Feb. 23, 1943. M. M. BERGER ET AL 2,311,632

CIGAR VENDING MACHINE

Filed Feb. 8, 1941 3 Sheets-Sheet 1

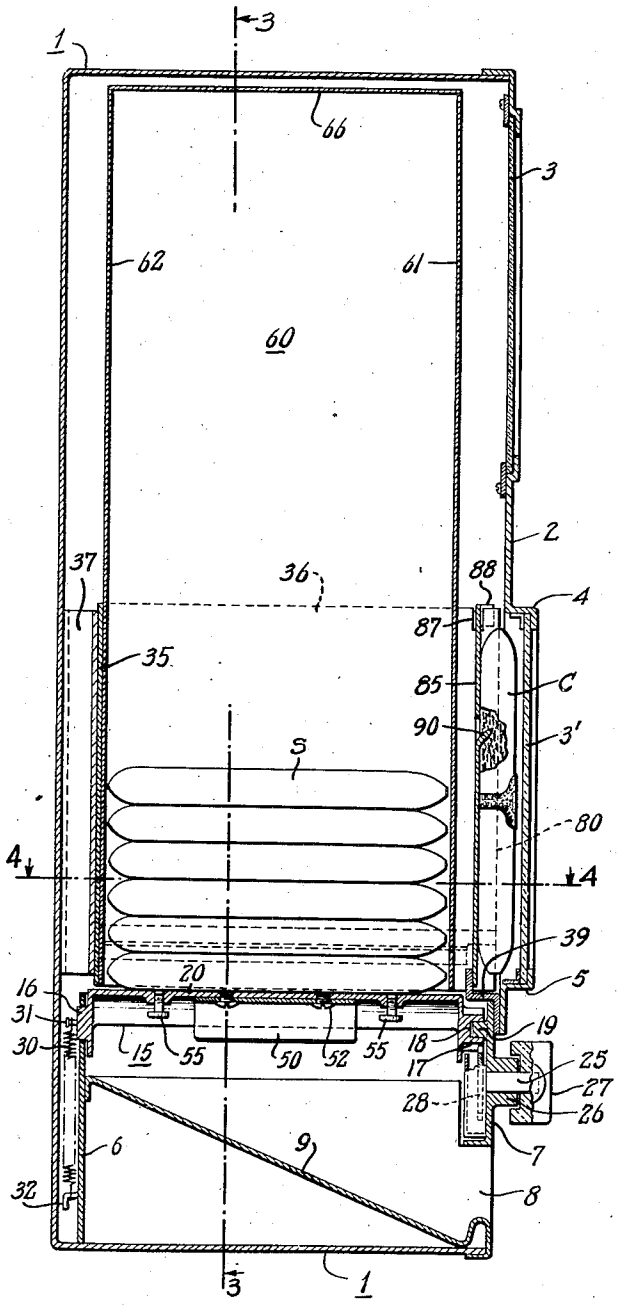


Fig. 1

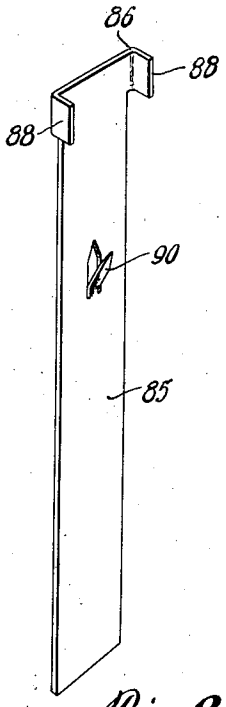


