April 8, 1930. S. A. NYSTEDT 1,754,037

VENDING MACHINE

Filed March 27, 1928 7 Sheets-Sheet 1

Fig. 1.

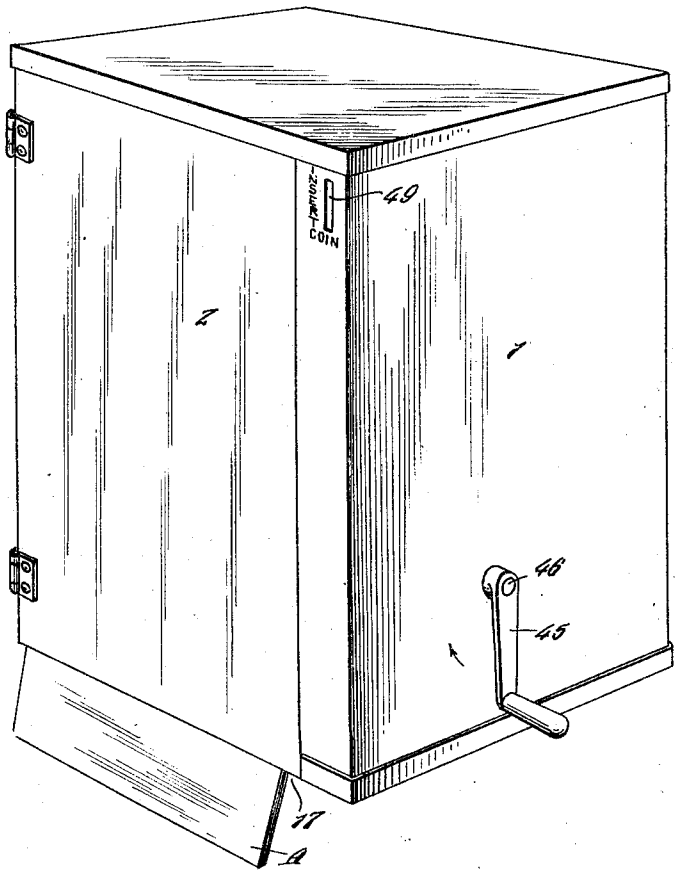


Fig. 8.

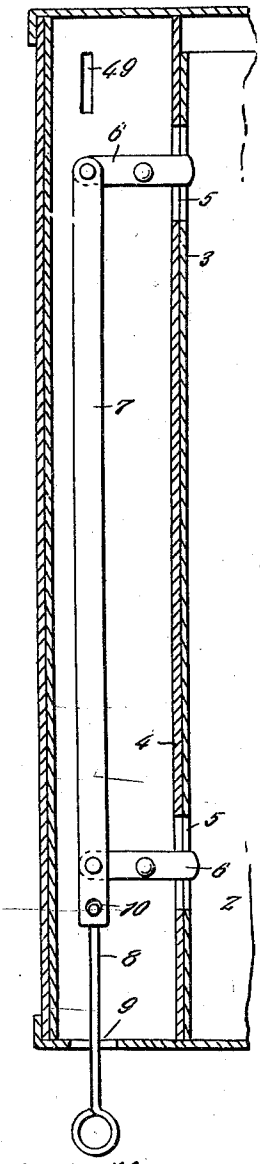
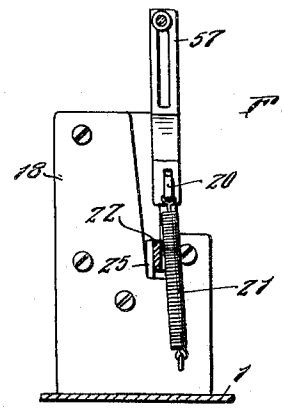


Fig. 9.



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BY Victor J. Evans

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VENDING MACHINE

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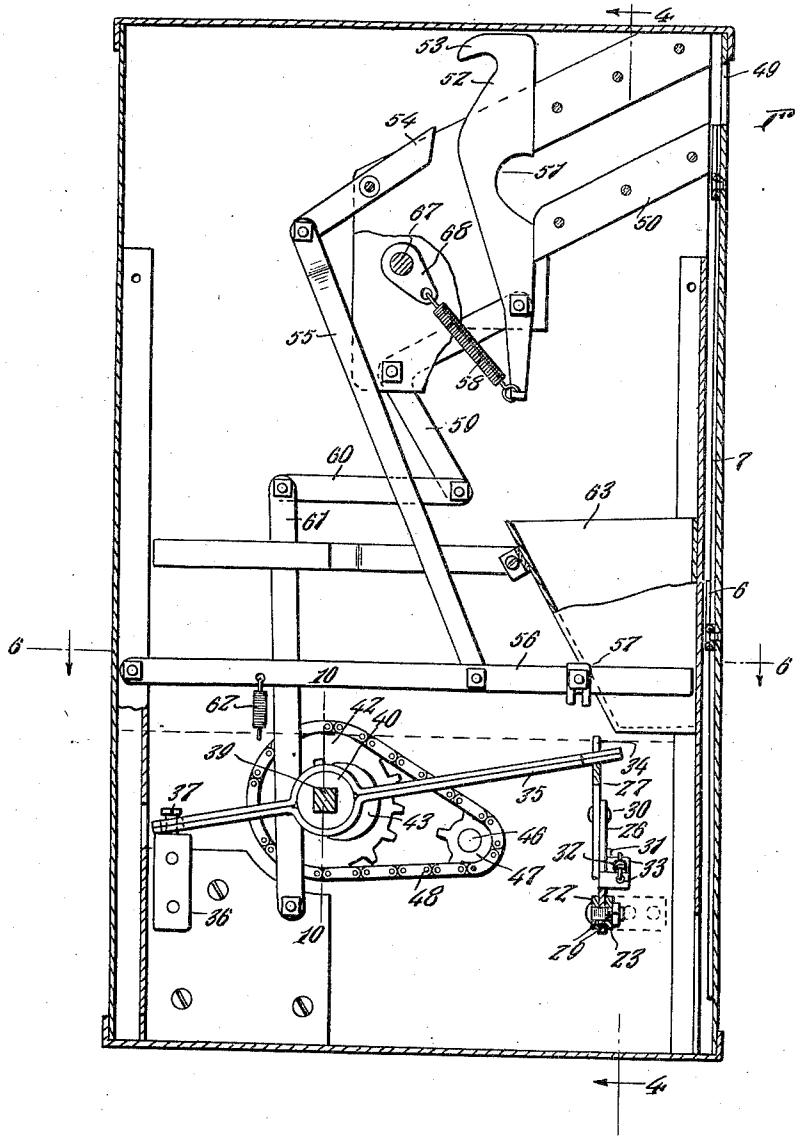


