April 30, 1940. B. TRAPHAN 2,199,213

COIN CONTROLLED DICKEY DISPENSING MACHINE

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FIG. 1.

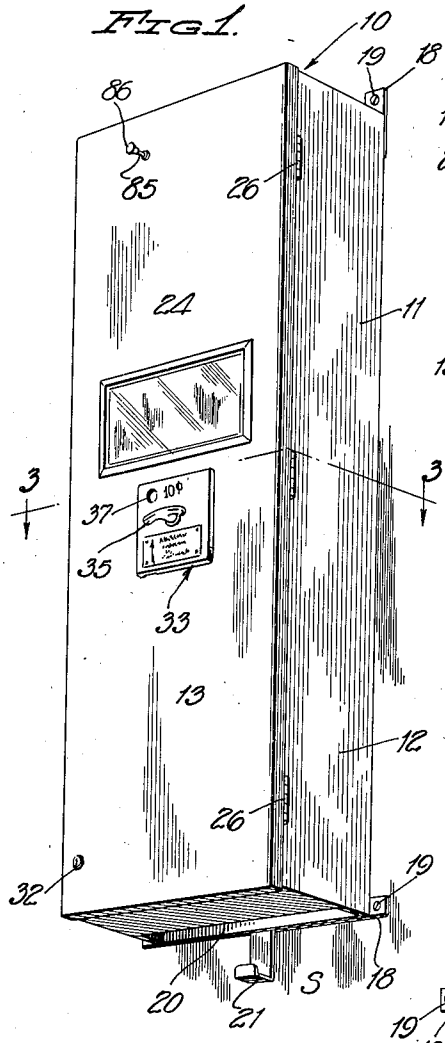


FIG. 2.

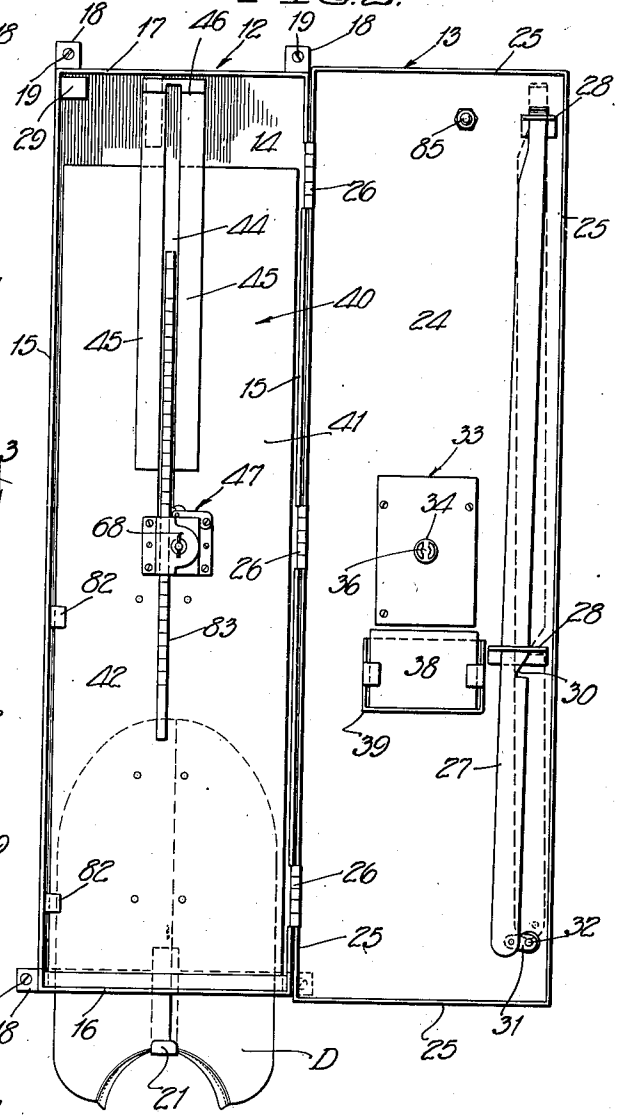
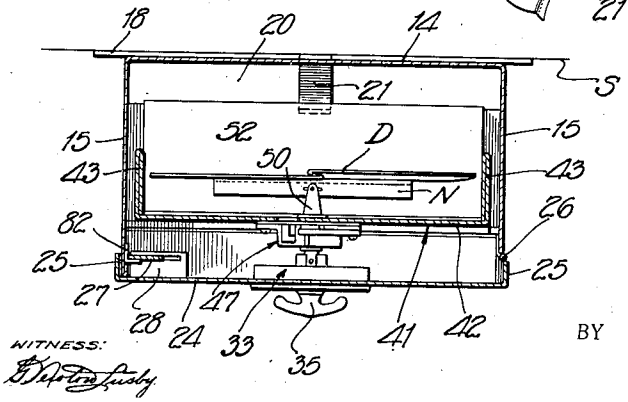


FIG. 3.



