Nov. 6, 1956 R. K. HENSLEY, JR 2,769,516

CLEANING DEPOSITORY

Filed Jan. 16, 1953 3 Sheets-Sheet 1

Fig. 1

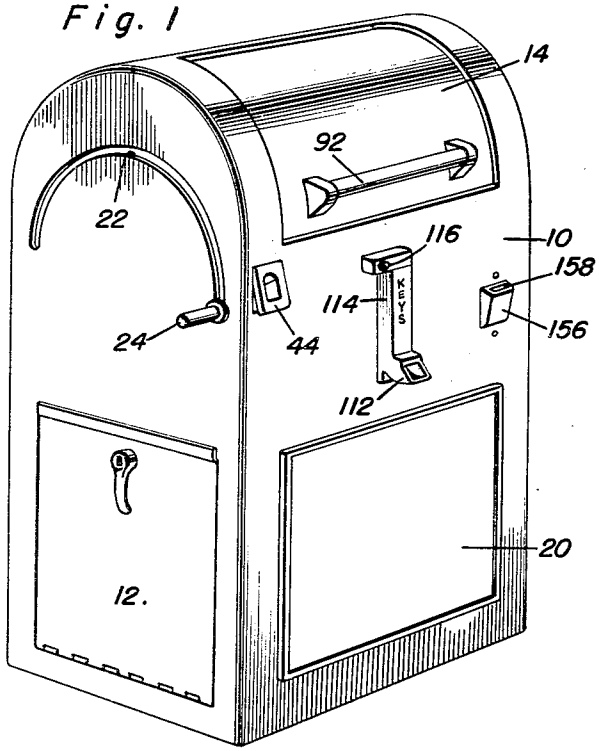


Fig. 7

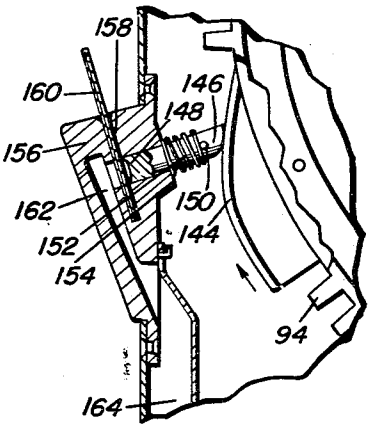


Fig. 8

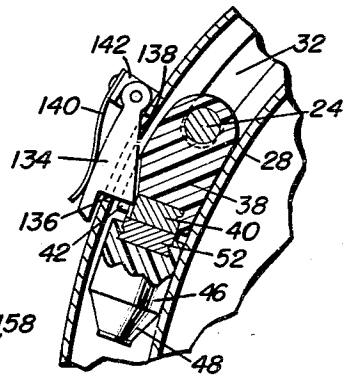


Fig. 6

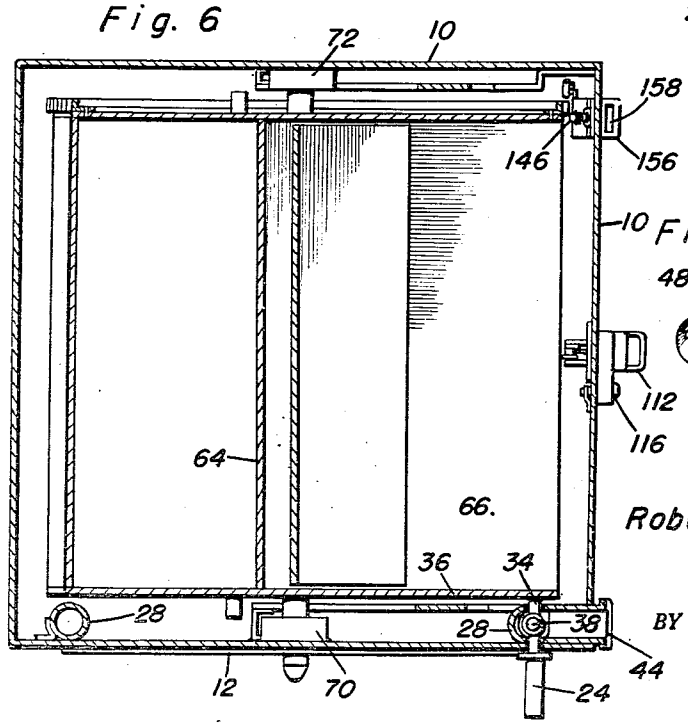


Fig. 13

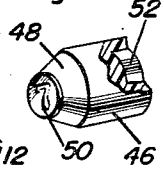
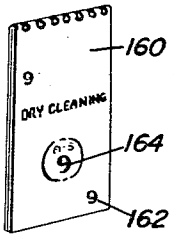