Fig. 2.

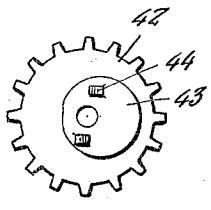


Fig. 11.

S. A. Nystedt
INVENTOR

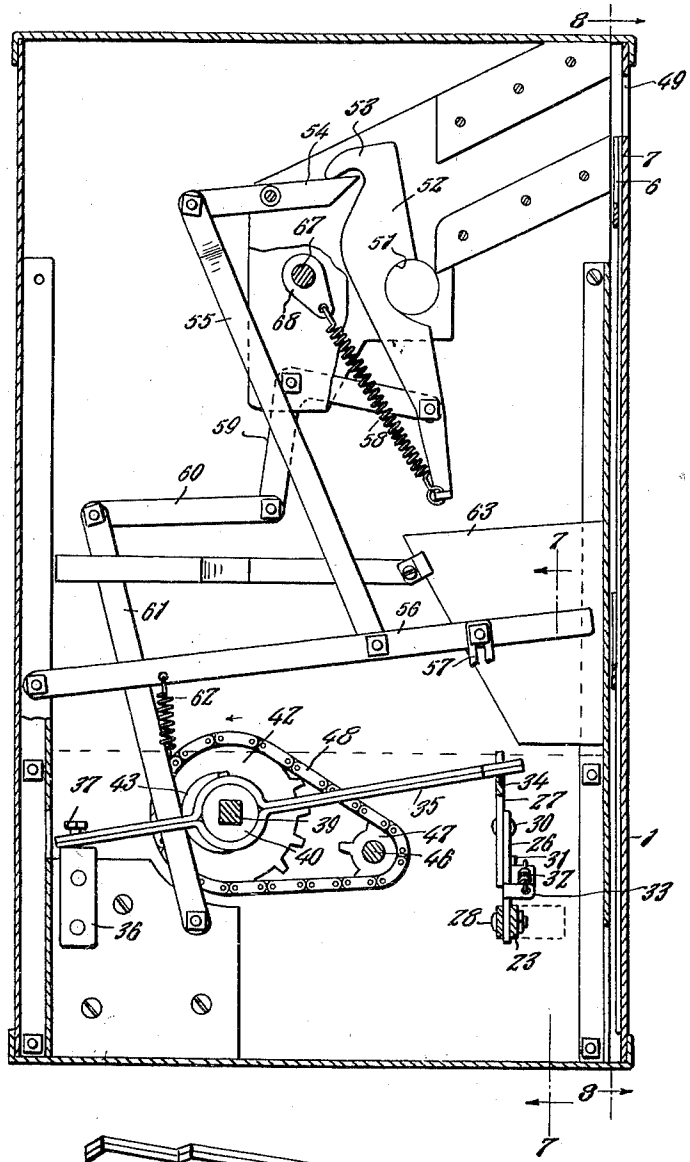
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April 8, 1930. S. A. NYSTEDT 1,754,037

VENDING MACHINE

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Fig. 5.



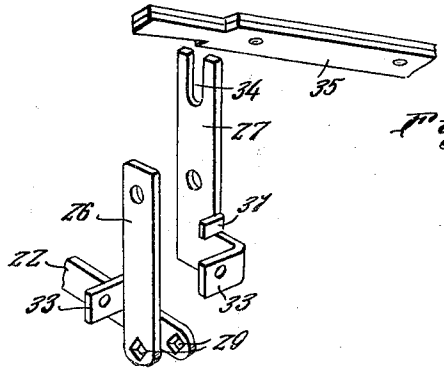


Fig. 14.