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COIN CONTROLLED DICKEY DISPENSING MACHINE

Filed July 27, 1939 3 Sheets-Sheet 2

FIG. 4.

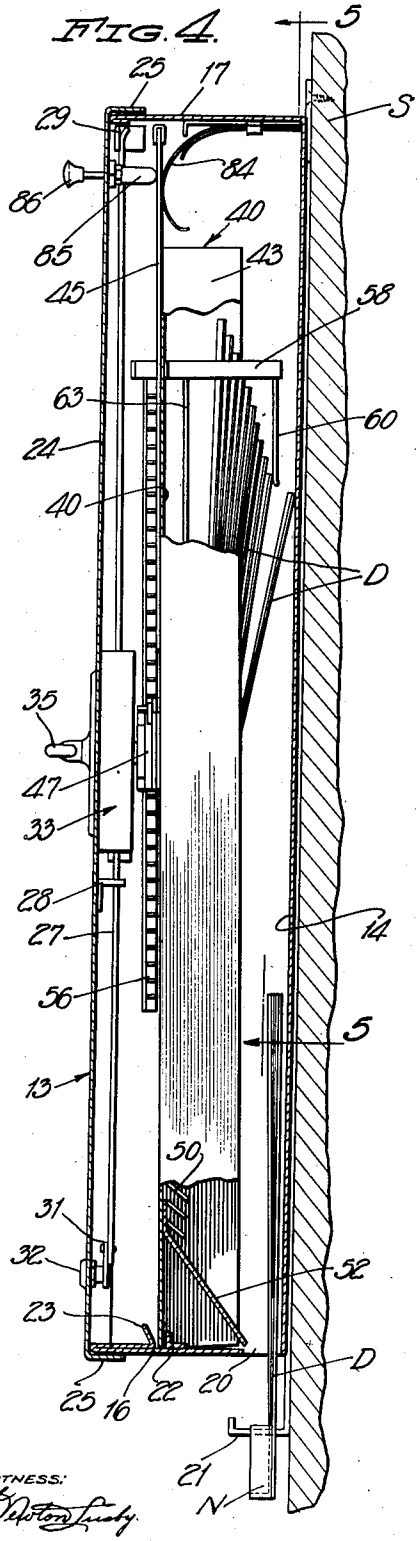


FIG. 5.

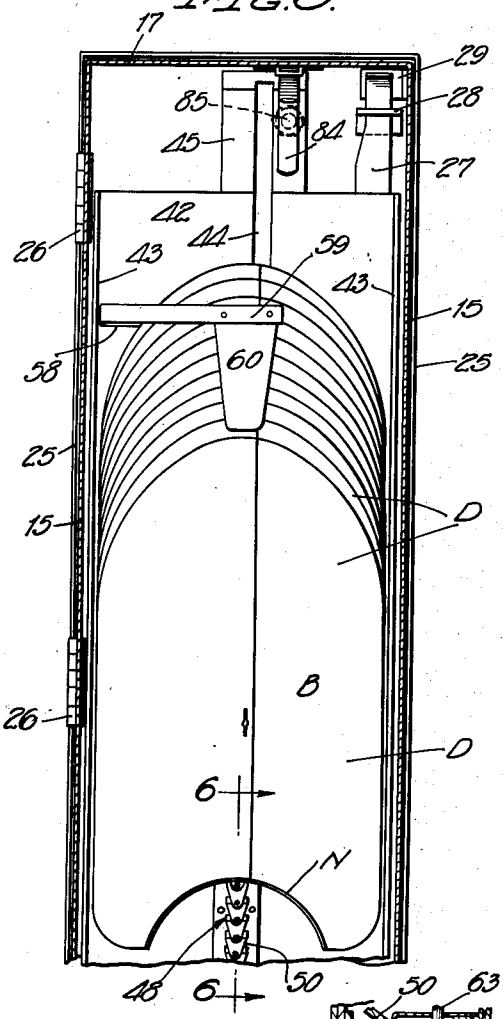
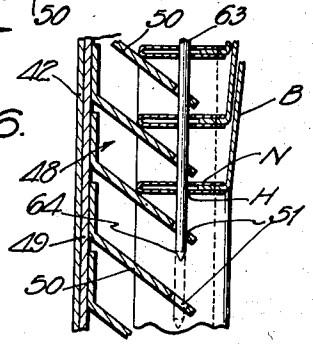