Fig. 2

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CIGAR VENDING MACHINE

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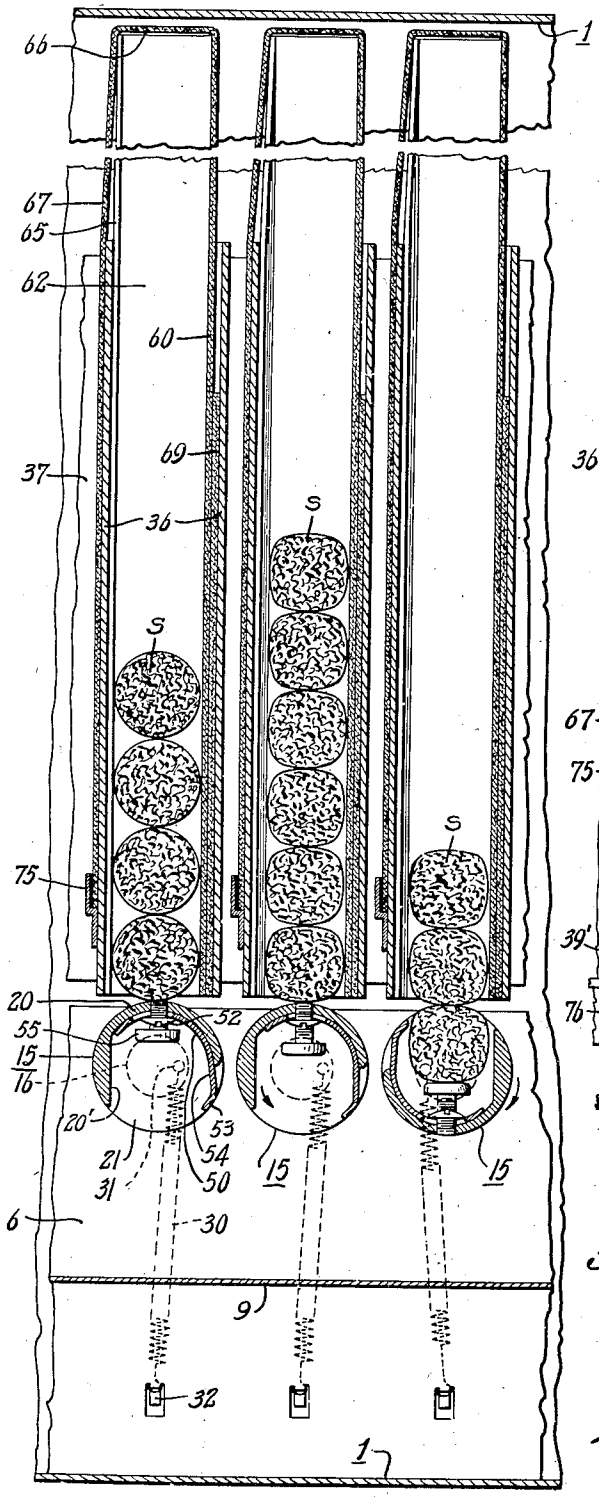