Fig. 14



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CLEANING DEPOSITORY

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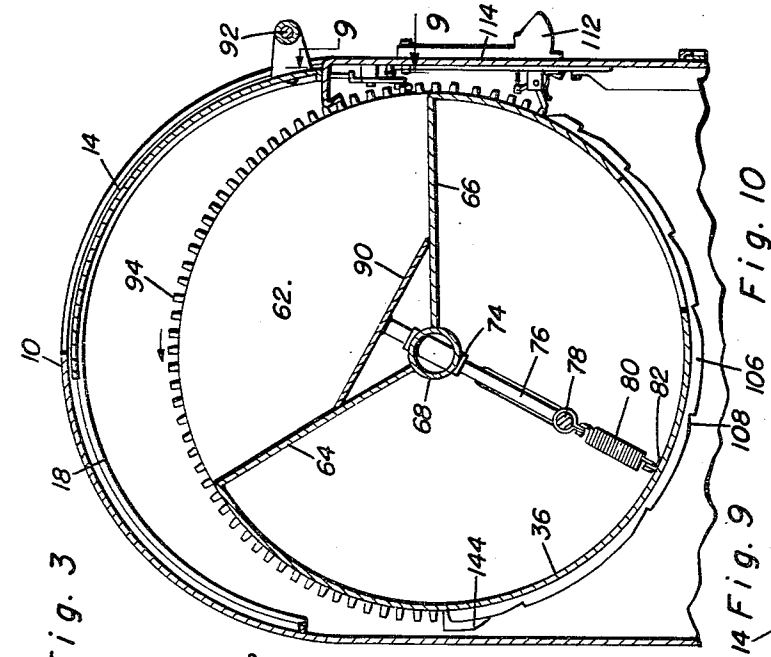


