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SINGLE COMPARTMENT SELECTIVE VENDING MACHINE

Filed April 27, 1936

2 Sheets-Sheet 1

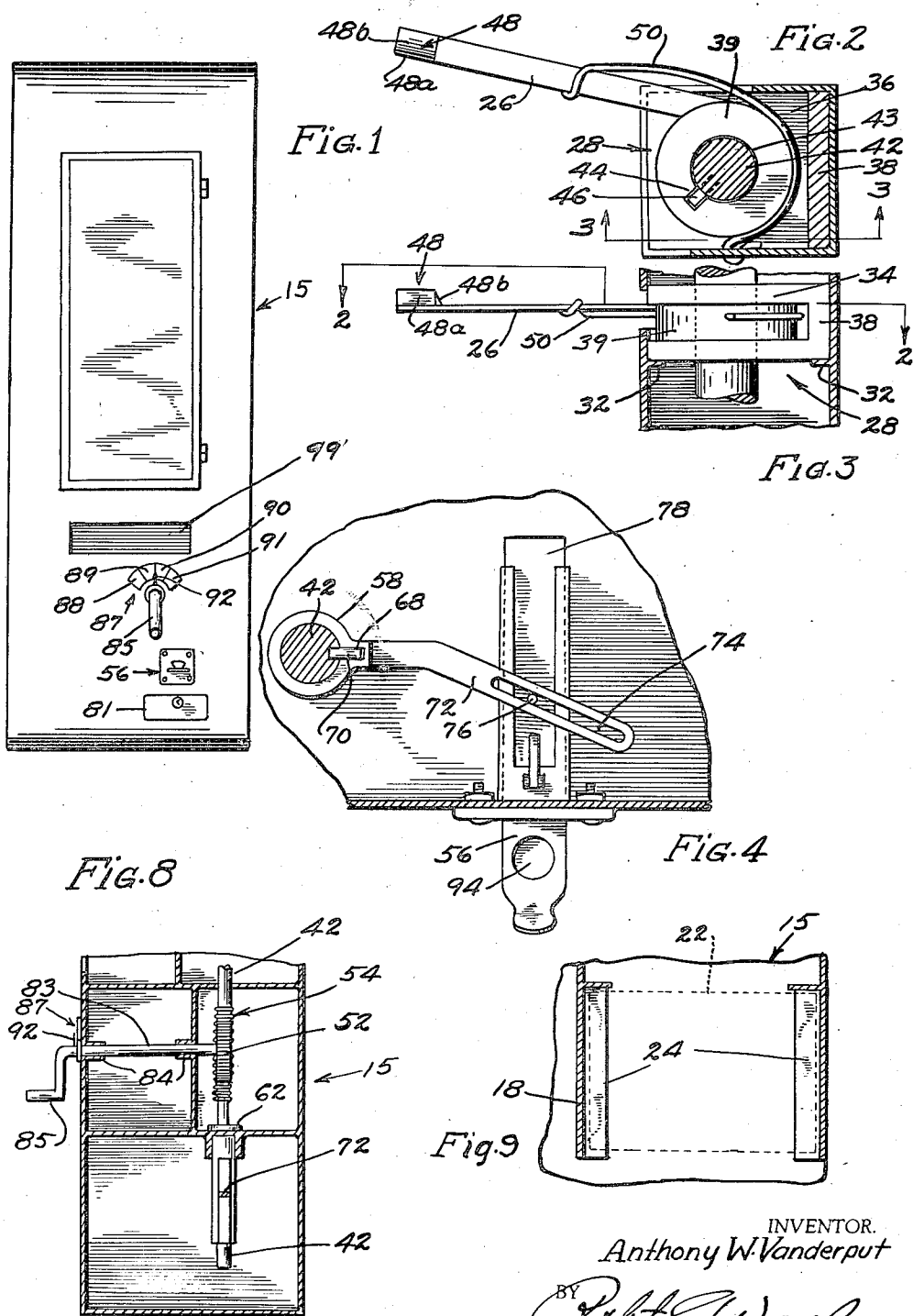


Fig. 3

Fig. 4

Fig. 8

Fig.9

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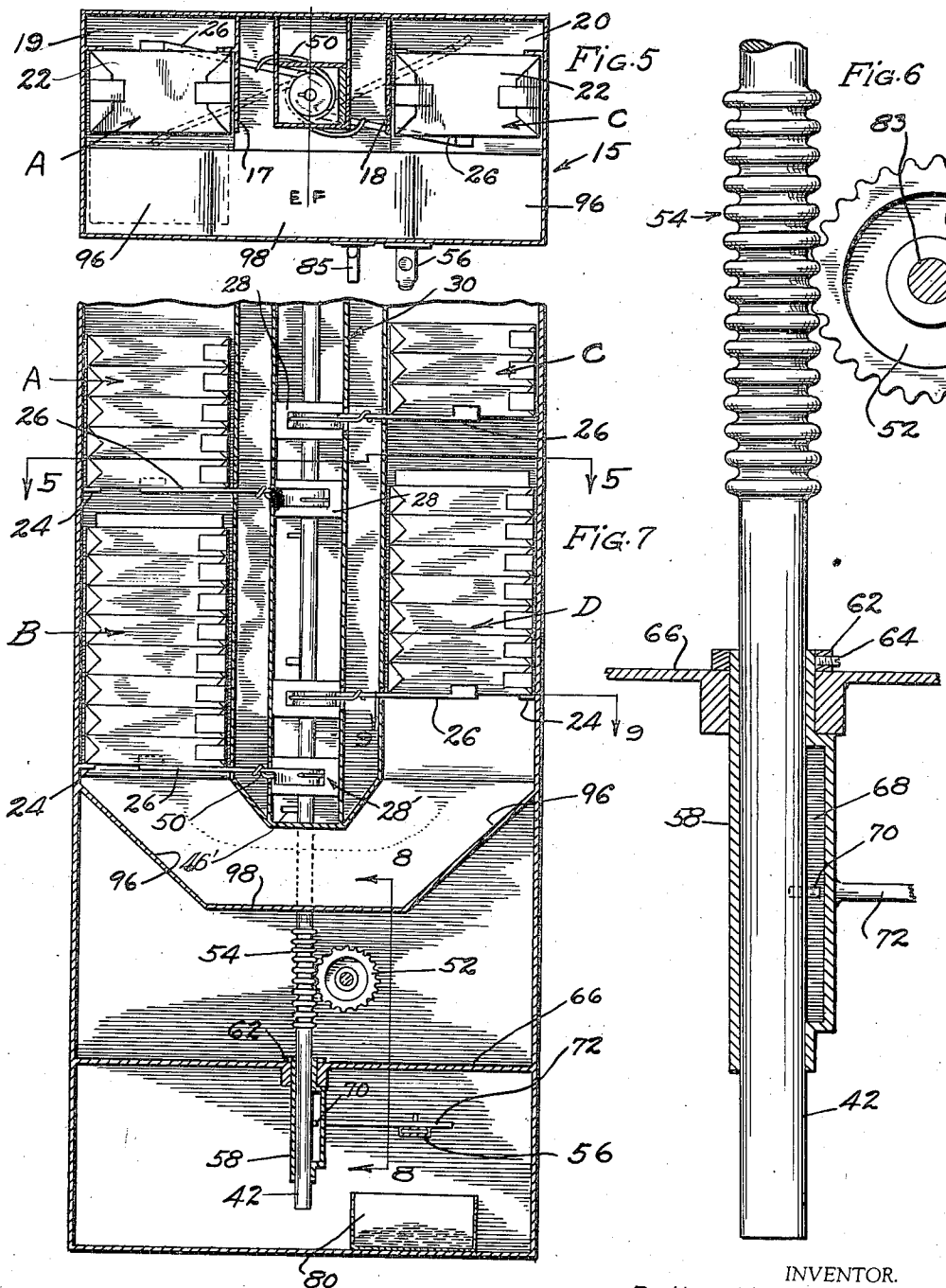
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2 Sheets-Sheet 2



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SINGLE COMPARTMENT SELECTIVE
VENDING MACHINE

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1 Claim. (Cl. 312—65)

As the title of this invention indicates, the present invention relates to vending machines, particular reference being made to that type of manually operated machine which is adapted to vend packaged goods, such as cigarettes, chewing gum, candy, etc., and for the purpose of illustration the drawings show simulated packages of cigarettes.