Fig. 4

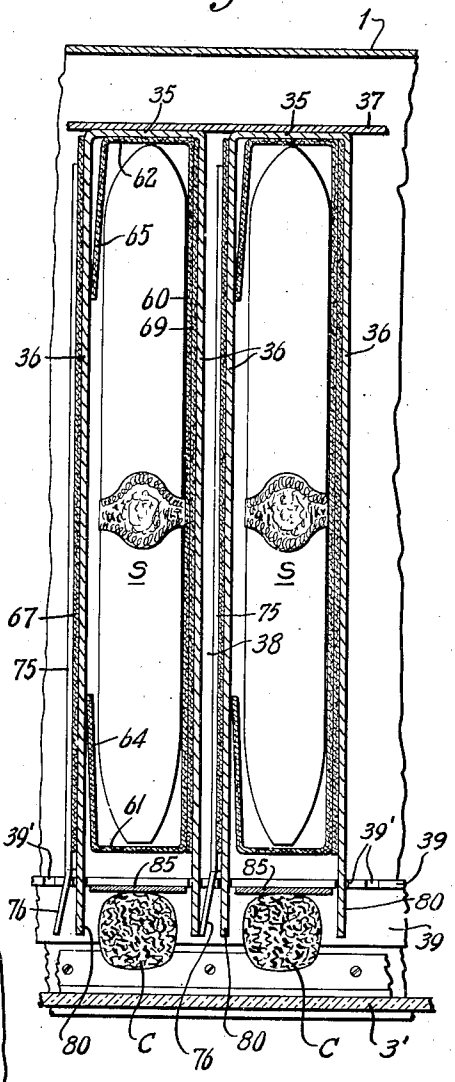


Fig. 3

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CIGAR VENDING MACHINE

Filed Feb. 8, 1941 3 Sheets-Sheet 3

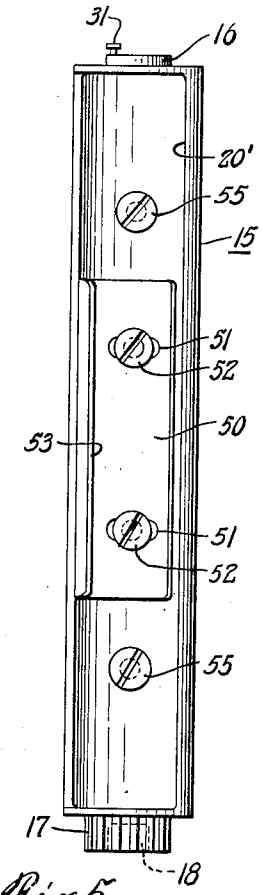


Fig. 5

Fig. 7

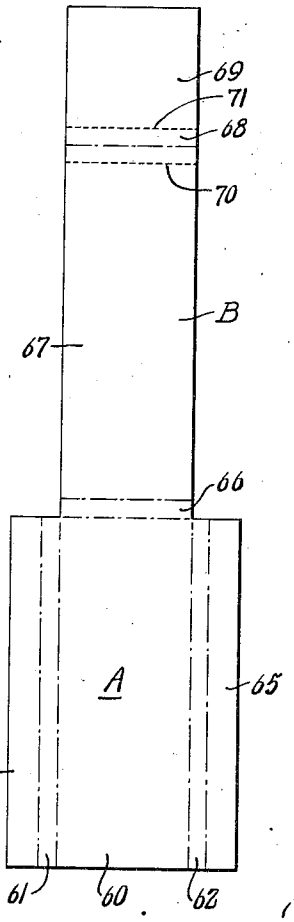


Fig. 8

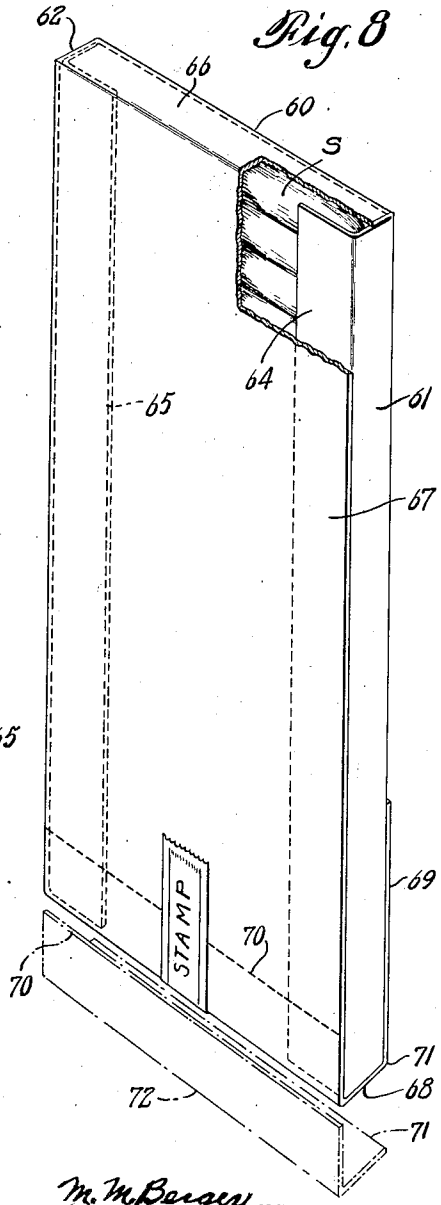
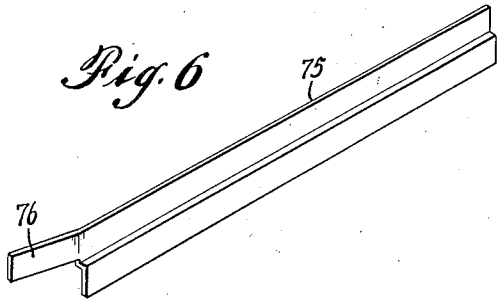