Fig. 3

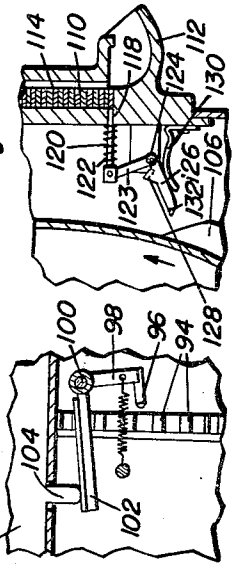


Fig. 10

Fig. 9

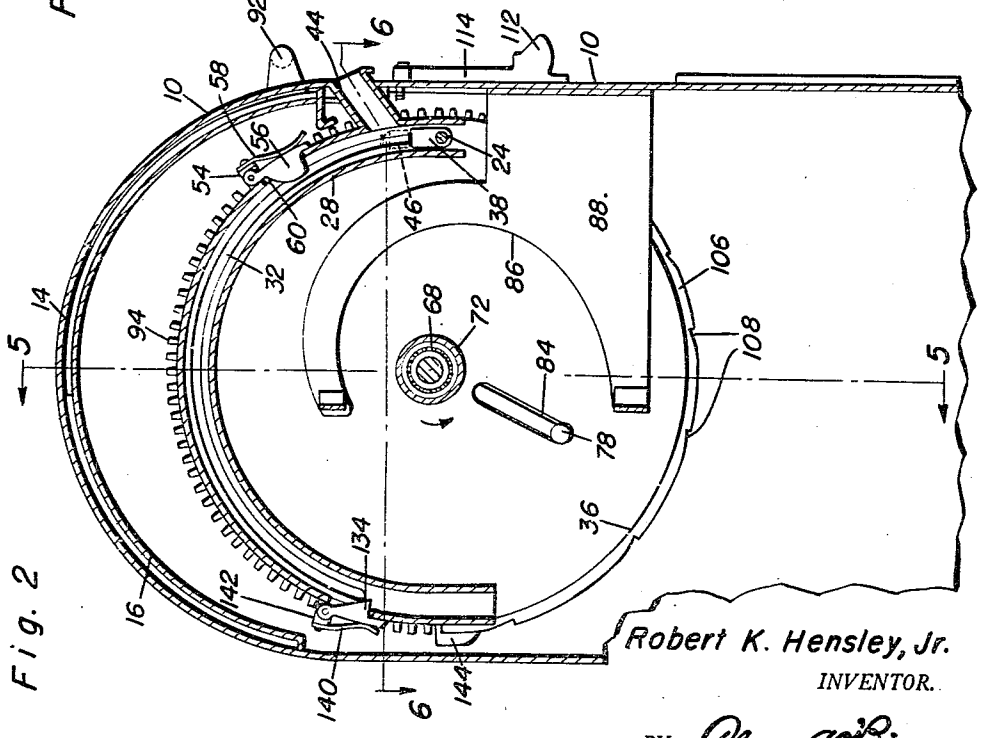


Fig. 2

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CLEANING DEPOSITORY

Filed Jan. 16, 1953 3 Sheets-Sheet 3

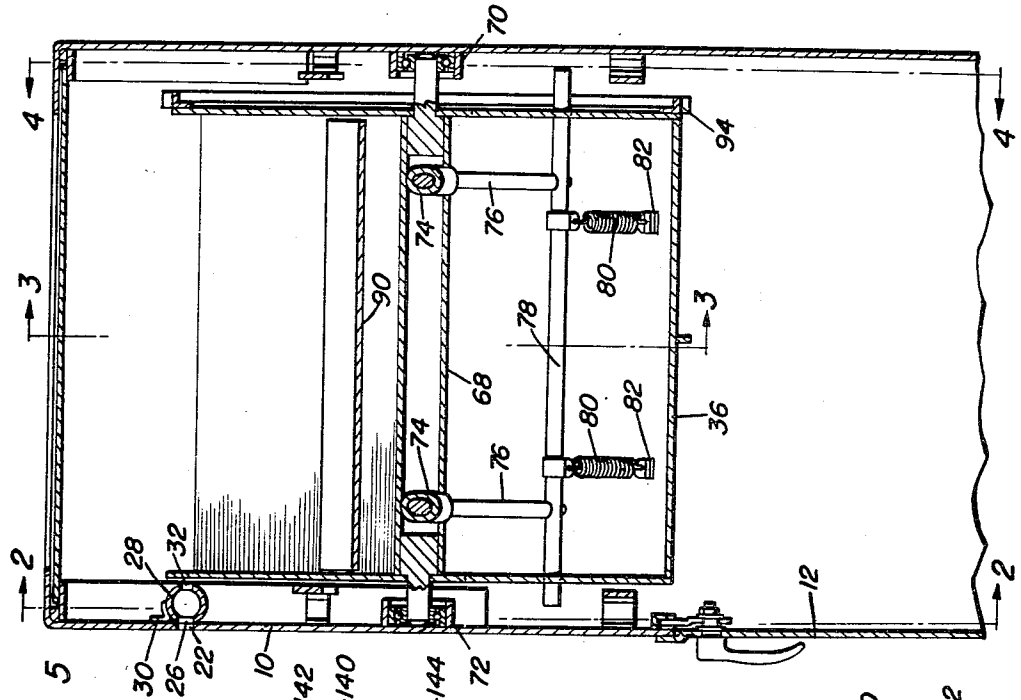


Fig. 5

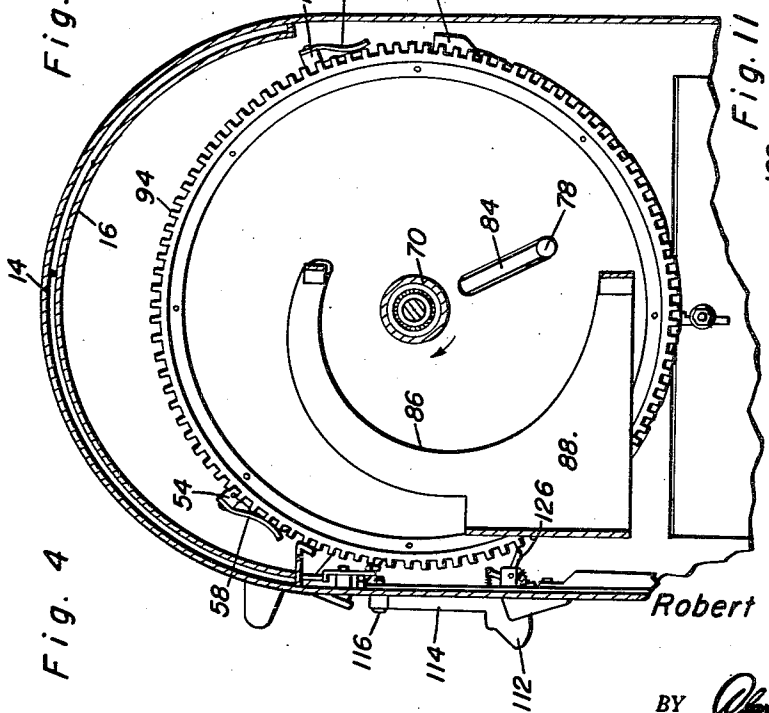


Fig. 4

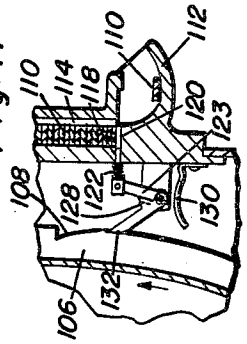


Fig. 11

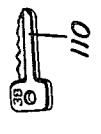


Fig. 12

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2,769,516

CLEANING DEPOSITORY

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Application January 16, 1953, Serial No. 331,564

9 Claims. (Cl. 194—4)

This invention relates to a dry cleaning depository and has for its primary object the provision of a machine capable of receiving articles of clothing and the like to be dry cleaned which are deposited by a patron, the machine not requiring the continuous surveillance by personnel of the dry cleaning establishment thus substantially reducing the overhead of the dry cleaning establishment.

The construction of this invention enables a patron previously provided with keys to take soiled clothing to a depository and after inserting one of the keys, a receiving drum can be actuated to discharge the soiled clothing within the depository. This machine further includes means for punching a ticket so as to retain a portion thereof for identification purposes while additionally providing a locker key for opening a locker in which the clothing will subsequently be placed after it has been cleaned.

One of the particular features of this invention resides in the construction of the key used for initially permitting the device to perform its functions. These keys are formed preferably from a molded plastic material such as cellulose acetate, Plexiglas, or the like which has a cam surface and which also is provided with an insert of magnetic material for engagement with a magnet carried by a key engaging member movable within an actuation tube and connected to the rotating drum.

This machine enables a cleaning establishment to conduct its business in a somewhat different manner which will provide a substantial saving in the cost of labor while also providing an added convenience to the patron thus stimulating trade with the particular establishment employing these devices.

