No. 841,083. PATENTED JAN. 8, 1907.

I. H. GARSON.

CIGAR VENDING MACHINE.

APPLICATION FILED MAR. 6, 1905.

3 SHEETS—SHEET 1.

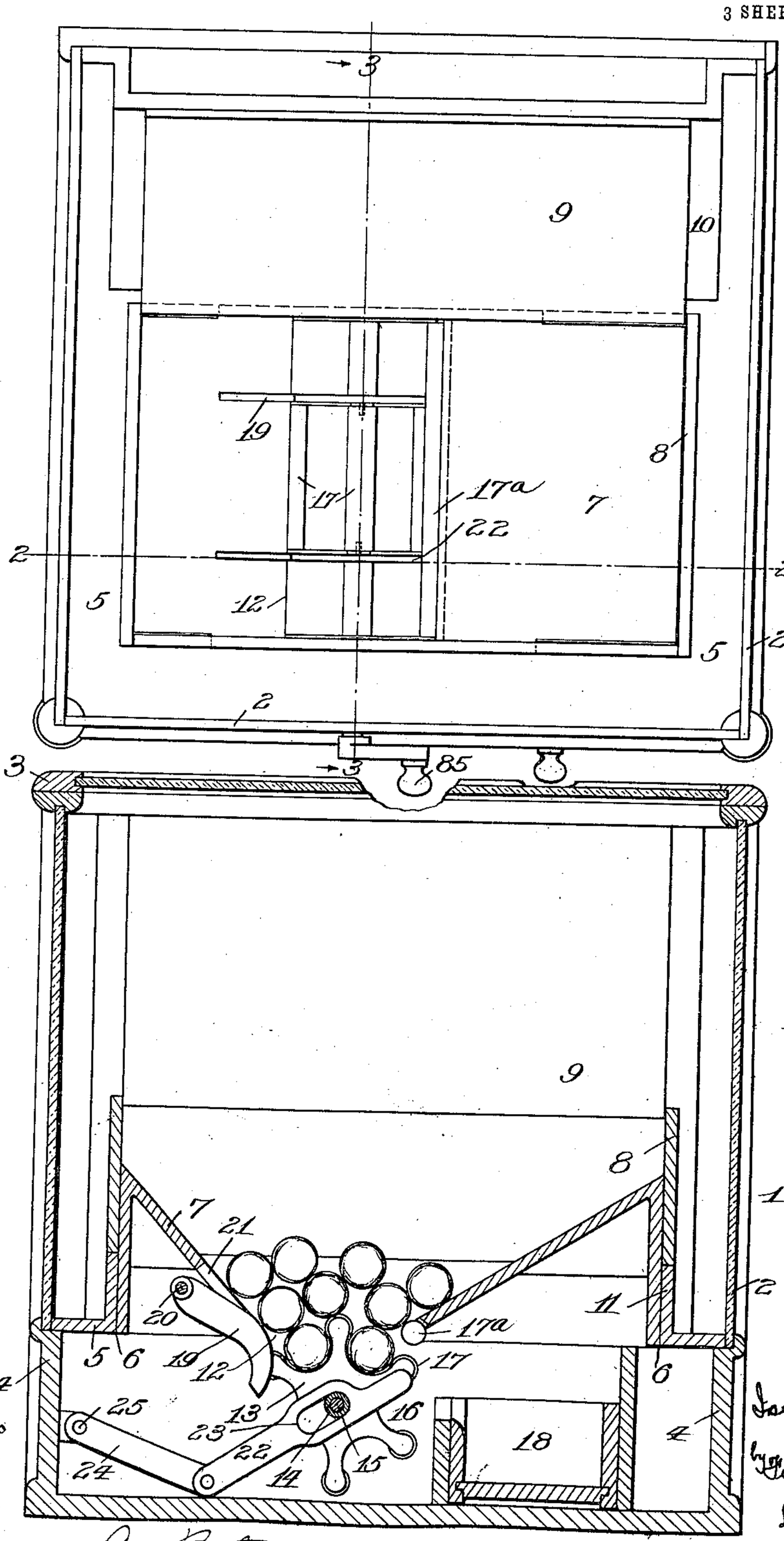

Fig. 1.

Fig. 2.

