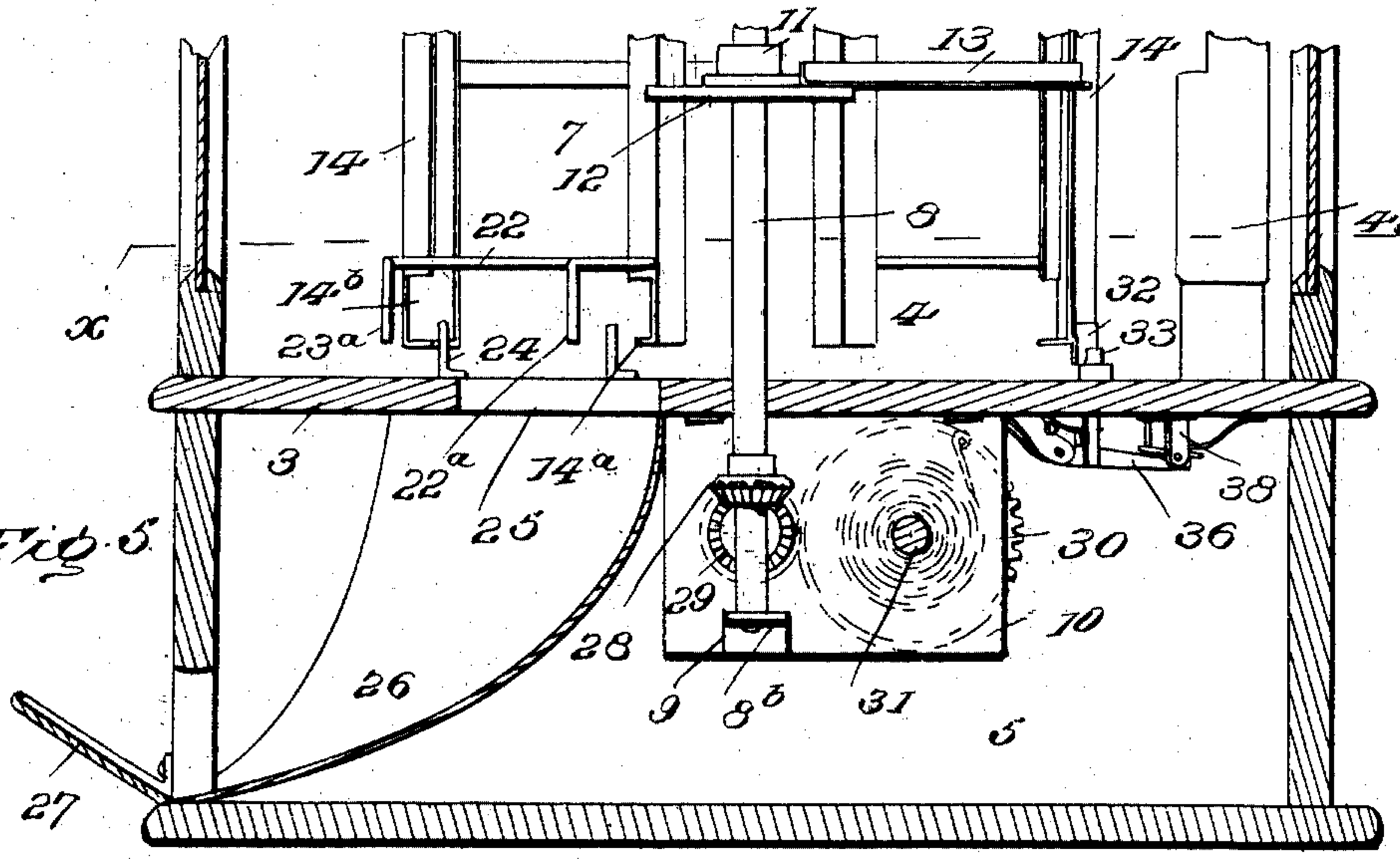


Fig. 6.