Still further objects of the invention reside in the provision of a cleaning depository machine that is strong and durable, simple in construction and manufacture, and capable of being manufactured at a relatively low cost out of various conventional and readily available materials, while being very easy to operate and service for proper functioning.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds, are attained by this cleaning depository, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a perspective view of the cleaning depository comprising the present invention;

Figure 2 is a vertical sectional view as taken along the plane of line 2—2 in Figure 5 illustrating in greatest detail the construction of the actuation mechanism for the cleaning depository;

Figure 3 is a vertical sectional view as taken along the plane of line 3—3 in Figure 5 showing in detail the construction of the means for discharging the soiled clothing;

Figure 4 is a vertical sectional view as taken along the plane of line 4—4 in Figure 5;

Figure 5 is a vertical sectional view as taken along the plane of line 5—5 in Figure 2;

Figure 6 is a horizontal sectional view as taken along the plane of line 6—6 in Figure 2;

Figure 7 is an enlarged sectional detail view of the ticket punch comprising one of the elements of the invention;

Figure 8 is a sectional detail view of a key in engagement with the key engaging member prior to being disengaged from the key engaging member upon actuation of the latter stop cam;

Figure 9 is a sectional detail view of the latch means for preventing rotation of the drum if the access door is open;

Figures 10 and 11 are sectional detail views of the key delivering mechanism and key magazine, the device being shown prior to delivery of a key in Figure 10 and being shown after delivery of a key in Figure 11;

Figure 12 is a perspective view of one of the locker keys used;

Figure 13 is a perspective view of one of the actuation keys with parts thereof broken away for greater clarity; and,

Figure 14 is a perspective view of one of the tickets used with the machine comprising the present invention.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 generally designates the casing of this cleaning depository. The casing 10 is provided with a door 12 through which access may be had to the soiled clothing which previously had been deposited within this machine. The casing 10 is provided with an arcuate portion within which an access opening is provided, the access opening being closed by a door 14 slidably supported by guides 16 and 18 which depend from the casing 10. The outer surface of the casing 10 not otherwise employed may be used as a supporting surface for advertising placards 20.