It is recognized that various and sundry machines are now on the market to vend merchandise of the type herein mentioned, but insofar as applicant has knowledge, none of the present machines operate on the basis of a single compartment and having means to select given merchandise from a stack or pile of a plural number of different brands or types of merchandise, but on the contrary are made up of a number of different compartments, each of which is provided with its own separate and complete operating mechanism, thus resulting in duplication of facilities, with concurrently increased expense, and the allotment of greater space to the location of the machine.

It is therefore a prime object of the present invention to provide in a vending machine, unitary means to select a given type of merchandise from a plural number of different types of merchandise, placed in groups, one above the other or grouped side by side.

Further objects of the invention are to construct a machine that is simple to operate, cheap to construct, reliable in operation and of minimum transverse section thereby occupying a very limited floor or counter space.

Other objects, features and advantages of the invention may appear from the accompanying drawings, the specification and the claims.

In reference to the drawings of which there are two sheets:

Figure 1 is a front elevation of the cabinet designed to house the device of this invention.

Figure 2 is a plan view, although partially in section, showing one of the selectors of this invention, taken on line 2—2, Fig. 3.

Figure 3 is a sectional view of the same, taken on line 3—3, Fig. 2.

Figure 4 is a view showing one form of coin-controlled selector arm throw means.

Figure 5 is a plan view in section taken on line 5—5, Fig. 7.

Figure 6 is a view showing the rack with its concentric teeth and its pinion gear which is adapted to lift the selector arm operating shaft.

Figure 7 is a sectional elevation showing the

relative position of the several operating elements in the device of this invention.

Figure 8 is a view partially in section taken on line 8—8, Fig. 7.

Figure 9 is a section taken on line 9—9, Fig. 7, showing the tabs or lips upon which the merchandise normally rests.

In the drawings the reference character 15 indicates a housing which is divided by partitions 17 and 18 into compartments 19 and 20, within which packages 22 may be placed.

Package groups A—B—C and D rest upon lips 24 which may be struck from the side walls of the compartments 19 and 20, or which may be otherwise secured thereto. A vertical compartment 30 placed equi-distant from the transverse center line E—F, and located between compartments 19 and 20 is adapted to receive and support selector arm units 28. The units 28 are shown in Figs. 2 and 3 as being square in transverse section to prevent rotation within compartment 30, and rest upon tabs 32 which may be punched from the side walls of compartment 30, or they may be otherwise secured to the inner faces of the compartment.

Each unit 28 comprises an upper block 34 which is integrally connected with a lower block 36 as by a web 38. A disc 39 is fitted between the spaced blocks 34 and 36, and is adapted to receive the selector shaft 42 within a centrally positioned opening 43, and which extends vertically through compartment 30. A slot 44 extends laterally from the openings 43 and is cut vertically through the depth of the discs 39, and are adapted to receive a pin or stud 46 from the plural number of studs 46 which are affixed to shaft 42.

The arm 26 is secured to the disc 39 by any convenient, practical or serviceable method, as by welding, and is provided with a cam 48, while a spring 50, one end of which is adapted to engage arm 26 while its opposite end is fulcrumed to compartment 30, is adapted to return the arm to normal position following each operation, as will be hereinafter described.

As shown in Fig. 7 there are a plural number of selector units 28, the number of which depends entirely upon the number of different brands or types of merchandise to be vended. Each of the above mentioned selector discs are provided with one of the studs 46 in companionship therewith, and in spaced relation thereto, and which is adapted to engage and fit within slot 44 when the shaft 42 is moved upwardly or downwardly in response to rotation of pinion gear 52 and rack 54.

The rack 54 is formed by cutting teeth concentrically around the shaft 42 so that regardless of the position assumed by the shaft in response to operation of coin-slide 56, the rack will always be in mesh with gear 52. This feature is quite essential as it enables studs 46 to be moved upwardly or downwardly to engage their respective slots 44 to effect union therewith to operate arm 26.

A sleeve 58, fitted over the lower end of shaft 42 is held in position about the shaft 42 by means of a collar 62 and a setscrew 64, and rotates with the shaft through its permissible degree of rotation.