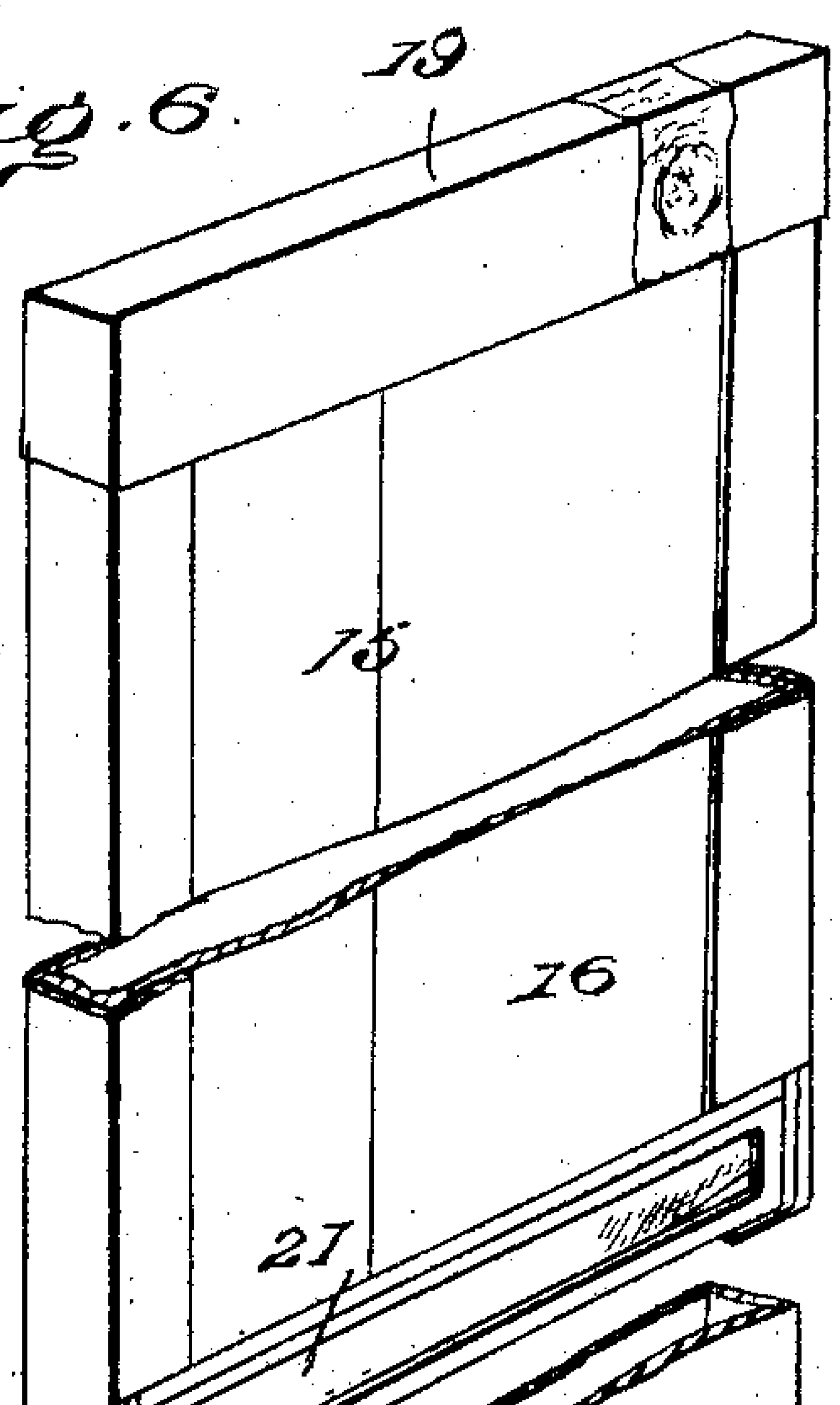


Fig. 7.