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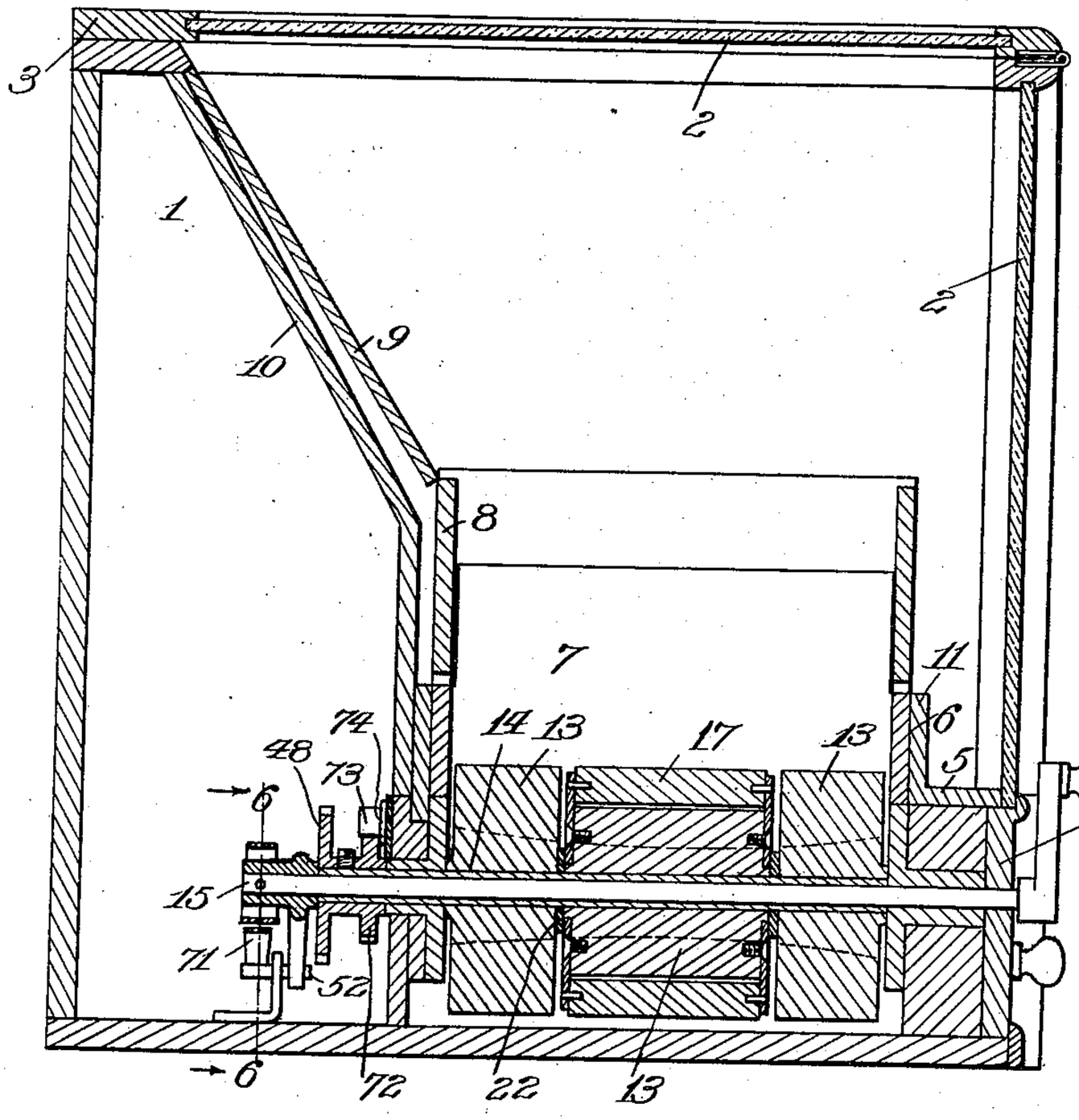

Fig. 3.