FIG. 6.



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COIN CONTROLLED DICKEY DISPENSING MACHINE

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FIG. 7.

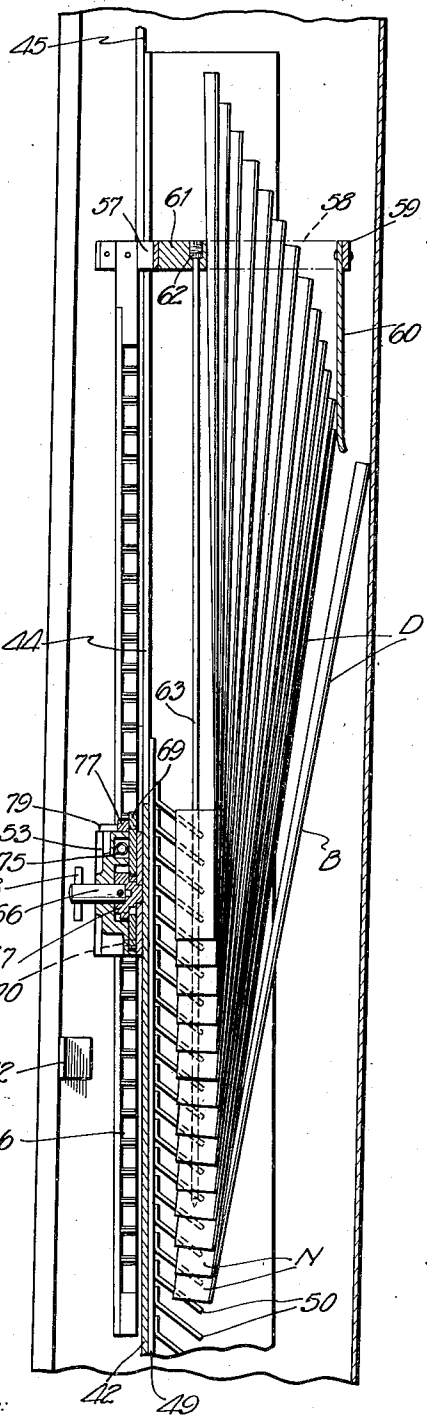


FIG. 8.

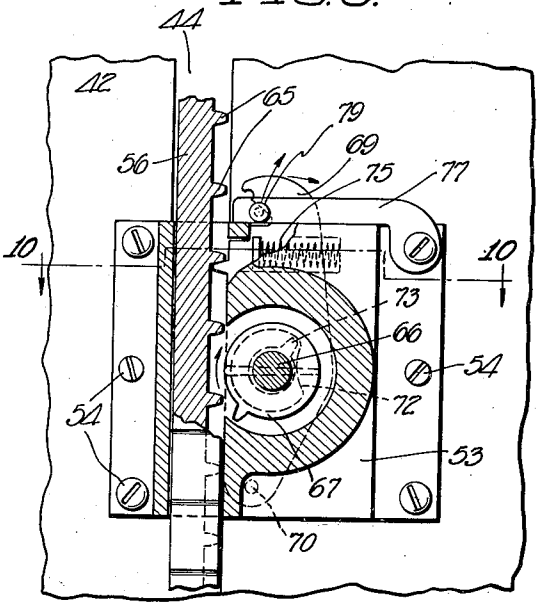
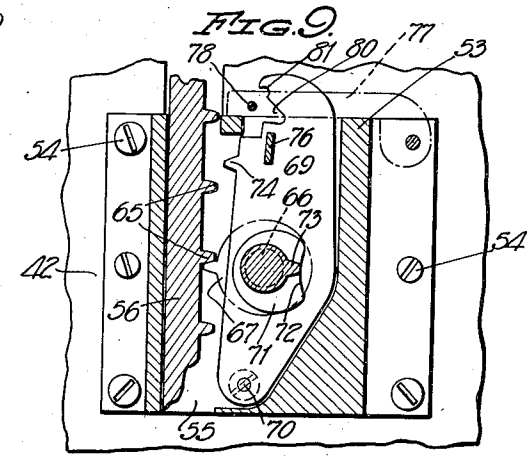


FIG. 9.