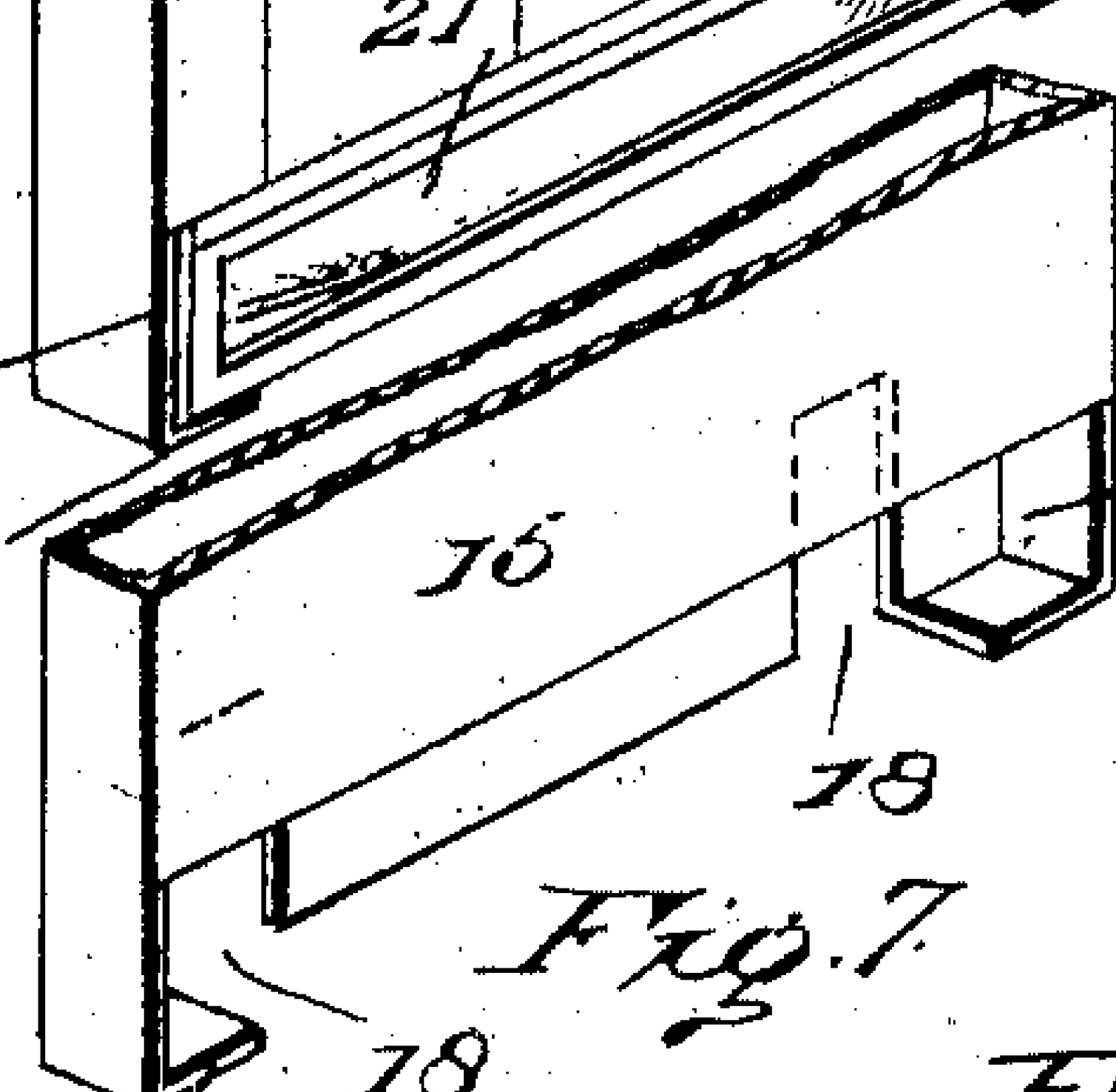


Fig. 8.

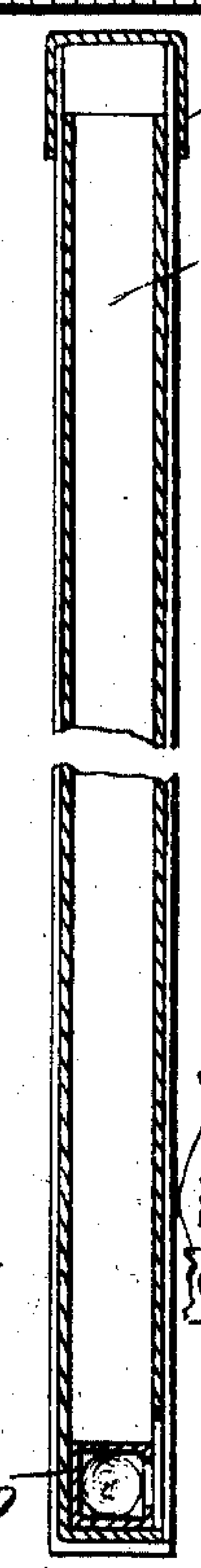


Fig. 9.