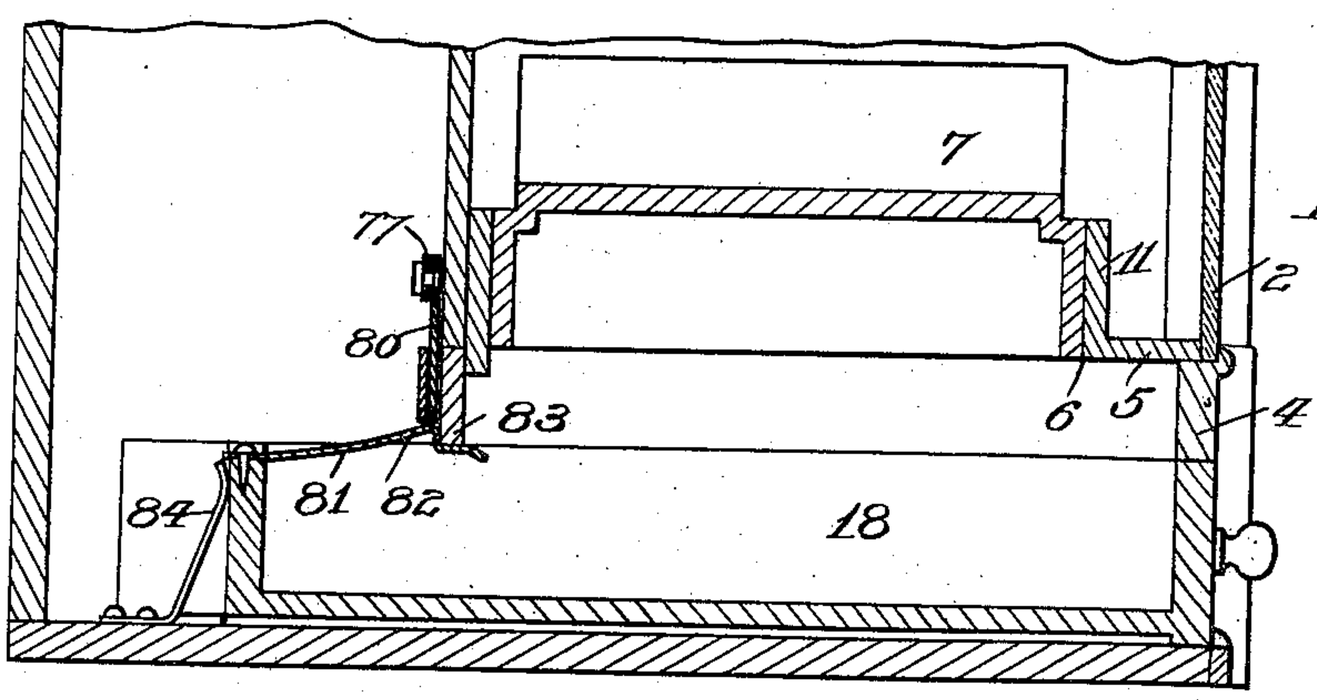

Fig. 4.

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3 SHEETS—SHEET 3.

Fig. 5.