Fig. 6



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Patented Feb. 23, 1943 2,311,632

UNITED STATES PATENT OFFICE

2,311,632

CIGAR VENDING MACHINE

Martin M. Berger, New York, N. Y., and John Sharenow, Bloomfield, N. J., assignors of five-tenths to said Berger, three-tenths to said Sharenow, and two-tenths to Benjamin H. Golob, North Bergen, N. J.

Application February 8, 1941, Serial No. 377,972

10 Claims. (Cl. 312—48)

The invention relates to vending machines and more particularly to new and improved devices for vending cigars.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:

Fig. 1 is a vertical section of a vending machine embodying the invention;

Fig. 2 is a detailed perspective of cigar display means;

Fig. 3 is an enlarged fragmentary section on line 3—3 of Fig. 1;

Fig. 4 is an enlarged fragmentary section on line 4—4 of Fig. 1;

Fig. 5 is a top plan view of one of the cigar dispensing troughs;

Fig. 6 is a detail in perspective of a container-guiding and supporting flange;

Fig. 7 is an expanded view of a cigar container; and

Fig. 8 is an enlarged perspective of said container assembled and loaded with cigars in position for use in the machine.

The invention is directed to providing novel and improved devices for a vending machine capacitated to vend cigars selectively from a plurality of parallel vertical columns wherein the cigars lie horizontally. While machines for vending articles selectively from multiple parallel columns are generally known, we are unaware of any such mulitple column machine designed for vending cigars. The primary objects of the invention are therefore to provide improvements for capacitating vending machines of the multiple parallel vertical column type to the vending of cigars.

One object of the invention is to provide novel dispensing means which is regulable so as to accommodate cigars having different cross-sectional sizes and shapes.

Another object of the invention is to provide an improved form of cigar-holding magazine wherein the cigars are stacked for free and uninterrupted feeding movement to the dispensing means, said magazine being designed to cooperate to that end with a novel form of cigar package or container.

Another object of the invention is to provide, as a part of said magazine, novel means for supporting a cigar in position for display purposes, whereby a cigar conforming in all respects to those contained in its particular magazine may be displayed to the public and may be readily replaced by another display cigar when the contents of the particular magazine are changed to those of another brand.

Other novel features of the invention will be pointed out hereafter or will be obvious from the disclosure and context. It will be understood that the foregoing general description and the following detailed description as well are exemplary and explanatory of the invention, but are not restrictive thereof.

Referring now in detail to the present preferred embodiment of the invention illustrated by way of example in the accompanying drawings, a vending machine having a plurality of vertical columns of horizontally-disposed cigars is more or less conventionally shown in Figs. 1 and 3. Said machine comprises a rectangular casing 1 having an open front covered by a vertical front panel 2, in which the upper portion 3 may be transparent to expose the revenue stamps or other data required by the Government. The lower portion of said front panel is preferably flanged outwardly at 4 and 5 to provide an open window having a glass cover 3' through which display cigars C may be seen.