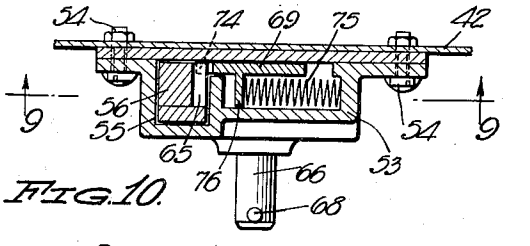


FIG. 10.

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WITNESS:

Patented Apr. 30, 1940 2,199,213

UNITED STATES PATENT OFFICE

2,199,213

COIN CONTROLLED DICKEY DISPENSING MACHINE

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Application July 27, 1939, Serial No. 286,782

7 Claims. (Cl. 312—94)

This invention relates to improvements in coin controlled dispensing machines, and more specifically to a machine for the vending of shirt fronts, generally referred to as "dickeys."

The primary object of the invention resides in a coin controlled dickey vending machine which may be installed in the kitchens of restaurants, hotels and other eating establishments for the convenience of waiters or other help who wear dickeys. It is not unusual for a waiter to soil his dickey during the performance of his duties which for the sake of neatness and cleanliness necessitates the immediate replacement of the soiled dickey by a clean one. By providing a coin controlled machine constructed in accordance with this invention, in the privacy of a restaurant kitchen or in the male help's dressing room, a change of dickeys may be made without undue delay in the performance of a waiter's duties.

One of the important features of the invention is to provide a coin controlled dickey vending machine which may be stocked in a manner to assure the dispensing of a single dickey during each actuation of the machine.

Another feature of the invention is to provide a novel compact manner of stocking the machine with a supply of dickeys so as to minimize the size of the machine.

A further feature of the invention is the provision of a dickey vending machine embodying a novel means of releasing a dickey should the same become accidentally stuck in the machine after its release by the coin controlled actuating means.

Other features of the invention reside in a dickey vending machine which is simple and inexpensive of construction; light of weight; and which may be expeditiously stocked with dickeys when the occasion requires.

Other novel features of the invention will appear as the following specification is read in conjunction with the several views of the drawings, in which:

Figure 1 is a perspective view of the invention ready for use.

Figure 2 is a front elevational view with the front door in unlocked open position and showing a dickey being dispensed.

Figure 3 is a horizontal sectional view on the line 3—3 of Figure 1.

Figure 4 is an enlarged vertical transverse sectional view through the casing with certain inner parts broken away in section.

Figure 5 is a fragmentary vertical sectional view on the line 5—5 of Figure 4.

Figure 6 is an enlarged detail vertical sectional view on the line 6—6 of Figure 5.

Figure 7 is an enlarged fragmentary vertical transverse sectional view but illustrating the dickeys in elevation.

Figure 8 is an enlarged detail sectional elevational view of the rack bar actuating means.

Figure 9 is a vertical sectional view taken approximately on the line 9—9 of Figure 10 but illustrating the rack bar latch plate in releasing position.

Figure 10 is a horizontal sectional view on the line 10—10 of Figure 8.

Referring to the drawings by reference characters, the numeral 10 designates the dickey vending machine in its entirety and includes a vertically elongated sheet metal box-like casing 11 consisting of a rectangular body 12 and a hinged door 13. The body 12 comprises a rear wall 14, vertical side walls 15—15, a bottom wall 16, and a top wall 17. Attaching brackets 18 extend from the top and bottom of the casing body 12 through which screws 19 pass for securing the rear of the body flat against a supporting structure S. The bottom wall 16 is provided with a discharge slot 20 which extends from one side wall 15 to the other side wall 15 and which is disposed at the rear of the bottom wall as best seen in Figures 3 and 4 of the drawings. A hook member 21 is fastened to the rear wall 14 and depends below the bottom wall 16 with the hook portion thereof disposed directly beneath the slot 20 midway between the ends thereof. Fixed to the inside of the bottom wall 16 is an angle bar 22, the ends of which terminate short of the side walls 15—15. Arranged in spaced relation with respect to the angle bar 22 forwardly thereof, is an upwardly and forwardly extending flange 23 which may be formed integral with the bottom wall by bending a portion of the bottom wall inwardly as shown in the drawings, or the same may be a separate piece fixedly secured to the bottom wall.