An arcuate slot 22 is formed in one side wall of the casing 10 and an actuating lever 24 extends therethrough. The actuating lever 24 extends through a slot 26 in an arcuate tube 28 which is attached to the casing 10 by brackets 30. The lever 24 further extends through slot 32 in the tube 28 and an extension 34 of the lever 24 is secured to the rotatable drum 36. Secured to the actuating lever 24 and within the tube 28 is a key engaging member 38 which is formed from any suitable non-magnetic material such as Plexiglas, cellulose acetate, or polystyrene. This key engaging member 38 is provided with magnet 40 which is partially embedded therein. A slot 42 is provided in the key engaging member 38 for a purpose to be henceforth defined.

Communicating with the tube 28 is a chute 44 which is adapted to permit keys 46 to be inserted into the tube. The keys 46 are formed with a cam surface 48 at the forward portions thereof and suitable indicia 50 are provided on the front portion for indicating the patron using the cleaning depository. The key 46 is formed from a suitable non-magnetic material and has embedded therein a disk 52 of magnetic material adapted to be attracted by the magnet 40.

There is provided on the tube 28 a bracket 54 to which a stop cam 56 is pivotally attached. A spring 58 is provided for continuously urging the stop cam 56 inwardly through slit 60 in the tube 28, the spring 58 being mounted on the bracket 54. Upon actuation of the lever 24 the stop cam 56 will prevent the movement of the key engaging member 38 past the stop cam 56 unless a key 46 has been inserted. The cam surface 48 of the key 46 provides means for urging the cam 56 upwardly through the slit 60 to permit the passage of the key engaging member 38. The stop cam 56 therefore limits the rotation of the drum 36 since the portion 34 of the actuation lever is attached to the drum 36.

The drum 36 has a hopper portion 62 formed by sheets

64 and 66 which interconnect the disk-shaped sides of the drum 36. The drum 36 is mounted on a hollow shaft 68 which is journalled in bearings 70 and 72. Extending through the hollow shaft 68 are cylinders 74 which are rigidly mounted therein and in which pistons 76 slide. The pistons 76 have attached thereto a cross-rod 78 to which there are attached springs 80 which are also attached to brackets 82 on the inner surface of the drum 36. The cross-rod 78 extends through aligned slots 84 in the side disks of the drum 36 and is adapted to ride the inner surface 86 of cam plate 88 welded or otherwise secured to the casing 10. A push plate 90 is attached to the end portions of the pistons 76 which extend through the cylinders 74. Hence, upon rotation of the drum 36 the cross-rod 78 will ride on the inwardly converging helical cam surface 86 until the plate 90 is pushed outward from the center of the drum so as to insure that all clothing will be discharged from the hopper 62.

The door 14 is raised by lifting the handle 92 secured thereto. Means are provided to prevent the drum 36 from being rotated when the door 14 is open. This means includes a plurality of teeth 94 which are mounted on the drum 36, which are adapted to be engaged by a detent 96 mounted on an arm 98 which is pivoted on a pin 100 attached to the front wall of the casing 10. An arm 102 is connected to the arm 98 and is adapted to be engaged by a plunger 104 attached to the door 14. Hence, when the door 14 is closed the plunger 104 contacts the arm 102 which withdraws the detent 96 from engagement with the teeth 94 and permits the drum 36 to rotate.

Upon rotation of the drum 36 an elongated cam 106 having a plurality of notches 108 therein will contact means for discharging one locker key 110 into the receptacle 112 mounted on the front wall of the casing 10. This key delivering mechanism includes a magazine 114 for the keys which may be opened by means of lock 116. The magazine is provided with an opening 118 at the bottom thereof in alignment with the receptacle 112. A key delivering plunger 120 is adapted to extend through the slot 118 but is held outwardly from the slot 118 by means of a coil spring 122 concentric thereabout. Pivotally attached to the plunger 120 is a connecting rod 123 which is also pivotally mounted upon a pin 124. An actuating link 126 having a V-shaped projection 128 is pivotally secured on the pin 124 and held in its lowermost position by support spring 130. When the cam 106 engages the cam surface 132 of the actuating link 126 the projection 128 will abut against the connecting lever 123 to rotate the connecting lever 123 and urge the plunger inwardly of the slot 118 so that it will abut against the lowermost key and finally discharge it into the receptacle 112. Once the cam surface 132 is on top of the cam 126 the plunger 120 will be held in position beneath the keys 110 thus preventing the discharge of any additional keys. The notches 108 will prevent the backward rotation of the drum and the subsequent discharge of additional keys since the actuating link 126 will be lockingly engaged within one of the notches 108 when any backward motion is attempted.