The lower portion of the casing 1 houses a box-like dispensing structure comprising a back plate 6 resting on the bottom of the casing 1 and a flanged front plate 7 which is provided with a conventional dispensing opening across the front of the machine at 8. An inclined delivery plate 9 lies within the structure 6—7 and is adapted to receive cigars dropped thereon by the overhead dispensing mechanism and guide them toward the opening 8.

A plurality of independently rotatable dispensing troughs 15 are horizontally arranged in parallel across the upper part of the structure 6—7, said troughs being roughly semi-circular and rotatable on their horizontal axes to receive cigars from the magazines overhead and to dump them onto the plate 9. The rear ends of the respective troughs 15 are provided with trunnions 16 which are journaled in the plate 6, while the front ends of each trough are provided with a toothed boss 17 which is centrally bored at 18 to journal about an inwardly projecting stud 19 on the plate 7.

As shown, the troughs 15 normally lie with their solid barrel portions 20 at the top, thereby to support and block entry of any of the cigars S in the overhead stack. Said troughs are designed for rotary movement through substantially 180° to the position shown at the right hand

side of Fig. 3 thereby to receive one of the cigars S through the open face 21 of the trough. Return rotation of the trough to its original position will thereby dump the contained cigar onto the chute plate 9 while blocking the entry of any of those in the column above.

The embodied means for effecting rotation of one of the troughs 15 comprises a shaft 25 journaled in the bore of boss 26 of the plate 7 and provided with an external operating handle 27. The inner end of the shaft 25 is provided with a mutilated gear wheel 28 which is adapted to engage with the intermeshing teeth of the geared boss 17. Manual rotary movement of the handle 27 is normally opposed by a return spring 30, one end of which is fixed to an eccentric pin 31 on the trunnion 16 and the other end to a fixed hook 32 on the plate 6.

Any suitable means, not shown, may be provided for interlinking the movement of the several parallel troughs 15 with each other and with any suitable or conventional form of coin control, whereby the dispensing movement of any trough is prevented except when a coin is positioned in the coin control and also whereby the usual interlock prevents the rotation of any trough, except the one initially selected by the separator, after rotation beyond the usual range of coin scavenging movement has been carried out. These means constitute no essential part of the present invention and are therefore not disclosed in detail. A mechanism of the general type proposed to be used in disclosed in Patent No. 1,778,833 to Norris.

The invention provides means for supporting parallel vertical stacks of horizontally disposed cigars S above each of the several dispensing troughs 15. As embodied, said means comprises rectangular magazines of uniform sizes and shapes. Said magazines constitute chambers of rectangular cross-section having rear walls 35 and side walls 36 extending from the rear to the front of the machine and upwardly from just above the tops 20 of the troughs 15 for a distance substantially less than halfway to the top of the casing 1. Said magazines are supported within the casing by a rear bracket 37 and are spaced a short distance from each other as at 38. At the front the walls 36 rest upon the horizontal surface of an angled bracket 39 which is slotted at intervals 39' for the passage of said walls. Said magazines are thus designed to receive cigar-containing cartons so that the cigars lie in parallel vertical columns within the respective magazines. The cartons, in place, have open bottoms so that the cigars will slide freely downwardly and feed directly into the dispensing troughs 15 when same are rotated into cigar-receiving position.

Referring now to one feature of the invention, the dispensing troughs 15 are provided with means for varying their internal shape and capacity to conform with the cross-sectional dimensions and shape of the particular cigar to be dispensed. Commercial grades of cigars vary greatly in cross-sectional dimensions and shapes and in order to make a vending machine practicable for handling a wide range of varieties of cigars we have designed novel means as aforesaid. Said means are designed and intended to permit a wide variation in the sizes and shapes of the cigars to be vended by any one of the dispensing troughs 15 while protecting any and all cigars from mutilation by pinching or rough handling in the dispensing process.