The door 13 comprises a rectangular panel 24, the four sides of which are bounded by inwardly extending flanges 25 which telescope the four walls of the casing body 12 when the door is in closed position. One side of the door 13 is hinged to one of the side walls 15 of the casing body as at 26. A latch bolt 27 is mounted for vertical sliding movement in guide brackets 28 provided on the inside of the door adjacent the free side thereof and when the bolt is moved to locking

position the upper end engages behind a keeper 29 fixed to the casing body adjacent the top thereof. The bolt 27 is provided with a notch 30 which interlocks with one of the brackets 28 when the bolt is in extended locked position. The lower end of the bolt is pivoted to an arm 31, which arm is turnable with the barrel of a turnable key actuated lock 32 mounted in the door panel 24 with the keyhole disposed on the outer side of the panel.

Mounted on the panel 24 of the door just below the horizontal center and midway between the sides thereof is a coin controlled actuating unit 33 of any conventional construction which includes a rotatable actuating shaft 34 having an actuating handle 35 at the outer end thereof and a key or slot 36 at its inner end. The front face of the unit 33 is disposed on the outer side of the door and has a coin slot 37 therein. Normally the shaft 34 is held locked against turning but upon the insertion of a coin of the proper denomination into the coin slot, the coin actuates the coin controlled unit to release the shaft and permit manual turning of the same by an operator grasping and imparting a turning movement to the actuating handle 35. A coin collection box 38 is removably supported by a hanger 39 beneath the coin discharge opening of the coin controlled actuating unit 33 to receive the coins after they pass through the said unit.

Removably mounted and enclosed within the casing 11 is a dickey supporting and releasing rack unit 40 which includes an elongated rectangular shaped metal casing 41 which is U-shape in cross section to provide a front wall 42 and rearwardly extending side walls 43—43. The depth of the casing 41 is much less than that of the casing body 12 and is of a length less than that of the body 12 into which it fits. The lower edge of the front wall 42 rests upon the bottom wall 16 and is disposed in the space between the angle bar 22 and flange 23. The inclined flange 23 permits forward tilting of the rack unit 41 to facilitate insertion of the unit into the casing body 12 and its removal therefrom. The front wall 42 is provided with a guide slot 44 which extends downwardly from the top edge thereof, and fixedly attached to the front side of the front wall 42 at opposite sides of the slot 44 are the flat legs 45—45 of an inverted U-shape guide extension member 46, the bight portion thereof terminating just short of the top wall 17 of the casing. The space between the legs 45—45 disposed above the top of the casing 41 forms a continuation of the guide slot 44. The lower end of the guide slot 44 terminates adjacent a rack bar actuating mechanism 47 which is operatively coupled to the shaft 34 of the coin control unit 33 when the door 13 is closed and a detail explanation of the mechanism 47 will follow. Fixedly attached to the rear side of the front wall 42 and extending downwardly from the closed end of the slot 44 to a point adjacent the lower end of the wall 42 is a dickey rack 48. The rack 48 includes a metal base bar 49 which is riveted, welded, or otherwise secured to the front wall 42. Fixed to the base bar 49 along the length thereof by rivets, welding or the like, are a plurality of equi-distantly spaced rearwardly extending downwardly inclined columns of finger members 50 having vertically alined openings 51 therein. Fixed to the lower end of the wall 42 below the column of finger members 50 is a rearwardly and downwardly inclined chute wall 52, the lower end of which overlies the discharge slot 20. The chute wall 52 extends the width of the casing 40 between the side walls 43—43 thereof.