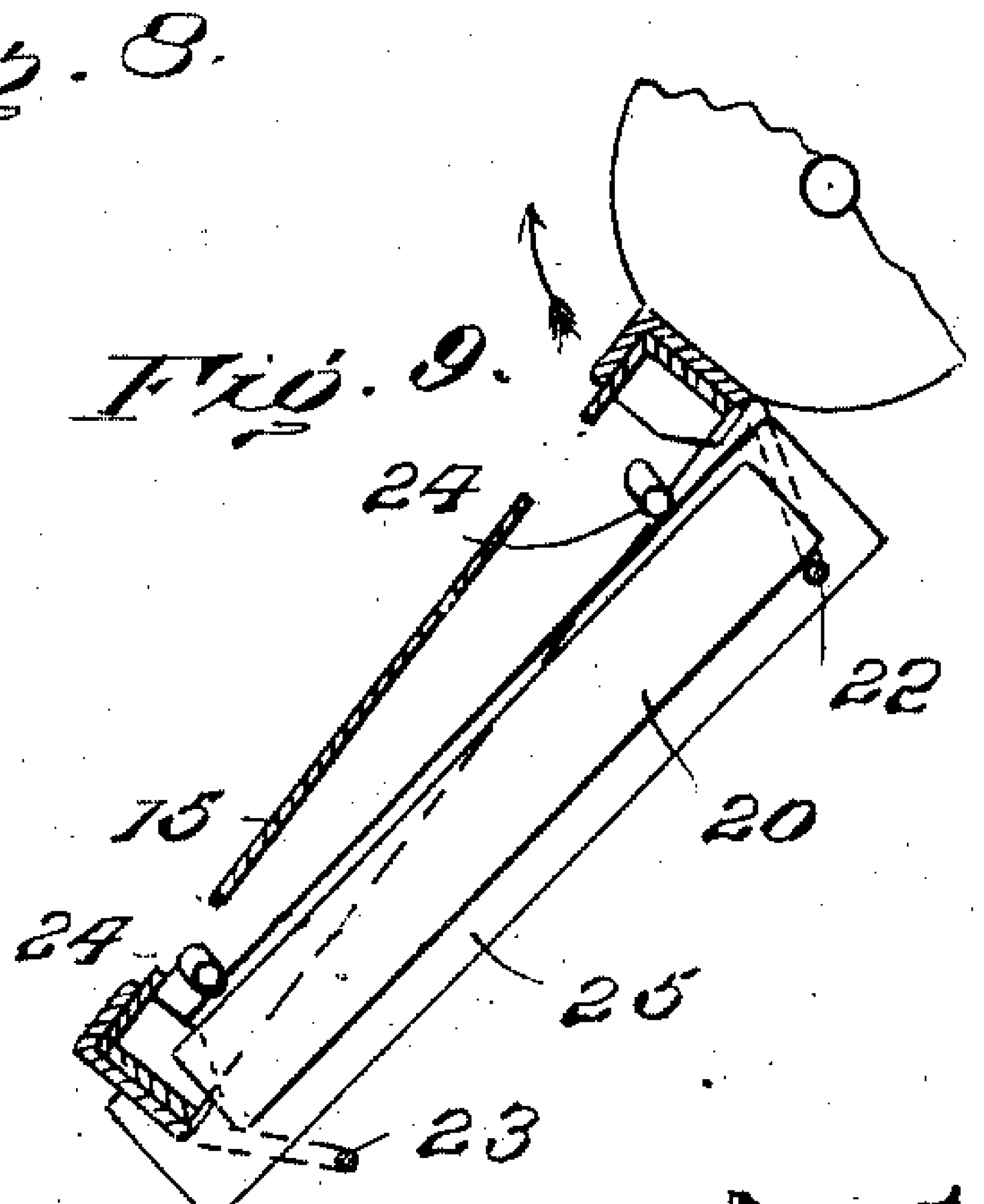


Fig. 10.