As embodied, the semi-circular solid portion 20 of the trough 15 is provided with an internally-disposed arcuate sleeve 50 which sleeve extends along a median portion of the length of the trough. Sleeve 50 is provided with a plurality of arcuate slots 51 through which it is attached to the solid portion 20 of the trough by set screws 52. As will be clear from Figs. 3 and 5, the sleeve 50 is variably positionable so as to extend across and occupy more or less of the gap 21 between the edges of the solid portion 20 of the trough, thereby varying the effective cigar-receiving gap of the trough within the ranges of diameters encountered in cigars of the different commercial sizes and shapes. Thus in the left hand trough 15 of Fig. 3 the sleeve 50 is set so as to provide nearly the widest opening for receiving relatively large round cigars, while in the right hand trough the opening is materially narrowed to receive the thinner cigars in the corresponding stack, while the central trough is shown with an intermediate setting. It will be noted that one side of the solid portion 20 of the trough is flattened at 20', thereby to provide a substantially vertical guide face for the downwardly moving cigars while the opposite portion of the sleeve 50 is correspondingly flattened at 54 but is further provided with an inturned arcuate lip 53 which conforms to the curvature of the circular part of the trough.

Means are also provided for varying the diametral capacity of the dispensing troughs 15 so as to further shape and size them to different brands of cigars. As shown, the solid portion of the trough is provided with a plurality of inwardly-disposed set screws 55, having relatively large flat heads. Said screws are preferably mounted to lie in the vertical plane when the trough is in either of its limit positions, so that when the trough is turned to the cigar-receiving position (on right of Fig. 3) the heads of said screws provide upstanding supports to space the cigar from the bottom of the trough. By this means a cigar may be caused to enter the trough only far enough to permit its clear rotary removal from the bottom of the magazine, while the next cigar of the column is prevented from sinking into the path of movement of the trough. In Fig. 3 the three troughs 15 are shown with the screws 55 at three different elevations.

Referring now to the improved magazine construction provided by our invention, same is designed to cooperate with a novel form of cigar package or container. The purpose of this feature of the invention is to provide support for the cigar container from and with respect to the magazine 36 without causing any obstruction to or interruption in the smooth downward flow of the cigars within the container. For this purpose the container itself is formed as a rectangular casing or carton of cardboard, the patterned blank for which is shown in Fig. 7 and the loaded carton formed therefrom in Fig. 8. One vertical side 60 and the two vertical edges 61 and 62 are formed from the larger blank A which has two abbreviated opposite side flaps 64 and 65. A relatively long and narrow blank B extends from the blank A and is creased to form the top 66, the opposite overlying side flap 67, the bottom 68 and the final rear side flap 69. Before the loaded carton is placed within a magazine, the bottom end 68 and a part of the side 67 are removed. For this purpose the box is perforated along the line 70, and may be cut along the bottom edge 71

to remove an angled piece 72 as shown in broken lines at the bottom of Fig. 8.

When the box of cigars is placed in position within one of the magazines 35, the side flap 67 is lifted and spaced so that it will lie outside the adjacent vertical wall 36, while the inturned flaps 64 and 65 lie within said wall. The lower edge 70 of the outer flap 67 is thus adapted to seat in a conforming bracket formed along the outer edge of the wall 36 by a flanged plate 75. Said plate 75 thereby supports the box structure from the outside of the magazine, holding it snugly against the magazine wall. At the same time the interior of the magazine and of the box are wholly smooth and unobstructed by any supporting structure so that the cigars lie as freely within them as they did before the box was placed in position in the magazine. For convenience in mounting the box within the magazine, the projecting tongue 76 of the flange 75 is angled away from the side wall 36 as shown.