The rack bar actuating member 47 includes a housing 53 which is secured to the front side of the wall 42 by screws 54 and this housing is provided with a vertical passage 55 in a line with the slot 44 but forward of the plane thereof. A vertically slidable rack bar 56 is slidable through the passage 55 and guided by the walls thereof. The upper end of the rack bar has a rearwardly extending head 57 which passes through the slot 44 and attached to the rear side of the head is the inner arm of a frame 58 which is U-shape in top plan, the outer arm 59 of the frame being disposed beyond the plane of the side walls 43—43 of the casing 41. The arm 59 carries a rigid depending finger plate 60 of a predetermined length. The inner arm of the U-shaped frame 58 has a bracket 61 fixed thereto to which the threaded head 62 of a releasable locking rod 63 is threadedly connected, the lower end of the rod being pointed as at 64. The rod 63 is in vertical alinement with the openings 51 in the finger members 50 for free sliding movement therethrough. The rack bar 56 is of such length and is capable of such up and down sliding movement, that the rod 63 may be lowered to pass through all of the column of finger members 50, and raised to a position clear of the uppermost finger member for a purpose to be presently appreciated.

The teeth 65 of the rack bar 56 extend transversely along one side thereof and are spaced apart a distance approximating the distance that the rack bar is intended to slide during each actuation of the rack-bar actuating mechanism 47. The rack bar actuating mechanism further includes a rotatable shaft 66 journaled in and disposed transversely of the housing 53 to which a single tooth wheel 67 is fixedly connected and the tooth of which engages a tooth 65 of the rack bar on each revolution of the tooth wheel when turned in a clockwise direction to impart a predetermined upward movement to the rack bar, frame 58, finger plate 60, and rod 63. The distance of each vertical movement of these parts is sufficient to move the pointed end 64 of the rod 63 from the opening 51 of one finger member 50 to a position just short of the opening 51 in the next higher finger member as illustrated in full and dotted lines in Figure 6 of the drawings. One end of the shaft 66 extends forwardly through the housing 53 and the extending end is provided with a transversely disposed key pin 68 which enters the kerf 36 of the shaft 34 of the coin control actuating unit 33, whereby the rack bar actuating unit 47 is operatively connected to the coin controlled unit 33 when the door 13 is in closed locked position as shown in Figures 1, 3, and 4 of the drawings. Thus, when a coin of the proper denomination is inserted into the coin controlled actuating unit 33, the handle 35 may be turned, which imparts a like turning movement to the shaft 66 and tooth wheel 67 to lift the rack bar 56 and the parts carried thereby, upwardly a predetermined distance.

To prevent accidental dropping of the rack bar 56 and the parts carried thereby after each predetermined upward movement thereof, I provide a releasable catch member 69 which is pivoted within the housing at its lower end as at 70. The catch plate is provided with a substantially three quarter circular shaped opening 71,

the remainder of the wall of the opening being convex to provide an inwardly extending cam surface 72. The shaft 66 extends through the opening 71 and carries a tooth 73 which rides over the cam surface 72 on each revolution of the shaft. The tooth 73 extends in a radial direction opposite to that of the tooth 67, so that as the tooth 67 is engaging a tooth 65 of the rack bar, the tooth 73 is riding over the cam surface 72 to move the tooth 74 of the catch member 69 out of the path of sliding movement of the teeth of the rack bar. The tooth 74 is disposed in confronting relation to the teeth of the rack bar so as to normally engage beneath one of them to support the rack bar to prevent downward movement thereof. An expansion spring 75 has one of its ends abutting a side wall of the housing 53 and its other end abutting a lug 76 extending from the front face of the catch member 69, to normally urge the catch member toward the rack bar to position the tooth 74 in the path of the teeth of the rack bar. The catch member is moved to releasing position by the tooth 73 and cam surface 72 against the tension of the spring 75 as shown in Figure 9 of the drawings.

To permit free sliding movement of the rack bar 56, which is desired when the rack unit is being stocked with dickeys, I provide a pivoted latch member 77 which normally rests upon the top of the housing 53 (Figures 8 and 9), and which is provided with a rearwardly extending stop pin 78 and a forwardly extending manipulating knob 79. The upper end of the catch member 69 extends beyond the top of the housing 53 and is provided with a substantially V-shaped notch 80, beyond one wall of which a semi-circular shaped recess 81, is formed. The notch 80 permits normal free unobstructed forward movement of the latch member 69 relative to the pin 78, but if the catch member 7 is swung upwardly by grasping the knob 79, the pin 78 may be seated in the recess 81, whereupon the latch member 69 will be held in releasing position against the tension of the spring 75, and the rack bar is free to be slid in either direction.