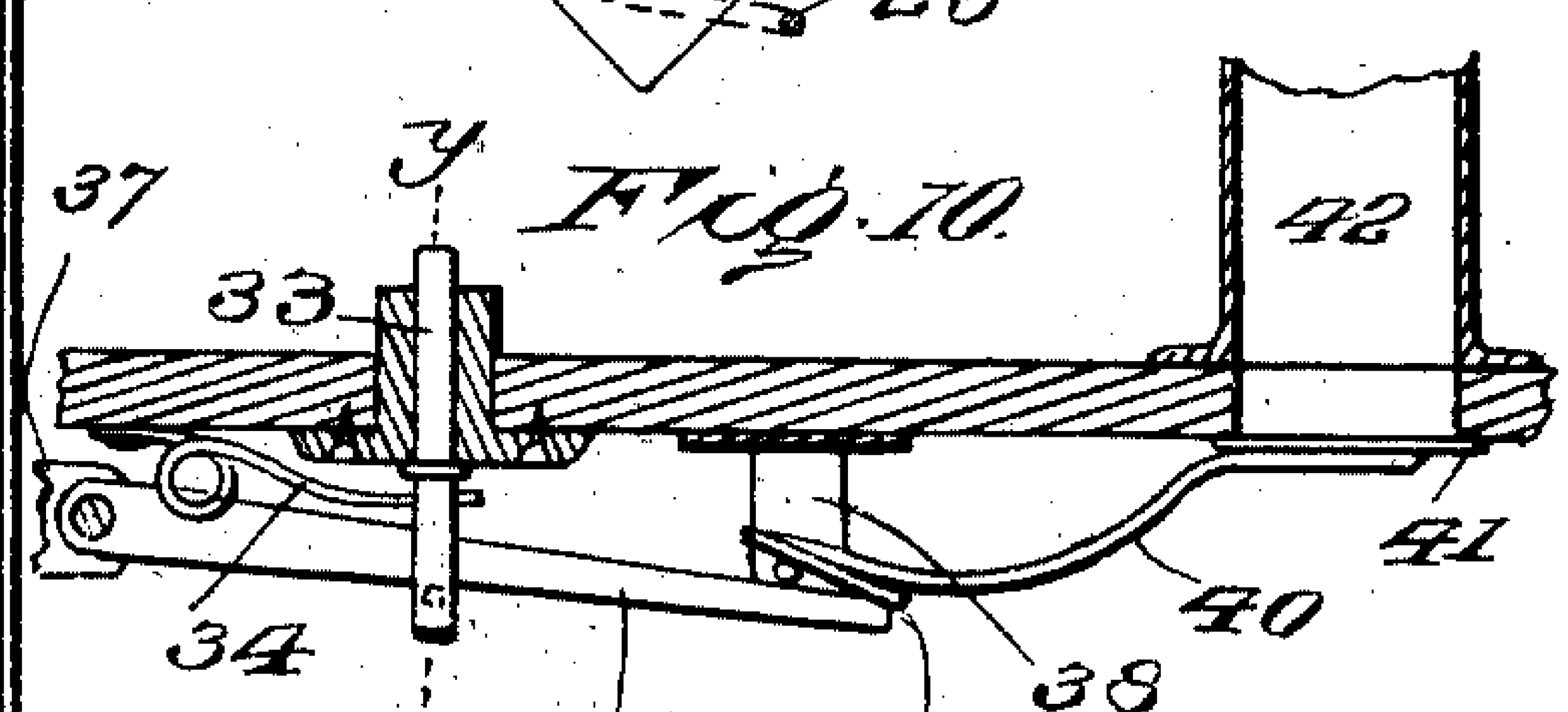
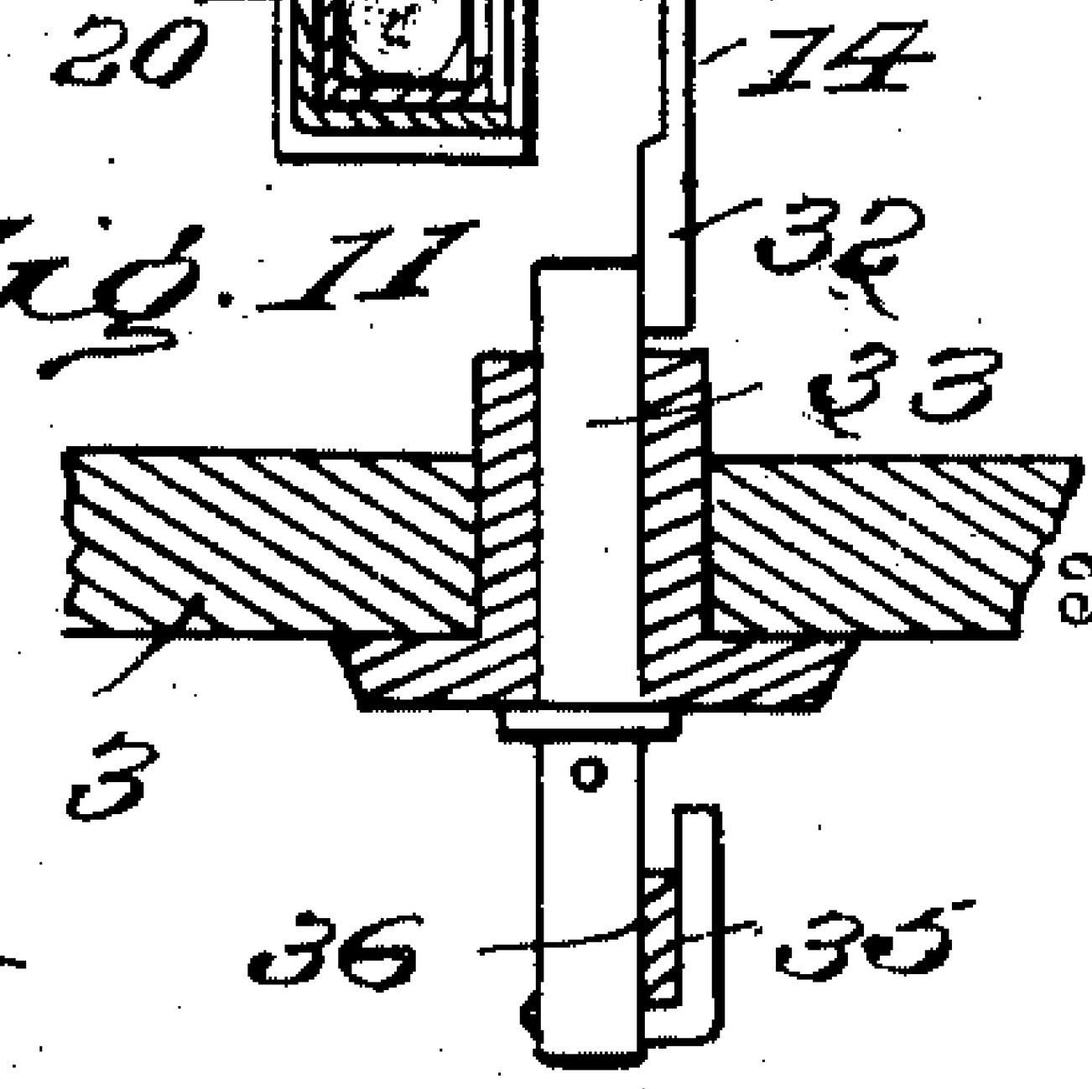


Fig. 11



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UNITED STATES PATENT OFFICE.

JOHN W. GILLETT AND GEORGE I. MARTIN, OF ATLANTIC, IOWA.

VENDING-MACHINE.

No. 864,891. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed October 25, 1906. Serial No. 340,589.

To all whom it may concern:

Be it known that we, JOHN W. GILLETT and GEORGE I. MARTIN, citizens of the United States, residing at Atlantic, in the county of Cass and State of Iowa, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

This invention contemplates certain new and useful improvements in coin controlled vending apparatus, the present embodiment of the invention being particularly adapted for use in vending cigars or similarly shaped articles, although it is to be understood that the invention is not limited to this use.