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VENDING MACHINE

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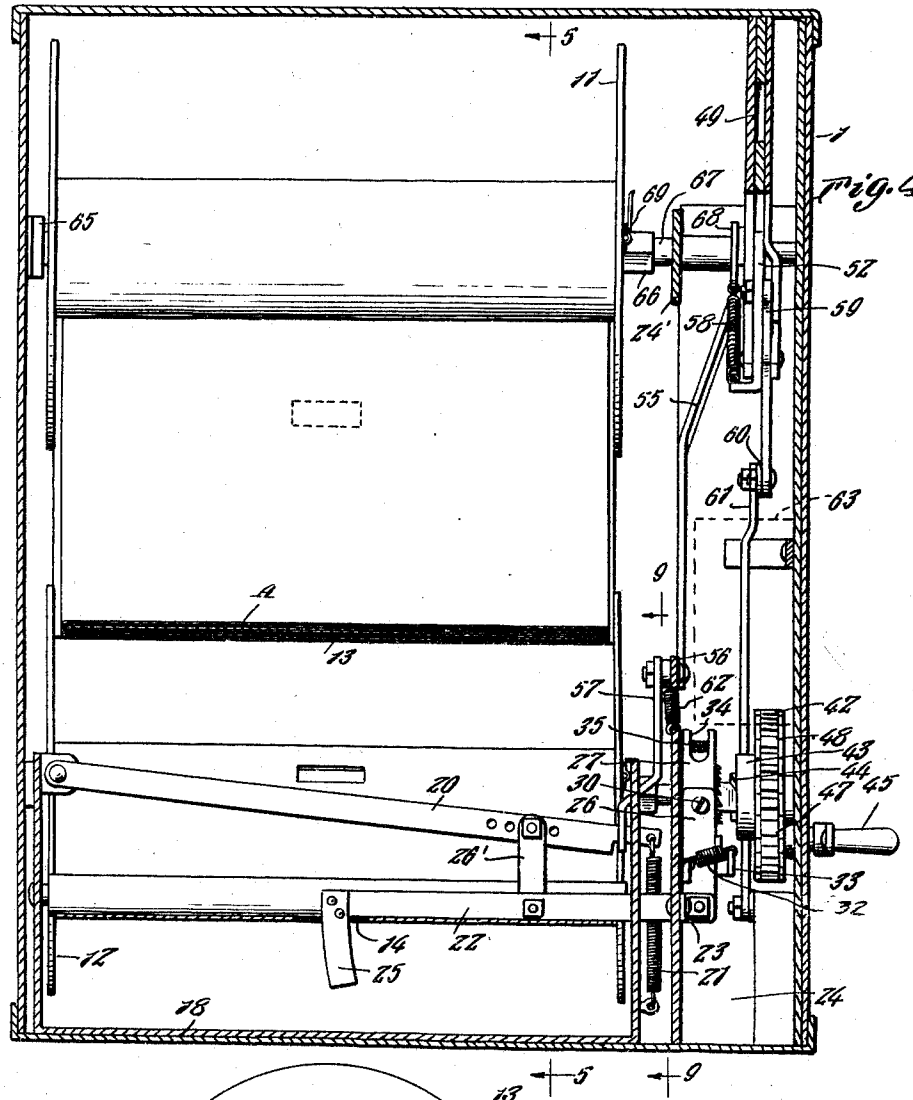


Fig. 4.

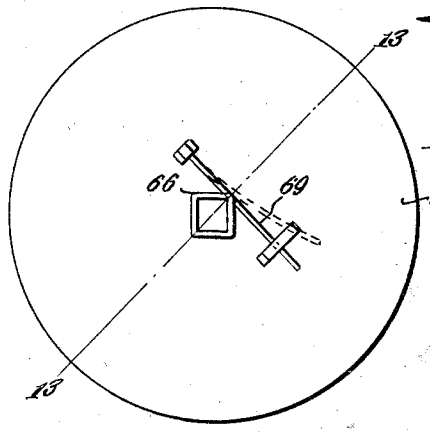


Fig. 12.

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VENDING MACHINE

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Fig. 5.

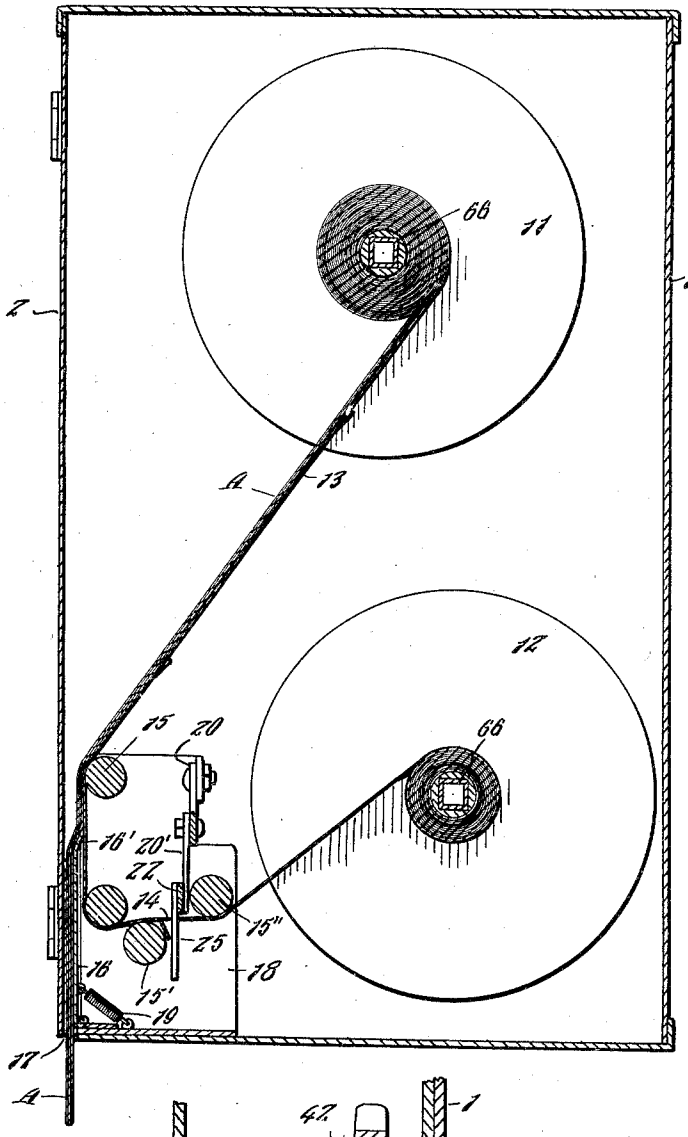
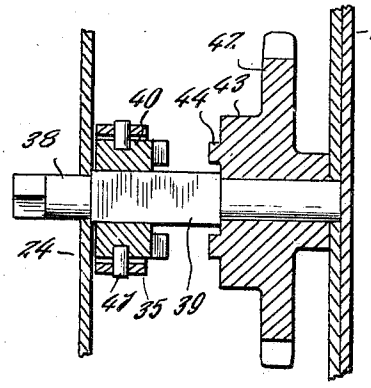