In combination with the structure of the magazine 35, the invention provides novel means for displaying single cigars, which means also comprise a removable portion of the magazine to facilitate introduction of loaded boxes of cigars therewithin. As embodied, the ends 80 of the walls 36 of the magazine which project through slots in the supporting bracket 39, previously described, are adapted to receive between them a loosely suspended end plate 85. The upper end of said plate is widened at 86 to extend through conforming slots 87 in the magazine walls 36 and is further provided with forwardly projecting ears 88 which lie along the outer surface of said walls and hold the end plate 85 in position. The lower end of plate 85 lies flush with the outer surface of bracket plate 39. Thus the plate 85 may be readily lifted from and returned to the end closing position on the magazine. It also serves as a means of holding a display cigar C disposed vertically at the front end of the magazine and behind the window 6. Said cigar may be attached to the front surface of plate 85 by any suitable means such as a projecting prong 90.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What we claim is:

1. In a cigar-vending machine in combination a magazine for supporting a stack of cigars, a delivery station for cigars, means for removing a cigar from said stack and delivering it to said station, said means being variable in capacity to conform to cigars of different cross-sectional dimensions.

2. In a cigar-vending machine in combination a magazine for supporting a stack of cigars, a delivery station for cigars, means at the bottom of said stack for receiving the bottom cigar and delivering it to said station, and means for varying the depth of movement of said bottom cigar into said receiving means thereby to capacitate said receiving means for handling cigars of different cross-sectional dimensions.

3. In a cigar-vending machine in combination a magazine for supporting a stack of cigars, a delivery station for cigars, rotatable means at the bottom of said stack for receiving the bottom cigar and delivering it to said station, and means for varying the depth of movement of said bottom cigar into said receiving means thereby to capacitate said receiving means for handling cigars of different cross-sectional dimensions.

4. In a cigar-vending machine in combination a magazine for supporting a stack of cigars, a delivery station for cigars, a rotatable trough at the bottom of said stack movable to receive the bottom cigar and then to deliver it to said station, and means for varying the cross-sectional capacity of said trough to accommodate cigars of different cross-sectional dimensions.

5. In a cigar-vending machine in combination a magazine for supporting a stack of cigars, a delivery station for cigars, a rotatable trough at the bottom of said stack movable to receive the bottom cigar and then to deliver it to said station, and means for varying the effective width to said trough to accommodate cigars of different widths.

6. In a cigar-vending machine in combination a magazine for supporting a stack of cigars, a delivery station for cigars, a rotatable trough at the bottom of said stack movable to receive the bottom cigar and then to deliver it to said station, and means for varying the effective depth to said trough to accommodate cigars of different thicknesses.

7. In a cigar-vending machine in combination a magazine for supporting a stack of cigars, a delivery station for cigars, a rotatable trough at the bottom of said stack movable to receive the bottom cigar and then to deliver it to said station, and means for varying the effective width and depth to said trough to accommodate cigars of different cross-sectional areas.

8. In a cigar-vending machine in combination a magazine for supporting a stack of cigars, a delivery station for cigars, a rotatable trough at the bottom of said stack movable to receive the bottom cigar and then to deliver it to said station, and means for varying the cross-sectional capacity of said trough to accommodate cigars of different cross-sectional dimensions, said means comprising a member attached to the trough and variably positionable to change the width of the open mouth thereof.

9. In a cigar-vending machine in combination a magazine for supporting a stack of cigars, a delivery station for cigars, a rotatable trough at the bottom of said stack movable to receive the bottom cigar and then to deliver it to said station, and means for varying the cross-sectional capacity of said trough to accommodate cigars of different cross-sectional dimensions, said means comprising a member projecting from the bottom of the trough and variably positionable to change the effective depth theerof.

10. In a cigar-vending machine in combination a magazine for supporting a stack of cigars, a delivery station for cigars, a rotatable trough at the bottom of said stack movable to receive the bottom cigar and then to deliver it to said station, and means for varying the cross-sectional capacity of said trough to accommodate cigars of different cross-sectional dimensions, said means comprising a member attached to the trough and variably positionable to change the width of the open mouth thereof and a member projecting from the bottom of the trough and variably positionable to change the effective depth thereof.

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