When the drum 36 has been rotated so that the clothing deposited in the hopper 62 has been discharged, the key engaging member 38 arrives at the position as is shown in Figure 8. At that point a key disengaging member 134 enters the slot 42 in the key engaging member 38 and upon subsequent reverse rotation of the drum 36 the flat surface 136 of the key disengaging member 134 will engage the key 46 and urge it out of engagement with the key engaging member 38 so as to deposit the key with the clothing which has fallen into the interior of the cleaning depository. The key disengaging member 134 is continuously pressed inwardly through the slit 138 in the tube 28 by means of a spring 140 mounted on the bracket 142 to which the key disengaging member 134 is pivotally attached. The under surface of the key disengaging member 134 is provided with a slanted cam surface.

At the last stages of rotation of the drum in the initial direction, the handle being moved to the rear, a cam 144 attached to the drum 36 engages a ticket puncher plunger 146 which has a knife edge 148 at its free end. A pin 150 extends through the plunger 146 and the coil spring 152 extends between the pin 150 and the edge 154 of the ticket punch chute 156. The ticket punch chute 156 has a slot 158 therein for reception of the tickets 160. The tickets 160 as is shown in Figure 14 are provided with numerals 162 thereon or other indicia and a central portion 164 is likewise provided with similar indicia. This central portion 164 is adapted to be punched out of the ticket 160 upon actuation of the plunger 146 by the cam 144 and this portion will be discharged through the opening 162 and into the conduit 164 at the bottom of which a receptacle or container may be placed.

When a patron desires to use the facilities incorporated in this cleaning depository machine he notifies the establishment servicing the machine of his desires. That organization will then provide the patron with a number of the keys 46. Tickets 160 will be provided and will consist of duplicate halves integrally attached but perforated for easy tearing. The patron will then deposit one of the keys 46 in the chute 44 and will then move the actuating lever 24 a short distance to the position so as to cause the plunger 120 to dispense a key 110. Each of the keys 110 will be provided with a number thereon which the patron will mark on one of the duplicate halves of the ticket 160. This ticket will be then secured within the clothing to be cleaned and the door 14 will be opened using the handle 92 and the cleaning deposited in the hopper 62. After the door has been closed, the drum will be rotated, the other half of the ticket having been inserted in the slot 156. The further rotation of the drum will cause the ticket 160 to be punched. Furthermore, the pistons 76 will have been actuated so as to drive the push plate 90 outwardly thus forcing the clothes into the bottom of the casing 10. The cam engaging link 126 will ride on the cam 106 and will engage in one of the notches 108 thus preventing the return of the drum once the cycle has been started. However, when the cycle has been completed the cam engaging link 126 will ride against the end of the cam and will assume the position as is shown in Figure 10. Then, on the return of the drum the cam 106 will press against the upper portion of the cam engaging link 126 and will depress such member against the spring 130 thus permitting the return of the drum. Then the patron may depart. A messenger or collecting agent for the cleaning establishment will then collect the soiled clothes using the door 12 for access. He will at that time obtain both the key 46 deposited and the soiled clothes together with the half of the ticket 160. In addition from within the receptacle at the base of the conduit 164 he may remove the portion of the ticket which has been punched which will provide a safeguard against any mistake being committed. After the soiled clothes have been cleaned they may then be deposited in a locker adjacent the depository which may then be opened by the patron and the cleaning which has been packaged can then be removed. In this manner no sales person need be employed by the cleaning establishment to write down the order of the patron. This will provide a substantial saving amounting to a considerable financial advantage to the cleaning establishment while providing an added facility for the patron since the cleaning depositories can be used twenty-four hours a day.

Since from the foregoing, the construction and advantages of this machine are readily apparent, further description is believed to be unnecessary.

However, since numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings,

it is not intended to limit the invention to the precise embodiment shown and described but all suitable modifications and equivalents may be readily resorted to which fall within the scope of the appended claims.