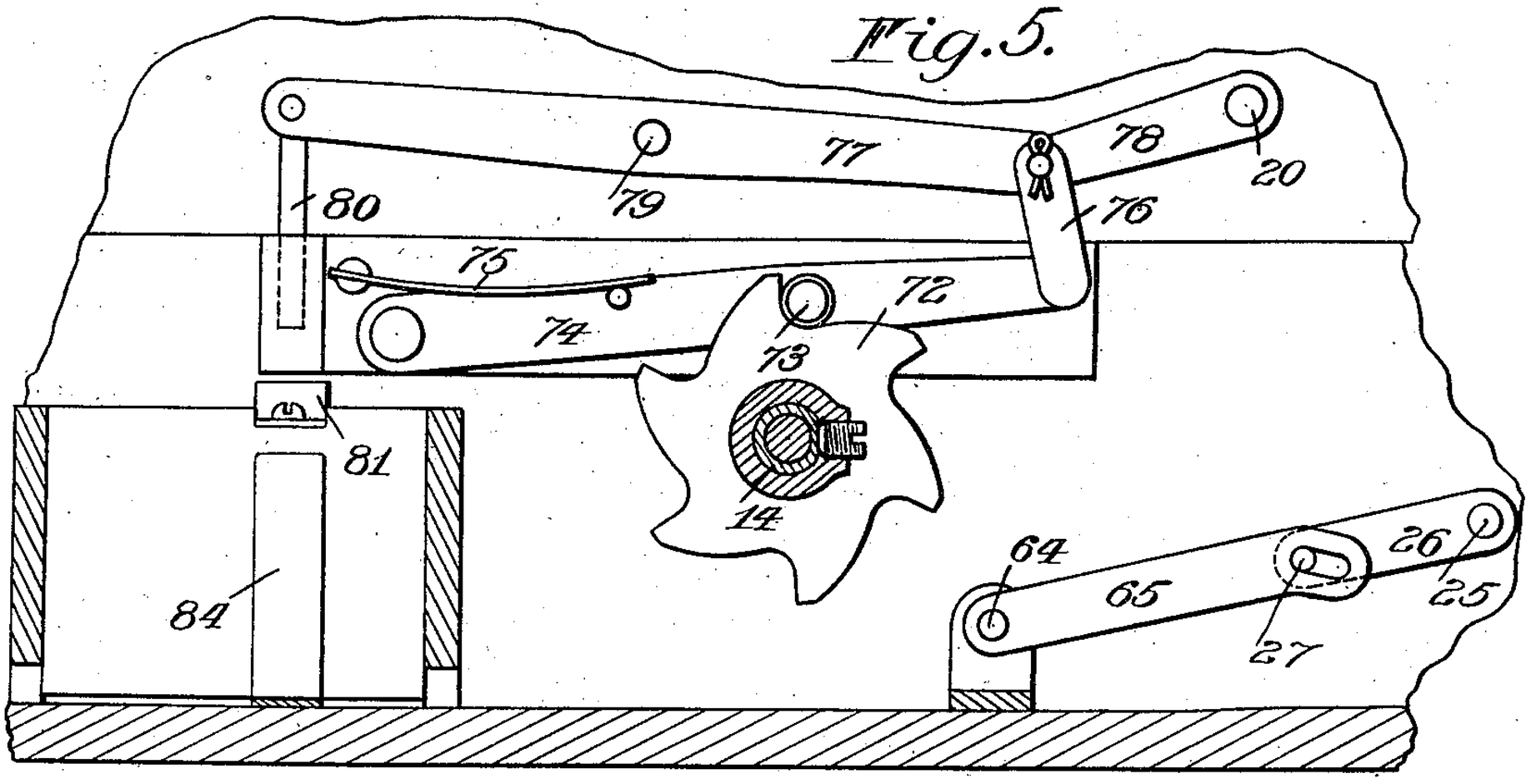
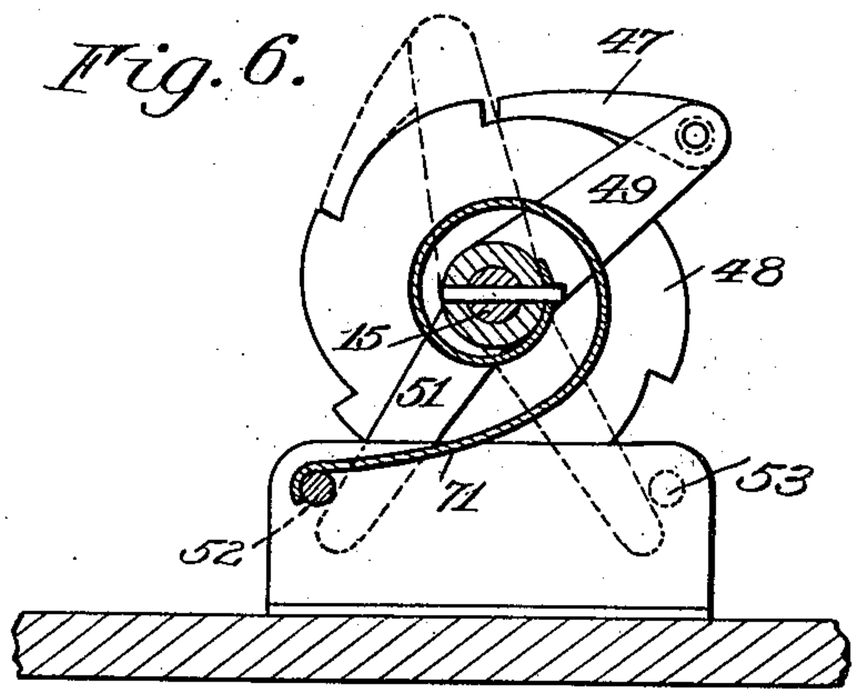


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CIGAR-VENDING MACHINE.