As previously set forth, the machine 10 is intended for the dispensing of dickeys (shirt fronts) of the kind designated by the letter D. Each dickey D, is made of stiff paper or other inexpensive material and includes a flat bib-like body B, having a substantially semi-circular shaped neck band N. A button-hole H is provided at the front of the neck-band and it is through the button-holes of the dickeys to be dispensed that the rod 63 passes to lock the dickeys in the machine and successively release the same during actuation thereof.

To stock the machine 10 with a supply of dickeys D, the door 13 is unlocked and swung open, whereupon the rack unit 40 may be tilted forward, shifted toward the right (Figure 2) to clear the stop flanges 82 on the left side wall 15 of the casing body 12, and lifted out of the casing. Assuming that the rack unit is empty of any dickeys at which time the rack bar 56 is at the limit of its upward movement, the first dickey D is inserted with the neck band N facing down and disposed between the space between the two adjacent uppermost finger members 50. To permit free downward slding of the rack bar 56 and rod 63, the catch member 77 is manually moved to position the stop pin 78 in obstructing position relative to the latch member 69. After positioning the neck band N between the two uppermost finger members 50, the rack bar is pushed down to cause the pointed end of the rod 63 to pass through the button hole H of the dickey and through the openings 51 of the two adjacent finger members. The next dickey inserted has its neck band inserted between the third and fourth finger members and the rack bar is moved down to cause the rod 63 to pass through the button hole H therein and through the adjacent finger members. As the other dickeys are inserted, the rack bar is successively moved down so that the rod 63 is threaded through the button holes of all the dickeys with which the machine is stocked. For gauging the distance that the rack bar is to be moved during each insertion of a dickey, the front face of the rack bar 56 is provided with equi-distantly spaced graduations 83 (Figure 2), the graduations being on the same plane as the rack bar teeth 65, so as to also gauge the position of the rack bar relative to the tooth wheel 67 at the completion of the stocking operation, at which time the catch 77 is actuated to release the latch member 69 to lock the rack bar in its set position. When the machine is stocked with dickeys the same are compactly arranged one over the other in successive stepped down relation as shown in Figures 4, 5, and 7, with the end of the finger plate 60 clear of the lowermost dickey but in contact with the next lowermost one, for the purpose of freeing the top end of the next dickey to be dispensed while serving to hold the others in compact relation. The rack unit 40 may now be replaced in the casing body 12 and the door 13 closed and the same locked by applying the proper key to the lock 32, whereupon the machine assumes the position shown in Figures 1, 3, and 4, with the shaft 66 of the rack bar actuating unit operatively connected with the shaft 34 of the coin controlled actuating unit 33.

To operate the machine 10, a coin of the proper denomination is inserted in the coin slot 37 and an operator grasps and turns the handle 35 in a clockwise direction which turns the shafts 34 and 66, causing the tooth of the tooth wheel 67 to engage beneath a rack bar tooth 65 and subsequently effect a release movement to be imparted to the latch member 69 by the finger 73 and cam surface 72. As the tooth wheel 67 continues to turn, it lifts the rack bar 56 upwardly a predetermined distance and just prior to disengagement of the tooth wheel with the rack bar, the finger 73 leaves the cam surface 72 and the spring 75 returns the latch plate to its normal latching position with the tooth 74 disposed in the downward path of a tooth 65 of the rack bar. Thus the rack bar has been lifted a predetermined distance and is locked against downward movement, and it is during this predetermined movement of the rack bar that the rod 63 has moved a like distance to cause the pointed end 64 thereof to move out of the button-hole H of the lowermost dickey, whereupon the released dickey drops by gravity, with the neck-band end striking the inclined guide plate 52 which directs the dickey toward the discharge slot 20, through which the neck band end passes and drops upon the hook 21. The operator grasps the neck band end of the dickey and pulls it clear of the machine. The angle of inclination of the finger members 50, permits the neck bands of the dickeys to freely slide when they are successively released by the releasable lock rod 63.