What is claimed as new is as follows:

1. A cleaning depository comprising an elongated arcuate tube, a key engaging member movable in said tube, a slot in said tube, and an actuation lever secured to said key engaging member extending through said slot, said lever being secured to a rotatable receiving drum, said drum being rotated upon actuation of said lever, said drum being mounted on a shaft, said shaft being journalled in a casing, said tube being secured to said casing, said actuation lever extending through said casing, said casing having an access door in alignment with said drum, a latch for preventing rotation of said drum when said door is open, a latch releasing plunger secured to said door, a stop cam for limiting rotation of said drum without a key, said key engaging said stop cam upon movement of said actuation lever, said key engaging member moving said key in said tube against said stop cam to move the stop cam from operative position.

2. A cleaning depository comprising an elongated arcuate tube, a key engaging member movable in said tube, a slot in said tube, an actuation lever secured to said key engaging member extending through said slot, a cam key receivable in said tube, and a magnet locking said key to said key engaging member, said lever being secured to a rotatable receiving drum, said drum being rotated upon actuation of said lever, said drum being mounted on a shaft, said shaft being journalled in a casing, said tube being secured to said casing, said actuation lever extending through said casing, said casing having an access door in alignment with said drum, a latch for preventing rotation of said drum when said door is open, a latch releasing plunger secured to said door, a stop cam for limiting rotation of said drum without a key, said key engaging said stop cam upon movement of said actuation lever, said key engaging member moving said key in said tube against said stop cam to move the stop cam from operative position.

3. A cleaning depository comprising an elongated arcuate tube, a key engaging member movable in said tube, a slot in said tube, an actuation lever secured to said key engaging member extending through said slot, a cam key receivable in said tube, and a magnet locking said key to said key engaging member, said key including a portion of non-magnetic material having a cam surface on the forward portion thereof, said lever being secured to a rotatable receiving drum, said drum being rotated upon actuation of said lever, said drum being mounted on a shaft, said shaft being journalled in a casing, said tube being secured to said casing, said actuation lever extending through said casing, said casing having an access door in alignment with said drum, a latch for preventing rotation of said drum when said door is open, a latch releasing plunger secured to said door, a stop cam for limiting rotation of said drum without a key, said key engaging said stop cam upon movement of said actuation lever, said key engaging member moving said key in said tube against said stop cam to move the stop cam from operative position.

4. A cleaning depository comprising an elongated arcuate tube, a key engaging member movable in said tube, a slot in said tube, an actuation lever secured to said key engaging member extending through said slot, a cam key receivable in said tube, and magnetic means locking said key to said key engaging member, said lever being secured to a rotatable receiving drum, said drum being rotated upon actuation of said lever, said drum being mounted on a shaft, said shaft being journalled in a casing, said tube being secured to said casing, said actuation lever extending through said casing, said casing having an access door in alignment with said drum, a latch for preventing rotation of said drum when said door is

open, a latch releasing plunger secured to said door, a stop cam for limiting rotation of said drum without a key, said key engaging said stop cam upon movement of said actuation lever, said stop cam being mounted on said tube, a ticket punch on said casing, a ticket punch actuation cam on said drum, said ticket punch actuation cam engaging said ticket punch upon rotation of said drum, said key engaging member moving said key in said tube against said stop cam to move the stop cam from operative position.

5. A cleaning depository comprising an elongated arcuate tube, a key engaging member movable in said tube, a slot in said tube, an actuation lever secured to said key engaging member extending through said slot, a cam key receivable in said tube, and magnetic means locking said key to said key engaging member, said key including a portion of non-magnetic material having a cam surface on the forward portion thereof, said lever being secured to a rotatable receiving drum, said drum being rotated upon actuation of said lever, said drum being mounted on a shaft, said shaft being journalled in a casing, said tube being secured to said casing, said actuation lever extending through said casing, said casing having an access door normally in alignment with said drum, a latch for preventing rotation of said drum when said door is open, a latch releasing plunger secured to said door, a stop cam for limiting rotation of said drum without a key, said key engaging said stop cam upon movement of said actuation lever, said stop cam being mounted on said tube, a ticket punch on said casing, a ticket punch actuation cam on said drum, said ticket punch actuation cam engaging said ticket punch upon rotation of said drum, said key engaging member moving said key in said tube against said stop cam to move the stop cam from operative position.