Fig. 10.



S. A. Nystedt
INVENTOR

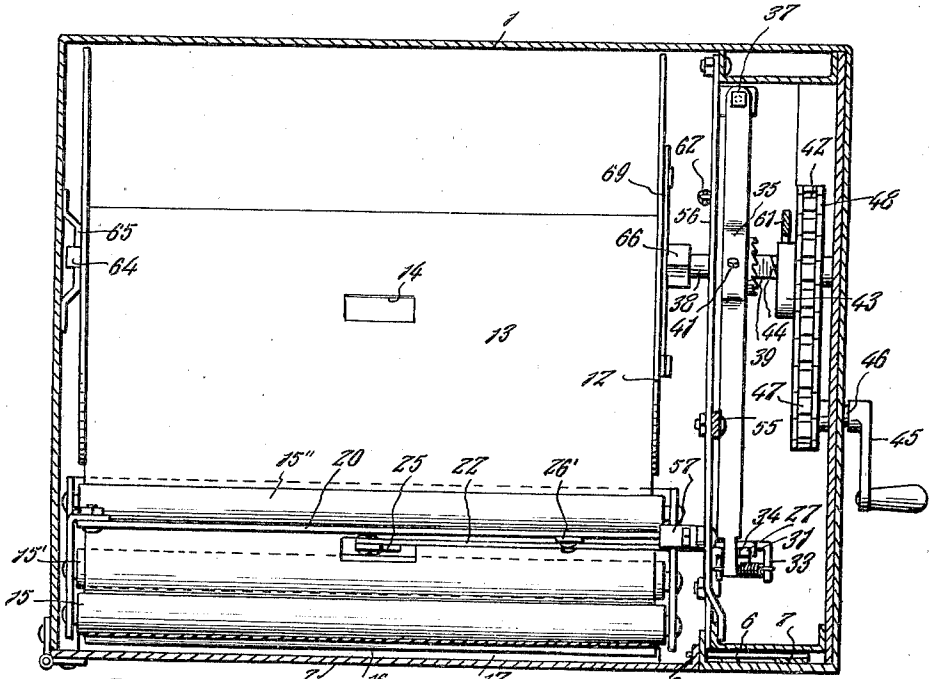
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April 8, 1930. S. A. NYSTEDT 1,754,037

VENDING MACHINE

Filed March 27, 1928 7 Sheets-Sheet 6

Fig. 6.



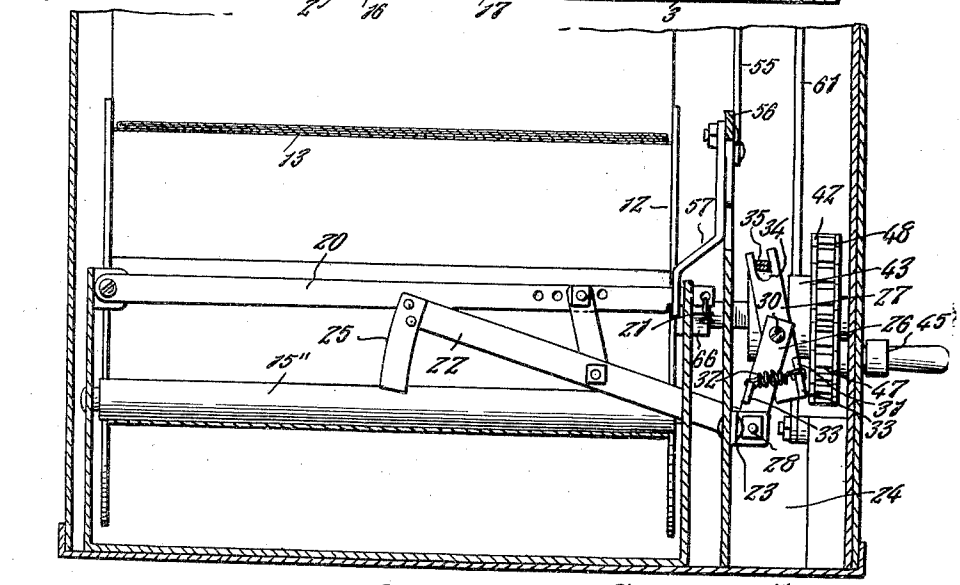


Fig. 7.