No. 841,083. Specification of Letters Patent. Patented Jan. 8, 1907.

Original application filed December 16, 1904, Serial No. 237,138. Divided and this application filed March 6, 1905. Serial No. 248,373.

To all whom it may concern:

Be it known that I, ISAAC H. GARSON, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Cigar-Vending Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to improvements in vending-machines, particularly of the kind for vending and handling cigars and other similar articles which are liable to breakage and injury in handling; and the purpose of my present invention is to provide a device of this kind which is capable of delivering the cigars or other articles to the purchaser directly from the original stamped package without liability of breaking or otherwise injuring them, and in such a way that each cigar will be visible to the purchaser immediately before delivery from the package, the present application being a division of my former application, Serial No. 237,138, filed December 16, 1904.

To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully explained, the novel features being pointed out in the claims at the end of the specification.

In the drawings, Figure 1 is a plan view of a vending-machine constructed in accordance with my invention, the top of the casing being removed. Fig. 2 is a vertical sectional view of the same on the line 2 2 of Fig. 1. Fig. 3 is a vertical sectional view on the line 3 3 of Fig. 1 looking in the direction of the arrow. Fig. 4 is a fragmentary view showing the locking device for the drawer on an enlarged scale. Fig. 5 is a sectional view taken transversely of the operating-shaft, showing the arrangement of the devices for locking and unlocking the drawer and for operating the agitating devices of the hopper; and Fig. 6 is a sectional view on the line 6 6 of Fig. 3 looking in the direction of the arrow, showing the actuating device for the delivery mechanism.

Similar reference-numerals in the several figures indicate similar parts.

As hereinbefore stated, the present application is a division of my prior application, Serial No. 237,138, filed December 16, 1904, which shows a complete vending-machine which is adapted particularly for handling cigars and other frangible articles, which is provided with coin-controlled mechanism which is particularly adapted for a machine of this kind, the coin-controlled mechanism being covered in the aforesaid prior application and the delivery mechanism for handling the cigars being reserved for this application.

A cigar-vending machine constructed in accordance with my invention comprises in the present instance a casing 1, which may be of any desired configuration and dimensions, which is preferably rendered transparent by the use of the panels 2, which may be composed of glass or other transparent material which incloses the sides and top of the casing, a hinged or removable closure 3 being provided, preferably at the top of the casing, for the purpose of permitting of access to the interior thereof. The lower portion of the casing is preferably composed of a box 4, which is adapted to contain a portion of the mechanism of the machine and is separated from the upper portion of the casing by a partition 5, the latter being provided with an aperture 6, within which is fitted a hopper 7, the exterior dimensions of which are such as to permit it to enter between the sides of an ordinary cigar box or receptacle 8 from which the top or bottom has been previously removed, it being preferable in the present instance to remove the bottom of the box and place the latter over the hopper with its cover or lid 9 opened and supported against the relatively inclined support 10 of the casing in the manner shown in Figs. 1, 2, and 3, for this enables the cigars to be exhibited in their original form and package to the purchaser and permits ready inspection of the package and its contents by the revenue officials, as required by the revenue laws. The hopper 7 preferably extends only partially into the box or receptacle, and for the prupose of supporting the box in the proper position the flange 11 may be employed, which surrounds

the hopper and forms an abutment for the lower edges of the box.