6. A cleaning depository comprising an elongated arcuate tube, a key engaging member movable in said tube, a slot in said tube, and an actuation lever secured to said key engaging member extending through said slot, said lever being secured to a rotatable receiving drum, said drum being rotated upon actuation of said lever, said drum being mounted on a shaft, said shaft being journalled in a casing, said tube being secured to said casing, said actuation lever extending through said casing, said drum having a cleaning receiving hopper, a push plate in said hopper, at least one cam plate in said casing, a rod engaging said cam plate secured to said push plate to urge said push plate outwardly from the center portion of said drum, and resilient means for returning said push plate to its initial position, said casing having an access door normally in alignment with said hopper in said drum, a latch for preventing rotation of said drum when said door is open, a latch releasing plunger secured to said door, a stop cam for limiting rotation of said drum without a key, said key engaging said stop cam upon movement of said actuation lever, said key engaging member moving said key in said tube against said stop cam to move the stop cam from operative position.

7. A cleaning depository comprising an elongated arcuate tube, a key engaging member movable in said tube, a slot in said tube, an actuation lever secured to said key engaging member extending through said slot, a cam key receivable in said tube, and magnetic means locking said key to said key engaging member, said lever being secured to a rotatable receiving drum, said drum being rotated upon actuation of said lever, said drum being mounted on a shaft, said shaft being journalled in a casing, said tube being secured to said casing, said actuation lever extending through said casing, said casing having an access door normally in alignment with said drum, a latch for preventing rotation of said drum when said door is open, a latch releasing plunger secured to said door, a stop cam for limiting rotation of said drum without a key, said key engaging said stop cam upon movement of said actuation lever, said stop cam being

mounted on said tube, a ticket punch on said casing, a ticket punch actuation cam on said drum, said ticket punch actuation cam engaging said ticket punch upon rotation of said drum, said drum having a cleaning receiving hopper, a push plate in said hopper, at least one cam plate in said casing, a rod engaging said cam plate secured to said push plate to urge said push plate outwardly from the center portion of said drum, and resilient means for returning said push plate to its initial position, said key engaging member moving said key in said tube against said stop cam to move the stop cam from operative position.

8. A cleaning depository comprising an elongated arcuate tube, a key engaging member movable in said tube, a slot in said tube, an actuation lever secured to said key engaging member extending through said slot, a cam key receivable in said tube, and magnetic means locking said key to said key engaging member, said lever being secured to a rotatable receiving drum, said drum being rotated upon actuation of said lever, said drum being mounted on a shaft, said shaft being journalled in a casing, said tube being secured to said casing, said actuation lever extending through said casing, said casing having an access door normally in alignment with said drum, a latch for preventing rotation of said drum when said door is open, a latch releasing plunger secured to said door, a stop cam for limiting rotation of said drum without a key, said key engaging said stop cam upon movement of said actuation lever, said stop cam being mounted on said tube, a ticket punch on said casing, a ticket punch actuation cam on said drum, said ticket punch actuation cam engaging said ticket punch upon rotation of said drum, said drum having a cleaning receiving hopper, a push plate in said hopper, at least one cam plate in said casing, a rod engaging said cam plate secured to said push plate to urge said push plate outwardly from the center portion of said drum, and resilient means for returning said push plate to its initial position, a locker key delivering mechanism associated with said drum and a magazine for locker keys on said casing engaged by said key delivering mechanism to deliver a locker key, said key engaging member moving said key in said tube against said stop cam to move the stop cam from operative position.

9. A cleaning depository comprising a casing, a drum rotatably mounted in said casing, at least one cam plate in said casing, a clothing receiving hopper in said drum, said casing having an access opening therin normally in alignment with said hopper in said drum, a push plate in said hopper, a rod engaging said cam plate secured to said push plate to urge said push plate outwardly from the center portion of said drum on rotation of said drum, and resilient means for returning said push plate to its initial position, an elongated arcuate slotted tube secured to said casing, a key engaging member in said tube, an actuation lever secured to said key engaging member and said drum, said access opening having an access door, a latch for preventing rotation of said drum when said door is open, a latch releasing plunger secured to said door, a stop cam for limiting rotation of said drum without a key, said key engaging said stop cam upon movement of said actuation lever, said key engaging member moving said key in said tube against said stop cam to move the stop cam from operative position.

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