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VENDING MACHINE

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Fig. 15.

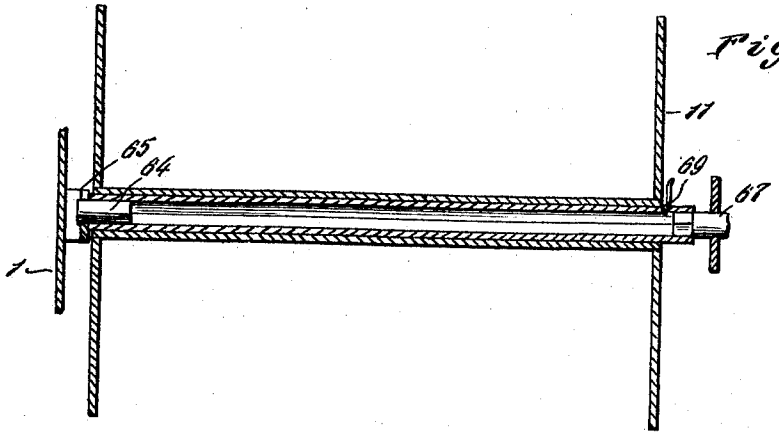


Fig. 15.

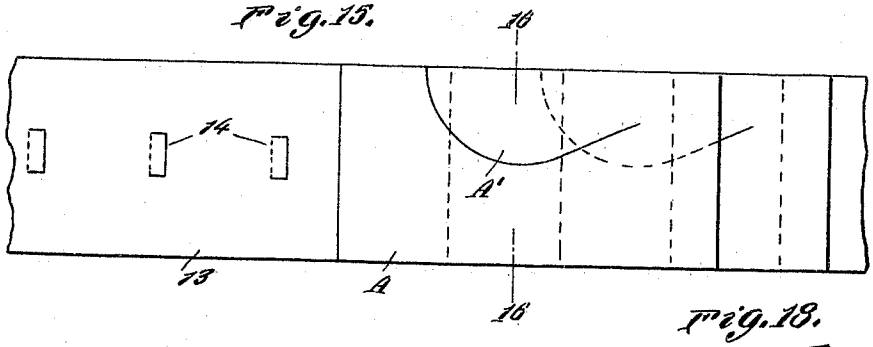
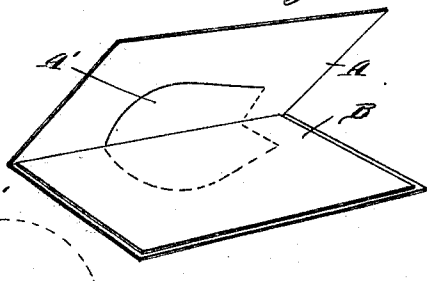


Fig. 18.



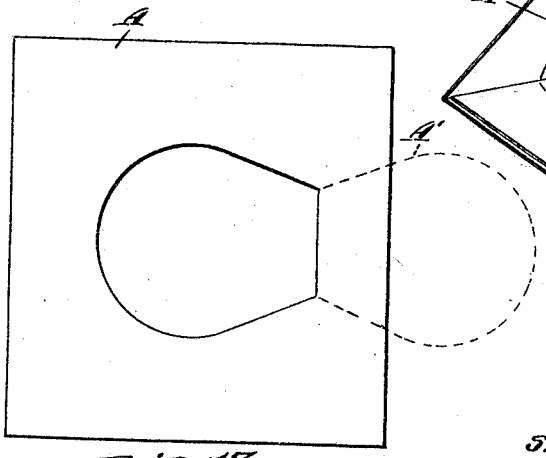


Fig. 17.



Fig. 16.

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Patented Apr. 8, 1930 1,754,037

UNITED STATES PATENT OFFICE

SIGFRED A. NYSTEDT, OF STORM LAKE, IOWA

VENDING MACHINE

Application filed March 27, 1928. Serial No. 265,082.

This invention relates to a vending machine for vending sanitary covers for toilet seats, with toilet paper enclosed in the covers, the general object of the invention being to provide a casing having means for supporting a pair of rolls therein which carry a supporting strip for the covers, with coin controlled means for causing a cover to drop from the casing when a coin is deposited in the casing and a handle turned to revolve one of the rolls to transmit movement to the strip, with means for causing one of the covers to leave the strip and drop through a hole in the casing when the strip is so moved.

A further object of the invention is to provide means whereby the handle can be turned without revolving the roll unless a coin is dropped into the casing, with means actuated by a coin for causing the roll to be revolved from the handle and for releasing a locking device for the strip.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a perspective view of the casing, with a cover partly ejected therefrom.

Figure 2 is a vertical sectional view through said casing.

Figure 3 is a similar view but showing the parts in the position they occupy when a coin has been dropped into the casing.

Figure 4 is a section on line 4—4 of Figure 2.

Figure 5 is a section on line 5—5 of Figure 4.

Figure 6 is a section on line 6—6 of Figure 2.

Figure 7 is a section on line 7—7 of Figure 3.