The bottom of the hopper 7 is inclined from its ends toward its center, where it is provided with the elongated aperture 12, beneath which operates a carrier 13, which is mounted on a sleeve 14, revolubly fitted over the shaft 15, the periphery of the carrier 13 being provided with a series of axially-arranged pockets 16, which are cigar-shaped to readily receive a cigar of ordinary dimensions, rollers or other antifriction devices 17 being preferably fitted in the walls of the pockets to enable the cigars to readily enter and leave the pockets of the carrier with the slightest friction and pressure, a similar roller 17^a being employed on the adjacent edge of the hopper 7, if desirable, to facilitate the passage of the cigar from the carrier. At one side of the carrier 13 is provided a receptacle for the reception of the articles from the carrier, a slidable drawer 18 being employed in the present instance which is capable of being withdrawn from the casing of the machine by the purchaser when one or more cigars or other articles have been deposited therein by the carrier. At the opposite side of the carrier 13 are mounted the agitating devices, which are preferably employed for arranging the cigars or other articles within the hopper, so that they will properly enter the carrier, and in the present instance they embody the curved fingers 19 19, which are mounted on a rotatable shaft 20 and are arranged to operate through the corresponding slots 21 21, formed in the bottom of the hopper, the carrier 13 being divided into separate sections to enable the extremities of these agitating-fingers to partially enter the pockets thereof as they are carried past the discharge-aperture of the hopper, and as these fingers are lifted in a manner that will hereinafter appear the cigar which is adjacent thereto will gradually slide over the curved portion thereof until it rests in the adjacent pocket of the carrier, the release of the fingers causing them to suddenly drop back and thereby bring another cigar into operative position to enter the carrier at the next succeeding operation.

Between the separate sections of the carrier 13 are arranged the arms 22 22, which are each provided with a slot or aperture 23 to receive the sleeve 14 as a support about which the said arms may move as a fulcrum, the upper end of each arm being so arranged as to be engaged by each cigar in its corresponding pocket of the carrier prior to its discharge therefrom to cause a tilting motion of the arms, and as the opposite ends of these arms are connected to the crank 24, which is fixed to a rock-shaft 25, an oscillatory motion will be thereby imparted to the arms, which will cause the crank 26, which is fixed to the opposite shaft end, to be elevated. This crank 26 is provided with a pin 27, which connects it with the link 65, fixed to the shaft 64, the operation of these parts being hereinafter more fully described.

For the purposes of the present application it is immaterial as to the particular form of mechanism which is employed for controlling the operation of the delivery mechanism; but I prefer to employ the form shown and described in the aforesaid prior application, the carrier-operating mechanism of which I will describe generally as consisting of a ratchet-wheel 48, fixed to the sleeve 14, which carries the carrier 13, and provided with a pawl 47, pivotally mounted on the arm 49, which is fixed to the operating-shaft 15, so that operation of the said shaft will cause the pawl 47 to rotate the ratchet-wheel 48, and consequently the carrier 13, an arm 51 being preferably provided on the shaft 15 to operate between the fixed stops 52 and 53 to permit the pawl to travel only the distance of one tooth of the ratchet at each actuation of the operating-shaft.

For the purpose of returning the operating-shaft 15 to its normal position after being operated a spring 71 may be employed, one end of which is attached to the shaft and the other end is attached to a relatively fixed portion of the machine.

To the sleeve 14, which operates the carrier, is fixed a toothed disk or cam 72, with which coöperates a roller or projection 73, which is attached to a pivoted lever 74, the latter being normally held in operative engagement with the cam by the spring 75, which will operate to resist the rotation of the carrier, and it is provided at its free end with a link 76, which serves to connect the said lever with the lever 77 and the crank 78. The lever 77 is pivoted at 79 and provided at its opposite end with a plunger 80, which is arranged to coöperate with the locking device for the drawer, the said device embodying in the present instance a flexible arm 81, which is fixed at one end to the rear portion of the drawer, the free end being provided with a shoulder 82, which is adapted to detachably engage the adjacent portion 83 of the casing to prevent the removal of the drawer, the plunger 80 operating to depress the arm 81, and thereby unlock the shoulder 82 from the corresponding abutment formed by the casing, and for the purpose of preventing the premature relocking of the drawer I prefer to employ the spring 84, which serves to actuate the drawer forwardly immediately after being unlocked.

In preparing the machine for vending the cigars a box or package containing cigars, the bottom preferably of which has been previously removed, is fitted around the outside of the hopper so that the latter projects up-