The object of the invention is to provide a vending apparatus or machine of this character which will be attractive in appearance and operation, as well as of simple and durable construction, and which will embody a novel and useful arrangement and construction of the parts and combinations of the same, as will be hereinafter fully described and particularly pointed out in the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of our improved vending machine; Fig. 2 is a horizontal sectional view thereof taken approximately on the line *x*—*x* of Fig. 5; Fig. 3 is a detail sectional view of one of the fraud detecting devices; Fig. 4 is a detail sectional view illustrating the relative position of the stripping mechanism and the alining mechanism when the revoluble carrier is at rest; Fig. 5 is a vertical sectional view of the lower portion of the apparatus; Fig. 6 is a detail perspective view of one of the boxes designed for use in the vending machine; Fig. 7 is a similar view of the lower portion of said box, but showing the box as empty; Fig. 8 is a vertical sectional view of the box; Fig. 9 is a detail view partly in plan and partly in horizontal section, and is designed to illustrate the combined action of the stripping mechanism and alining mechanism; Fig. 10 is a detail sectional view with parts in elevation, of part of the coin controlled ejecting mechanism; and, Fig. 11 is an enlarged sectional view of the mechanism illustrated in Fig. 10, the section being taken substantially on the line *y*—*y* of Fig. 10.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The casing 1 of our improved coin controlled vending machine is provided with a lid 2 which may be hinged thereto and is also provided with an elevated floor 3 which divides the casing into an upper compartment 4 for the reception of the articles to be sold and the mechanism for holding the same, and a lower compartment 5 which is intended to contain the actuating mechanism and also to serve as a coin depository. The upper compartment 4 is preferably provided with glass panels 6 on all sides and its top, while the lower compartment is preferably inclosed by opaque panels, so that the article magazines may be viewed at all times and the operation of the machine watched, which we believe will add to the interest of the device, while the actuating mechanism itself remains hidden and inclosed in the lower compartment. In addition to the attractiveness produced by the transparency of the upper compartment walls, this feature is an essential one at present, if the machine be used to sell cigars, as it in this respect comes within the scope of the internal revenue requirements.

A revoluble carrier 7 is mounted in the compartment 4 to turn in a horizontal plane, and said carrier embodies a central vertical shaft 8 held to turn about its longitudinal axis in a cross bar 8^a at the top of the compartment and in a step bearing 8^b supported on the end of the bracket 9 secured to the motor casing 10 in the lower compartment 5. The shaft 8 passes freely through the floor 3, as shown. Secured upon the shaft 8 are upper and lower collars 11 and disks 12 are secured or formed integrally with said collars. Supporting arms 13 are secured at their inner ends to the disks 12 and radiate therefrom and to these arms are secured pairs of vertically extending channeled side bars 14, which, with the arms, constitute box receiving frames. The channels of the two side bars of each frame face toward each other. Boxes 15, which, in the present instance are shown as cigar boxes, are received within said frames and constitute therewith magazines for the articles that are to be sold. Each of these boxes is in the present instance of cigar width and is stood on end by being slid downwardly within the channeled side bars, and each box is provided with a hinged lid 16 and is cut away at one end to form a lateral discharge opening 17 opposite which two end opening slots 18 are formed. A cap or closure 19 is intended to cover the said cut-away and slotted end of the box, when the cigars are packed therein and come from the factory, and it is intended that the internal revenue stamp shall extend around this cap or closure, and up over the seam or slit formed at the edge of the lid 16. Hence, as this cap or closure 19 must first be removed before the cigar box 15 can be operatively supported in its frame of the carrier, the internal revenue stamp must manifestly be broken, according to law, and it is intended that the cap after having been detached shall be inserted over the upper ends of the channeled side bars 14 or the upper end of the box 15 so as to be always in a conspicuous position. Hence, the inspectors may see at a glance that the torn or separated ends of the stamp match each other.

The channeled side bars 14 are provided at their

lower ends with inwardly bent portions forming supporting ledges 14ª above which one side of the channeled walls are cut away to form the lateral opening 14ᵇ coincident with the cut away portion or lateral discharge opening 17 of the box, and the box is preferably provided with corresponding ends 15ª at each side of the opening 17, these ends 15ª being flush with the said ledges as shown.

The cigars, if cigars are to be sold, are preferably contained in separate cells 20 arranged in superposed relation within the box 15, and each of said cells is provided with an open side 21 through which the cigar may be viewed when the box 15 is opened, so as to determine at a glance the size, shape and number of cigars in each compartment or cell. Preferably, to exclude moisture and preserve the cigar, each cigar is wrapped in tin-foil or oiled paper.