Figure 8 is a section on line 8—8 of Figure 3, and showing the locking means for the door.

Figure 9 is a section on line 9—9 of Figure 4.

Figure 10 is a section on line 10—10 of Figure 2.

Figure 11 is a face view of the gear and its cam and showing the clutch teeth on the cam.

Figure 12 is an end view of one of the rolls, showing the latch means for the square axle thereof.

Figure 13 is a section on line 13—13 of Figure 12.

Figure 14 is a view showing the sectional arm for locking the clutch shifting lever with the sections separated, this view also showing a portion of the lever.

Figure 15 is a view showing portion of the carrying strip and some of the folded covers thereon.

Figure 16 is a section on line 16—16 of Figure 15.

Figure 17 is a view of one of the covers.

Figure 18 is a view of the cover partly folded, with a sheet of paper resting on one-half of the cover.

In these drawings, the numeral 1 indicates a casing which is provided with a door 2, the door being of less width than the front of the casing and the free edge of the door has a flange 3 which extends inwardly to contact with a wall 4 of the door opening, said wall and flange having aligning slots 5 therein for receiving the latches 6 which are connected together by a bar 7 so that the door is normally held in locked position by the latches. When the door is to be opened, a key 8 is inserted through a hole 9 in the bottom of the casing and its bent upper end placed in a hole 10 in the lower end of the bar 7 so that by pulling downwardly upon the key, the bar 7 will be moved longitudinally to cause the latches to swing about their pivots and thus the door will be free to be opened. Of course, any other suitable locking means may be provided for locking the door.

An upper roll 11 and a lower roll 12 are rotatably arranged in the casing and the ends of a strip 13 of heavy paper or the like are fastened to these rolls. This strip is provided with a centrally arranged longitudinally extending row of slots 14 which

are spaced apart, each slot being preferably formed by making a channel-shaped slit in the strip so that the portion between the parts of the slit will form a flap which will readily be pushed downwardly by the locking member hereinafter described. This strip forms a carrying member for the covers A, the covers being folded in half with a sheet B of toilet paper between each cover and they are placed on the strip in overlapping relationship, as shown in Figure 15. The strip, with the covers thereon, is wrapped in a roll on the top roll 11 and said strip passes downwardly over the front guiding rollers 15 which are arranged one above the other and then the strip passes rearwardly over the guiding roller 15′ and under the guiding roller 15″ to the bottom roll 12. A deflecting plate 16 is placed between the closed door and the front guiding rollers and has its upper edge bent inwardly, as at 16′ so as to engage that part of the strip between the upper and lower rollers 15 to cause the covers to leave the strip and pass between the body of the plate and the door and pass out through an opening 17 formed between the bottom of the casing and the lower edge of the door. The plate 16 is hinged to the lower front part of a yoke-shaped frame 18, the bottom part of which is fastened to the bottom of the casing and the upwardly extending limbs of which have the pintles of the guiding rollers journaled therein. A spring 19 tends to hold the plate 16 in upright position. By hinging this plate to the member 18, it may be lowered to facilitate the passing of the strip over the guiding rollers and the spring acts to yieldingly hold the part 16′ against the strip 13. Thus as the lower roll 12 is turned by means hereinafter to be described, the strip 13 is pulled from the upper roll 11 and as it passes between the front guiding rollers 15, the plate 16 deflects the folded covers from the strip through the opening 17, it being understood that the covers are held on that portion of the strip between the upper roll 11 and the upper guiding roller 15, due to their overlapping each other and to the fact that the upper cover is pressed between two portions of the strip on the roll 11.

A lever 20 has one end pivoted to one of the upright limbs of the member 18 and its other end passes through a cut-away portion of the other limb, a spring 21 having one end connected with the free end of the lever and its other end is connected with a part of the member 18 so that said spring normally holds the lever in lowered position. A locking lever 22 is pivoted to a bracket 23 fastened to a frame 24 in one side of the casing.

The free end of the lever 22 carries a projection 25 which is adapted to pass through one of the slots 14 in the strip 13 to prevent movement of said strip 13 when the locking lever is in lowered position. This lever 22 is connected by a link 26′ with the lever 20 so that the spring 21 tends to hold both levers in a position with the projection 25 passing through a slot in the strip 13, the projection engaging that slot of the strip which is located between the guiding rollers 15′ and 15″. The link 26′ is adjustably connected with the lever 20, as shown.

An arm composed of the sections 26 and 27 is caused to move with the lever 22 as the lower end of the section 25 is connected with the pivoted end of the lever 22 by the pivot bolt 28 which connects the lever 22 with the bracket 23, said bolt having a square portion which passes through the square holes 29 formed in the adjacent ends of the lever in the section 26. Thus when the lever 22 is raised to unlocking position, the section 26 is swung outwardly away from the inner wall of the frame 24, as shown in Figure 7. The section 22 is pivoted intermediate its ends to the section 26, as shown at 30, and said section 22 is caused to move outwardly with the section 26 by means of the finger 31 on the lower part of the section 27 engaging an edge of the section 26. The two sections are held in axial alignment by a spring 32 which has its ends connected with the ears 33 on the two sections, but this spring permits the upper section 27 to swing inwardly when the section 26 is moved outwardly. The upper end of the section 27 is notched, as at 34, to receive the reduced end of a clutch shifting lever 35 which is pivotally and movably connected with a bracket 36, as shown at 37 in Figure 3, the bracket being fastened to the rear part of the frame 24. Thus it will be seen that the upward movement of the locking lever 22 to unlocking position will cause the sectional arms 26 and 27 to move the clutch lever outwardly or toward the near side of the casing.