wardly into the interior of the box, and this will cause some of the cigars to fall through the hopper into readiness to enter the pockets of the carrier while the rest of the cigars of the package will retain substantially their original position in the package, extending practically to the top thereof and in full view of the purchaser. Assuming that a coin of the proper denomination has been deposited to unlock the mechanism, the carrier-operating mechanism embodying the disk 48 will be in readiness for operation by the cooperating pawl 47, the latter being connected to the operating-shaft 15, and as the ratchet 48 is fixed to the sleeve 14, which carries the carrier 13, a corresponding rotary motion will be imparted to the carrier, causing the foremost cigar, which rests in a corresponding pocket of the carrier, to move toward the drawer 18, and while the cigar is being thus advanced it will engage the adjacent ends of the arms 22, causing the latter to be rocked about the shaft 15 as a center, and as the free ends of these arms are being depressed by the cigar resting in a pocket of the carrier the latter may roll without sliding on the ends of these arms, and as the cigar is pressed forwardly by rolling engagement of the roller 17 of the carrier and in passing off of these arms will have a rolling engagement with the roller 17^a the delivery of each cigar is effected with the least amount of friction, thus preventing it from being broken or otherwise injured. These arms are employed for facilitating the ejecting of the cigars from the carrier and also for controlling the machine, so that unless there is a cigar in the carrier ready for delivery the arms 22 will not be operated, and this will leave the machine unlocked until it has been refilled, when the first cigar delivered by the carrier will operate suitable devices to relock the machine. While the carrier is operating to deliver a cigar, the cam 72, which is mounted to rotate therewith, will operate upon the roller or projection 73 to oscillate the arm 74, and as the latter is connected through the link 76 to the lever 77 and the crank 78 the locking device 81 will be disengaged from the abutment 83 by the depression of the plunger 80, thereby unlocking the drawer 18 to permit withdrawal thereof, and thus render the articles delivered by the carrier 15 accessible to the purchaser. Simultaneously with the unlocking of the drawer the crank 78, which is also actuated by the cam 72, will oscillate the shaft 20, thereby causing the agitating-fingers 19, which are carried, thereby to be oscillated through the slots 21 in the hopper, the successive operation of these fingers operating upon the cigars in the hopper to cause them to properly arrange themselves in readiness to enter the longitudinal pockets of the carrier. The roller or projection 73 will return to the relative position shown in Fig. 5 when the delivery of the cigar has been completed by the carrier, and as the drawer 18 is returned within the casing the flexible arm 81 will automatically spring into position to lock the drawer, the plunger 80 at this time being elevated.

A cigar-vending machine constructed in accordance with my invention is well adapted to the various requirements which are placed upon machines of this kind both by the revenue laws and also those rendering it necessary that the cigars should be handled without breakage or other injury and vended and exhibited in such a way that the cigars may be readily inspected by the purchaser, for by placing the box over the exterior of the hopper and so as to fit snugly around it the box will be positioned relatively to the hopper so that the entire exterior surface of the box containing the usual stamps, labels, and other well-known inscriptions and markings to be all observed and inspected by the purchaser, and by employing the rollers for producing a rolling engagement with the cigars as they are being lifted out of their pockets of the carrier and passed over the ejecting-arms, which they also operate, security from breakage will be obtained, and this is a prerequisite to a device of this kind.

I claim as my invention—

1. In a cigar-vending machine, the combination with a suitable casing and a box-support arranged in the casing and having a central aperture therein, of a hopper fitted into the aperture of the box-support and having vertical side walls extending upwardly beyond the box-support and adapted to rest within and coöperate with the inner sides of a box resting on said support.

2. In a cigar-vending machine, the combination with a suitable casing, and an upwardly-extending flange having its upper edge lying in a horizontal plane to form a box-support, of a hopper fitted within the flange and having vertical sides projecting above the top edges of the flange and arranged to rest within and coöperate with the inner sides of a box resting on said flange.

3. In a cigar-vending machine, the combination with a suitable casing, and a rectangular vertically-extending flange arranged in the casing having a horizontal upper edge adapted to form a cigar-box support, of a hopper having portions inclosed and centered by the flange, and vertically-extending portions projecting above the upper edge of the flange and arranged to coöperate with the inner sides of a cigar-box to center it in relation to said flange.

4. In a device for vending cigars, the combination with a suitable casing, and a hopper mounted therein, of a rotary delivery device mounted in coöperative relation with the

hopper and having pockets for receiving the cigars from the hopper, cigar-engaging rollers journaled on the delivery device between the pockets thereof and a relatively fixed roller adjacent to the drum and arranged to receive each cigar between it and the drum during the discharge of the cigars from the delivery device.