22 and 23 designate two alining devices which are connected to the frames or magazines of the revoluble carrier to move therewith. These traveling alining devices in the present instance are shown as two wire fingers, one of which (22) is secured at its ends to the sides of the channeled bars 14 just above the opening 14ª thereby assisting in bracing the channeled side bars 14, the extremity of said finger extending slightly inwardly and thence downwardly as indicated at 22ª, while the other alining device (23) is secured at one end to the outer side of the outermost side bar 14 and extends slightly inwardly and downwardly at its other end, as indicated at 23ª. These converging fingers or alining devices are intended to coact with stripping mechanism, which, in the present instance comprises two upwardly extending stationary fingers 24 arranged at the rear side of a discharge opening 25 formed in the floor 23. This opening extends in a radial direction coincident with the radius of the revoluble carrier 7 and is of a size to pass the cells 20, and leading downwardly from the discharge opening is a discharge chute 26 extending at its bottom to a side opening in the front of the compartment 5 in the casing and on to a tray 27 from which the articles may be withdrawn.

The specific operation and correlation of the two alining devices 22 and 23 with respect to the movement of the revoluble carrier and the stationary stripping fingers 24 will be described hereinafter in connection with the operation of the other parts of the apparatus.

In order to revolve the carrier 7, the shaft 8 is provided near its lower end with a bevel pinion 28 meshing with a corresponding pinion 29 on the actuating shaft of a motor 30 mounted within the casing 10. In the present instance this motor is a spring motor, the winding shaft 31 of which extends out through one wall of the lower compartment 5 so as to be engaged by a key.

The revoluble movement of the carrier 7 is essentially an intermittent one and to secure this effect, each of the frames or magazines is provided with a lug or keeper 32 which is shown as projecting downwardly from the outermost side bar of each frame. In the path of movement of these lugs 32 a plunger or latch pin 33 is located, said latch being pressed upwardly above its casing so as to obstruct the free passage or movement of the lugs or keepers 32 by means of the spring 34 which is shown as secured at one end to the under side of the floor 3 and has its other end passing through an opening in the latch. The latch 33 is provided at its lower end with an upwardly facing hook 35, and a lever 36 has its free end inserted through said hook and is fulcrumed to the supporting plate 37 attached to the under side of the floor 3 so that as the lever is depressed, the plunger or latch 33 will be moved downwardly.

A hanger 38 is secured to the under side of the floor 3 in juxtaposition to the free end of the lever 36 and a releasing plate 39 is eccentrically pivoted between the members of said hanger in position to depress the lever 36, when the said plate is swung downwardly. A depressing arm 40 is soldered or otherwise secured to the plate 39 and the free end of said depressing arm carries a coin disk 41 which is adapted to close the lower end of an upwardly extending coin chute 42 opening into the lower compartment 5. The tension of the spring 34 is such as to hold the arm 40 and the coin disk at the upper limit of their movement, with the disk extending over the opening at the lower end of the chute 42.

An inclined coin race-way 43 opens at its lower end into the upper end of the vertical chute 42 and is provided at its other end with a coin entrance opening, and said race-way is preferably twisted in its length as shown, so that a coin may be inserted therein on its edge and thence turned as it rolls down the race-way so as to be deposited in the upper end of the chute 2 face downward. A guide plate or buffer 44 is secured to the lower end of the race-way at the far side of the upper end of the coin chute 42 so as to prevent the coins from overshooting the chute. The race-way 43 is provided along its length with a slot 45 which is of a width to shunt those coins that are not of the requisite diameter. In order to prevent nut washers or similar fraudulent devices from passing into the chute 42, we provide a hanger rod 46 depending from the lower side of the race-way 43 between the lower end of the latter and the slot 45, and a counter-weighted deflector 47 which is preferably coiled intermediate of its ends to form a bearing by which it is pivotally suspended from the hanger and which is formed at one end with an upwardly facing hook 48 designed to project into the upper end of the coin chute 42 through an opening 49 therein and slightly above the bottom of the race-way. Hence, when a nut washer or the like is deposited in the race-way, the hook 48 will catch the same and the weight of the washer will rock the deflector rod 47 so as to deflect the washer and cause it to be discharged laterally from the chute through the opening 49 instead of being passed to the coin disk 41.

In the practical operation of the machine, when the cigar or other boxes are inserted on end within the frames of the revoluble carrier, as above described, the insertion of the proper coin into the coin race-way will permit the coin to slide downwardly and into the coin chute and fall upon the coin disk 41, the momentum of the coin will depress the coin disk 41 and its arm 40 so as to slide the latch 33 downwardly in its casing and free the carrier momentarily, while the coin will roll from the disk into the depository constituted by the lower compartment 4 allowing the plunger or latch to again assume its normal position in the path of the keepers so as to bring the revoluble carrier to a standstill after a single actuation. This temporary release of the carrier will allow it to swing around a sufficient distance for one of the article holding frames or magazines to sweep across the discharge opening 25. As