The operating shaft 38 for the lower roll 12 is journaled in the frame 24 and has a square part 39 on which is slidably mounted a clutch part 40, the groove in which is engaged by the pins 41 carried by the clutch collar 35′ formed on the lever 35 so that this clutch part 40 will be moved by the lever. A sprocket 42 is rotatably mounted on a round part of the shaft 38 and this sprocket carries a cam 43 which is provided with the clutch teeth 44 which are engaged by the teeth on the clutch part 40 when the said part is moved outwardly toward the side of the casing so that the rotary movement of the sprocket will be communicated to the shaft through said clutch part 40 engaging the square part of said shaft.

A crank handle 45 has its shaft 46 journaled in one side of the casing and in a part of the frame 24 and the inner end of said shaft carries a small sprocket 47 around which and the sprocket 42 passes a sprocket chain 48 so that when the handle is turned, the

sprocket 42 will be rotated and if the clutch part 40 is in engagement with the teeth 44, the shaft 38 will also be rotated so that the lower roll 12 will be revolved and thus the strip with the covers thereon will be pulled from the upper roll 11.

A coin slot 49 is formed in the front of the casing and a chute 50 is fastened to a side of the casing for receiving a coin inserted through the slot. A recess 51, formed in a lever 52 located at the end of the slot, receives the coin and this lever will be moved outwardly when it is pulled downwardly through means of a part of the coin engaging the rear end of the lower part of the chute so that a notch 53 in the upper end of the lever will engage the beveled end of a small lever 54 to cause said lever 54 to rock on its pivot as the coin lever 52 moves downwardly. The rear end of the lever 54 is connected by a link 55 with a horizontal lever 56 pivoted at its rear end to a part of the frame 24 and having its front part connected by a link 57 to the lever 20. Thus as the lever 52 moves downwardly, it will raise the lever 20 and the locking lever 22 through means of the lever 54, the link 55, lever 56 and the link 57. As shown, the link 57 has a slotted connection with the lever 56. A spring 58 is connected with the lower end of the coin lever 52 and with a stationary part and tends to hold the lever 52 against the end of the coin slot and said lever 52 is moved downwardly when the crank handle is turned through means of the bellcrank 59 having one end connected with the lever 52 and its other end connected by a link 60 with a lever 61 which is engaged by the cam 43 so that as the sprocket 42 is turned, the cam will strike the lever 61 and move it rearwardly so as to exert a pull upon the bell crank and thus lower the lever 52. A spring 62 acts to hold the lever 56 in lowered position. When the coin lever 52 is pulled downwardly, the coin, after it passes the end of the chute, will drop into a coin receptacle 63.

The pintles 64 at one end of each of the rolls 11 and 12 are supported in brackets 65 attached to one side of the casing and the pintle 66 at the other end of each of the rolls 11 and 12 is made square, the pintle of the lower roll receiving the square end of the shaft 38 and that of the upper roll receiving the square end of the shaft 67 which is journaled in the upper part of the frame 24. The support 68 for the upper end of the spring 58 may be suspended from this shaft 67. In order to facilitate the placing of the rolls in the device, I make the pintles 66 slidable in the rolls so that they can be pushed inwardly to clear the ends of the shafts 38 and 67 and then the pintles are moved outwardly into engagement with said shaft. Latch means 69 are provided for holding the pintles in operative position.

The covers A are preferably formed of rectangular blanks, as shown in Figure 17, with a central opening cut therein which conforms to the opening in the seat, the cut in the sheet being so made as to form a flap A′ which may depend into the bowl and prevent contact of parts of the person with the front part of the bowl and its seat. By placing the majority of the parts on the frame 24 and other parts on the frame 18, the actuating parts can be readily removed from the casing by removing these frames.

From the foregoing it will be seen that the lower roll 12 cannot be revolved to impart movement to the strip 13 unless a coin is deposited in the device, for if the crank is turned without depositing the coin, the sprocket 42 simply rotates on the shaft 38 without revolving said shaft and said strip 13 is held against movement by the projection 25 on the locking lever 22 engaging a slot in the strip. Thus it is impossible to secure a cover from the device unless a coin is deposited therein. When the coin is so deposited, it will come to rest in the recess 51 of the lever 52 and then, when the handle is turned, the rotary movement of the sprocket 42, through means of the chain 48, will cause the cam 43 to engage the lever 61 and move said lever rearwardly. Thus movement will be imparted to the coin lever through the link 60 and bell crank 59 and as said coin lever moves downwardly, it will also move rearwardly under the action of the coin engaging the rear end of the chute. Thus the notched upper end of the lever will engage the lever 54 so that the lever 54 will move on its pivot, exerting a pull upon the link 55 and raising the lever 56. As said lever 56 moves upwardly, its link 57 will pull upwardly the lever 20 and thus said lever 20 will raise the locking lever and the projection 25 on said locking lever will move out of the slot on the strip. As said lever 22 moves upwardly, the sectional arm will move outwardly and thus shift the clutch lever 35 to engage the clutch parts so that the shaft 38 will rotate with the sprocket and thus impart movement to the lower roll 12. Thus a portion of the strip 13 will be wound upon the roll 12 and during this movement of the strip, one of the covers will be deflected therefrom by the plate 16 and said cover will pass through the opening 17 so that the cover will be ejected from the device. As soon as the coin passes the end of the chute, it will drop into the receptacle 63 and the spring 58 will move the lever 52 out of engagement with the lever 54 and after the sprocket has made a partial revolution, the cam will permit the lever 61 to swing forwardly and permit the spring 58 to return the coin lever and the parts attached thereto to their normal position. As soon as the lever 54 is released, by the coin lever, the spring 62 will move the lever 56, the link 55