5. In a device for vending cigars, the combination with a suitable casing, and a hopper or cigar-container mounted therein, of a rotatable drum having a series of axially-arranged cigar-receiving pockets therein, rollers on the drum between the pockets thereof and a roller journaled at the discharge-opening of the hopper in proximity to the drum and arranged to produce rolling engagement with the cigars as the latter are pushed past it by the rollers on the drum while the cigars are resting in their respective pockets of the drum.

6. In a device for vending cigars, the combination with a suitable casing, a hopper arranged therein and having discharge-apertures therein, and a roller journaled at one side of the discharge-aperture of the hopper, of a rotatable drum provided with axially-arranged cigar-receiving pockets for carrying the cigars past said roller, and rollers mounted on the drum and arranged to engage the cigars in their respective pockets for pushing them with rolling engagement past the first-mentioned roller.

7. In a device for vending cigars, the combination with a hopper having a discharge-aperture formed therein, of a rotatable carrier mounted in coöperative relation with the hopper and having pockets therein to receive the cigars therefrom, an arm mounted transversely of the carrier and adapted to be actuated by engagement with an article in the carrier, and a relatively fixed roller mounted opposite to the said arm to coöperate with the cigar while it is in engagement with the said arm.

8. In a device for vending cigars, the combination with a hopper having a discharge-aperture formed therein, of a delivery-carrier mounted in coöperative relation therewith and provided with axially-arranged pockets to receive the cigars, and agitating-fingers mounted to operate in a direction transversely of the pockets of the carrier and having portions extending into the pockets thereof for arranging the cigars to properly enter the pockets.

9. In a vending-machine, the combination with a casing, a receptacle for the articles to be vended, and a delivery device coöperatively arranged therewith, of a drawer movably mounted in the casing, a locking device for normally retaining the drawer within the casing, and means controlled by the operation of the delivery device for unlocking the drawer.

10. In a vending-machine, the combination with a receptacle for the articles to be vended, and a delivery device coöperatively arranged therewith, of a drawer movably mounted in the casing, a flexible arm coöperatively arranged between the drawer and a relatively fixed portion of the casing for locking the drawer within the casing, a cam controlled by the operation of the delivery device, and an arm operated thereby and coöperating with the said arm for unlocking the drawer.

11. In a cigar-vending machine, the combination with a suitable hopper or cigar-container, of a rotatable drum having a series of axially-extending pockets having their walls curved at the bottoms of the pockets to conform substantially to the transverse curvature of the cigars, and normally holding the cigars centered in the drum, and rollers journaled in the drum at points between the pockets thereof and normally above the cigars resting therein, and serving to produce rolling engagement with the cigars in discharging the latter from their pockets of the drum.

12. In a device for vending cigars, the combination with a hopper having a discharge-aperture formed therein, of a rotatable drum mounted in coöperative relation with the hopper and having axially-extending pockets therein to receive the cigars therefrom, a pivoted arm extending transversely of the drum having a portion arranged to be engaged by the cigars while in the pockets of the drum, a relatively fixed roller journaled opposite to the pivoted arm and adjacent to the periphery of the drum, and arranged to engage the cigars while in engagement with the said arm, and a roller journaled in the walls of each of the pockets of the carrier and mounted to engage behind the cigars to eject them between the coöperating portion of the said arm and the relatively fixed roller, and operating means for the drum.

13. In a device for vending cigars, the combination with a hopper having a discharge-aperture formed therein, of a rotatable drum mounted in coöperative relation with the hopper and having a series of axially-extending pockets formed therein for the reception of the cigars from the hopper, an oscillatory arm pivoted transversely of the axis of the hopper and having a portion adapted to cooperate with the cigars while leaving the pockets of the drum, means for imparting a longitudinal motion to the said arm while the latter is being moved about its pivot by the cigar in the drum, and operating means for the drum.

14. In a device for vending cigars, the combination with a hopper having a discharge-aperture therein, of a rotatable drum mounted in coöperative relation with the hopper and having a series of axially-extending pockets therein for the reception of the cigars

from the hopper, an oscillatory arm mounted to operate in a plane transversely of the axis of the drum and having portions projecting into the pockets of the drum, means for moving the said arm outwardly of the drum while the said arm is being swung about its pivot, rollers journaled in the walls of the pockets for engaging the cigars and moving them against the coöperating portion of the said arm to operate the latter, and operating means for the drum.

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