this occurs, the stripping fingers 24 which register with the slots 18 of the box 15 will strip the lowermost cell 20 outwardly through the discharge opening 17 and opening 14b. As the discharge opening 25 and the stripping fingers 24 are substantially in radial alinement with the revolving magazines, it is evident that the more centrally located finger of the two will first engage one end of the lowermost cell and sweep the innermost end of said cell out of the magazine before the outermost stripping finger shall have come into contact with the outer end of said cell. In this connection the alining devices are most important. As the inner end of the lowermost cell 20 is swung outwardly as described by the inner stripping finger, it will be caught by the innermost traveling alining device and prevented from being turned about one end on the pivot so as to swing diagonally across the discharge opening, and as said innermost alining device travels, it will turn the cell into perfect alinement with the discharge opening and allow the outermost stripping finger to then actuate to sweep the other end of the cell out, and said latter end of the cell will be caught by the other alining device and by this engagement the said cell will be accurately directed into the discharge opening from whence it will slide or roll out to the tray 27 in convenient position to be withdrawn. Without such an arrangement of parts as just described, it is obvious that the innermost stripping finger might sweep the inner end of the lowermost cell with such force, especially if the carrier is at its highest tension, as to cause the cell to miss the discharge opening and clog the entire apparatus, as well as injure the cigar being discharged. With this arrangement of parts and the successive correlation of the innermost stripping finger, the innermost alining device and the outer stripping finger and outer alining device, the possibility of such an occurrence is precluded, and this is a desideratum in this art, and we believe it to be essential where a revoluble carrier is employed.

The pivotal movement of the lowermost cell, which is described above and which is corrected by the alining devices, is caused by the weight of the superposed cells upon the lowermost cell, which causes the outer end of the lowermost cell to be held and constitute a pivot for the inner end which is being pushed out by the innermost stripping finger.

It is to be noted that the releasing plate 39, which acts upon the lever 36, may be swung entirely back past the center where it will be thrown out of an operative position, whenever it is desired that the deposit of a coin shall not work the machine.

Having thus described the invention, what is believed as new is:

1. A machine of the character described, comprising a revoluble carrier, means for intermittently actuating said carrier, the carrier embodying an article magazine, a casing for the carrier, said casing being provided with a discharge slot or opening in the path of movement of the magazine, stripping mechanism adapted to cause the ejection of an article from the magazine as the latter revolves across the opening, and an alining mechanism coacting with said stripping mechanism.

2. A machine of the character described, comprising a revoluble carrier, means for intermittently actuating said carrier, the carrier embodying an article magazine, a casing for the carrier, said casing being provided with a discharge slot or opening in the path of movement of the magazine, inner and outer stripping fingers adapted to successively engage one side of an article and eject it from the magazine as the latter revolves, and alining mechanism consisting of inner and outer alining devices adapted to successively engage the opposite side of the article as it is being ejected.

3. A machine of the character described, comprising a revoluble carrier, means for intermittently actuating said carrier, the carrier embodying an article magazine, a casing for the carrier, said casing being provided with a discharge slot or opening in the path of movement of the magazine, stripping mechanism adapted to engage one side of an article and cause the ejection of the same from the magazine as the latter revolves across the opening, and an alining mechanism coacting with said stripping mechanism, the alining mechanism consisting of inner and outer alining devices embodying fingers connected to the magazine and provided with downwardly extending extremities adapted to successively engage the opposite side of the article, as and for the purpose set forth.

4. A machine of the character described, comprising a revoluble carrier, means for actuating said carrier, the carrier embodying a vertical rod mounted to rotate about its longitudinal axis, collars secured on said rod, disks secured to said collars, radiating arms secured at their inner ends to said disks, pairs of vertical channeled bars secured to said arms with their channels facing each other, said channels being open at the top, and the bars being provided at their lower ends with inwardly extending ledges and openings contiguous to and above said ledges, article holding boxes adapted to be slid downwardly between the respective pairs of said bars and rest at their lower end therein and formed with a lateral discharge opening, stripping fingers adapted to sweep an article through the lateral discharge opening of a box as the carrier revolves, a casing for said carrier provided with a discharge opening located in the path described by the boxes, as they revolve, and alining devices provided with downwardly projecting extremities spaced from the discharge opening of the respective box, and one of said alining devices extending across from one bar to the other of the respective pairs and constituting a brace therefor.

5. A machine of the character described, comprising a revoluble carrier embodying vertical frames arranged to revolve in a horizontal plane, means for intermittently actuating said carrier, a casing for the carrier provided with a discharge slot, disposed radially with respect to the carrier, inner and outer stripping fingers located contiguous to one side of said slot and adapted to engage an article and cause its ejection from the carrier as the latter revolves, and alining mechanism adapted to engage the article and register it with the discharge slot or opening.

6. A machine of the character described, comprising a revoluble carrier, means for intermittently actuating said carrier, a casing for the carrier provided with a discharge slot disposed radially with respect to the carrier, inner and outer stripping fingers adapted to successively engage an article and cause its ejection from the carrier as the latter revolves, and outer and inner alining devices adapted to successively engage the article at its ends as it is being ejected.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN W. GILLETT. [L. S.]
GEORGE I. MARTIN. [L. S.]

Witnesses to signature of John W. Gillett:
C. A. MEREDITH,
ARVID PETERSON.

Witnesses to signature of George I. Martin:
J. W. MARTIN,
J. H. TAIT.