and the lever 54 downwardly and as soon as a slot 14 passes under the projection 25 of the locking lever, the spring 21 will return the parts to locking position with a projection 25 engaging the slot. By making the connection between the lever 56 and the link 57 a slotted one, the spring 21 can return the parts to locking position as soon as an opening in the strip reaches the projection 25 without interference on the part of the lever 56. The sectional arm for shifting the clutch lever permits the lever 35 to come to rest after the clutch parts are in engagement with each other without interfering with the movement of the locking lever 22.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

It is to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. A vending device comprising a casing, a pair of rolls therein, for supporting a strip which carries the objects to be vended, said casing having an opening therein, a deflector for deflecting the articles from the strip through said opening, manually operated means for revolving one of the rolls to impart movement to the strip, normally disengaged from the roll, locking means for preventing movement of the strip and means for engaging the manually operated means with the roll by the movement of the locking means to releasing position.

2. A vending device comprising a casing, a pair of rolls therein, for supporting a strip which carries the objects to be vended, said casing having an opening therein, a deflector for deflecting the articles from the strip through said opening, manually operated means for revolving one of the rolls to impart movement to the strip, normally disengaged from the roll, locking means for preventing movement of the strip, means for engaging the manually operated means with the roll by the movement of the locking means to releasing position, and means operated by a part of the manually operated means for moving the locking means to releasing position.

3. A vending machine comprising a casing, a pair of rolls rotatably mounted therein, and supporting an article carrying strip, guiding rollers for the strip, the casing having an opening therein, a spring pressed deflector for deflecting the articles from the strip through the opening and manually operated means for rotating one of the rolls.

4. A vending machine comprising a casing, a pair of rolls rotatably mounted therein, and supporting an article carrying strip, guiding rollers for the strip, said casing having an opening therein and a spring pressed deflector plate engaging a portion of the strip between two of the guiding rollers deflecting the articles from the strip through the opening and manually operated means for rotating one of the rolls.

5. A vending machine comprising a casing, a pair of rolls rotatably mounted therein one above the other and supporting an article carrying strip, guiding rollers for the strip, the casing having an opening therein, a deflector for deflecting the articles from the strip through the opening, said strip having spaced openings therein, a locking lever in the casing having a part adapted to pass through an opening in the strip when the lever is in locking position, a shaft rotatably arranged in the casing and engaging one end of the lower roll, a member loosely mounted on the shaft, manually operated means for rotating said member, clutch means for connecting the member with the shaft, means for moving the clutch means into operative position by the releasing movement of the locking lever, means for moving the locking lever to releasing position including a lever and means for imparting movement to the said lever from the manually operated means.

6. A vending machine comprising a casing, upper and lower rolls journaled therein and supporting an article carrying strip, said casing having an opening therein, means for deflecting the articles from the strip through the opening, means for locking the strip against movement, a shaft journaled in the casing and connected with one of the rolls, a member rotatably mounted on the shaft, a second shaft journaled in the casing and extending through one side thereof, a handle on the outer end of the shaft, means for connecting the inner end of the shaft with the member on the first mentioned shaft to rotate said member, clutch means for connecting the shaft with said member, means operated by the movement of the locking means to unlocking position to move the clutch means to operative position and means operated by a part of the member on the first mentioned shaft for moving the locking means to inoperative position.

7. A vending machine comprising a casing having an opening therein, upper and lower rolls journaled in said casing and supporting an article carrying strip, guiding rollers for the strip, means for deflecting the articles from the strip through the opening, said strip having openings therein, a locking lever having a part for engaging the openings to hold the strip against movement, a shaft journaled in the casing and connected with one of the rolls, a sprocket rotatably mounted on the shaft, a clutch member slidably and non-rotatably mounted on the shaft, a clutch part on the sprocket, a clutch lever connected with a slidable clutch part, means for moving the

lever by the movement of the locking lever, a lever connected with the locking lever for moving the same to inoperative position, a notched lever for engaging the lever which is connected with the locking lever for moving the same, a cam on the sprocket, means operated thereby for moving the notched lever and means for moving the notched lever to engaging position.

8. A vending machine comprising a casing having an opening therein, rolls journaled in the casing and supporting an article carrying strip, means for deflecting articles from the strip through the opening, a shaft journaled in the casing and connected with one of the rolls, a sprocket rotatably mounted on the shaft, manually operated means for rotating the sprocket, clutch means for connecting the sprocket with the shaft, a clutch lever for shifting such means, a locking lever for holding the strip against movement, a sectional arm having one section connected with the locking lever and its other section connected with the clutch lever, spring means for holding the sections together and means for moving the locking lever to releasing position.

In testimony whereof I affix my signature.

SIGFRED A. NYSTEDT.