Should a released dickey D be stuck in the machine, I have provided an agitating mecha-

nism which may be operated to free the dickey. This agitating mechanism includes a leaf spring 84 fastened to the top wall 17 of the casing on the inside thereof and against which the free top end of the extension member 46 of the rack unit abuts. A plunger 85 is slidably mounted in the door 13 in alinement with the top of the member 46 and the outer end is provided with a manipulating knob 86, the same being normally disposed away from the outer face of the door by the action of the spring 84 upon the member 46. By imparting a sudden push upon the knob 86, the rack unit 40 will be inclined rearwardly, and when released, the spring 84 returns the parts to normal position. By imparting a series of intermittent pushes to the knob 86, the rack unit 40 will be sufficiently agitated to cause any released dickey to freely drop through the discharge opening 20.

While I have specifically referred to the machine 10 for use in the vending of dickeys, it will be understood that other relatively flat merchandise having an opening or eyelet equivalent to the button-hole of a dickey may be placed in the machine for successive dispensing therefrom if desired.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. In a dispensing machine of the kind described, a vertical rack including a column of equi-distantly spaced downwardly inclined members having alined openings therein, a locking rod slidable through the openings, and actuating means for intermittently lifting said rod a distance equal to the space between two adjacent members during each lifting movement thereof, whereby articles to be dispensed may be respectively interposed between adjacent members and held suspended by reason of the rod passing through openings in the articles and successively released by the intermittent operation of said actuating means.

2. In a dispensing machine of the kind described, a vertical rack including a column of equi-distantly spaced downwardly inclined members having alined openings therein, a lock rod mounted for vertical sliding movement through the alined openings, intermittently operable rack bar and pinion means for lifting said lock rod a distance equal to the space between two adjacent members during each actuation thereof, and releasable means for preventing downward movement of the lock rod between intermittant operations of said rack bar and pinion means, whereby articles to be dispensed may be respectively interposed between adjacent members and held suspended by reason of the rod passing through openings in the articles and successively released by the gradual upward movement of the lock rod during intermittent operations of the rack and pinion means.

3. In a dispensing machine of the kind described, a vertical support, a column of equi-distantly spaced downwardly inclined members mounted on said support, each of said members having an opening therein with the openings of the members in vertical alinement, a rack bar mounted on said support for vertical movement, a rotatable tooth wheel successively engageable with the teeth on said rack for lifting said rack bar a predetermined distance on each revolution of the said tooth wheel, the distance of each lifting movement of said rack bar being equal to the space between adjacent members, and a lock rod carried by said rack bar and freely slidable through the alined openings in said members, substantially as and for the purpose described.

4. In a dispensing machine as set forth in claim 3, which includes in combination, a pivoted spring actuated latch member normally engageable with a tooth of said rack bar for arresting downward movement of the rack bar during the idling movement of the tooth wheel on each revolution thereof, and means simultaneously operable during the turning movement of said tooth wheel when operatively engaging said rack bar for moving said latch member out of latching engagement with the tooth of said rack bar.

5. In a dispensing machine of the kind described, a vertical supporting structure, releasable holding means carried by said supporting structure for engaging the lower ends of like relatively flat articles to be dispensed and for supporting the articles in lapped relation with their top edges successively stepped inwardly, intermittently operable actuating means for operating said releasable holding means for successively releasing the articles held thereby, and means for holding the upper ends of the articles, with the exception of the next article to be dispensed, in bunched relation.

6. In a dispensing machine, a vertical merchandise holding and dispensing rack unit including a flat support having a vertical slot therein, a column of equidistantly spaced downwardly inclined members mounted on one side of said support, each of said members having an opening therein, the openings of the members being in vertical alinement, a housing supported on the other side of said support, a vertical rack bar slidably mounted in said housing, a head at the top of said rack bar extending through said slot, a lock rod fixedly secured to said head and depending therefrom in vertical alinement with the openings in said members for free sliding movement therethrough, an actuating shaft journaled in said housing, a single tooth wheel fixed to said shaft for engagement with a tooth of said rack bar on each revolution of said shaft whereby to lift said rack bar a predetermined distance, releasable catch means engageable with said rack bar for preventing downward movement of said rack bar during that portion of the revolution of the single tooth wheel when it is disengaged from said rack bar, and means operable by said actuating shaft for disengaging said catch means from the rack bar during operable contacting engagement of the single tooth wheel with said rack bar.

7. In a dispensing machine in accordance with claim 6, including, manually operated means for indefinitely rendering the catch means inoperative out of engagement with the rack bar to facilitate free sliding of the rack bar in either direction during the racking of articles of merchandise in the holding and dispensing rack unit.

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