The collar 62 rests upon a transverse structural member 66, which supports the weight of the sleeve and its associated elements.

As shown in Figs. 4 and 6 the sleeve 58 is provided with an elongated slot 68 within which a stud 70, secured to shaft 42 is adapted to move. A rock-arm 72 formed integrally with sleeve 58 provides means to translate the reciprocating motion of the coin-slide 56 into shaft rotational motion, for as shown in Fig. 4 the arm 72 is provided with a slot 74 within which a pin 76, secured to coin-slide plate 78 is adapted to move in response to motion of the plate 78.

A gear 52 is rotated by a crank 35 and a shaft 83 which is suitably journaled, as in bearings 84, thus enabling the operator of the machine to raise shaft 42 to the correct point at which a stud 46 will enter a slot 44 in a selected unit 28 whereby the same may be actuated to deliver merchandise.

Reference to Fig. 1 will show that a dial 87 is placed immediately above crank 85, and that it is divided, in this particular illustration, into four segments 88—89—90 and 91, and that an indicator 92 is secured to the crank, thus enabling an operator to turn the crank 85 and indicator 92 to the selected segment 88—89—90 or 91 which indicates the brand of merchandise desired by the operator. Such movement of the crank 85 raises or lowers shaft 42 and causes a selected stud, such as stud 46' to engage slot 44 in selector 28', after which it is only necessary to place a coin in coin-placement aperture 94 of coin-slide 56 and to then force plate 78 inwardly to obtain the desired merchandise, for stud 46' in slot 44 carries arm 26 through a given range or throw, thus causing the ejection of one of the packages from the group (B) from which delivery is desired.

After expulsion from its position, the package, dropping by gravity, falls upon the inclined surface 96 and slides to delivery point 98 which is accessible through opening 99 in the cabinet 15.

It is to be noted that it is the vertical face 48a of cam 48 which ejects the merchandise, and that after such operation, due to the urge of spring 50, cam face 48b slides under the remaining articles in the stack and returns to normal position as indicated by full lines in Fig. 5.

Rotation of shaft 42 is counter clock-wise to eject merchandise from either of the groups A—B—C or D. Arms 26, also rotate counter-clock-wise to eject merchandise from groups A and B, while their movement is clock-wise to eject merchandise from groups C and D, due to fact that spring 50 in compartments C and D is secured to the arm 26 and compartment 30 in a manner that is just the reverse of the mode of attachment of the spring in compartments A and B. In the instance of compartments A and B, the spring 50 returns the arm to normal position,

which is in the rear of the packages in compartments A and B, while in compartments C and D the spring 50 returns (during ejection) the arm to normal position which is in front of the merchandise in compartments C and D.

After ejection of merchandise from groups A or B, spring 50 returns the arm 26 to normal position, as indicated by full lines in Fig. 5; this action is just the reverse of that which takes place for the delivery of merchandise from compartments C and D, for in these compartments, normal position of arm 26 is in front of the merchandise, so that rotation of shaft 42 carries arm 26 to the position indicated in dotted lines. (See Fig. 5, compartment C.) Upon reaching this position the coin-slide 56 is released and spring 50 forces arm 26 to return to normal position, thereby ejecting one of the packages C or D.

The foregoing cycle of operation is typical of one machine operation. To repeat the selection of the same type of merchandise, it is only necessary to again operate the coin-chute 56, however if a different brand of merchandise is desired it is only necessary to move the dial indicator 92 to the segment which is indicative of the desired brand of merchandise, and to then operate the coin-slide in the manner previously described, whereupon the merchandise sought will be delivered to the opening 99 in the cabinet 15.

It is to be noted that each of the studs 46 is predeterminedly positioned on shaft 42 so as to selectively engage one of the discs 39. Provision has been made by virtue of the vertically cut slots 44, to permit the stud next to the disc to pass through the slot 44, if the shaft has been raised or lowered sufficiently to bring a second stud into alignment with a selected disc 38 and arm 26.

It will be found that this construction is very simple, yet it permits great flexibility in operation of the machine, for any one of the arms may or may not be used, as the operator desires.

Having thus described the preferred form of my invention, I wish it known that I do not limit myself to the specific form of construction herein shown, but claim as a part of this invention, all such colorable variation and modification of construction as clearly fall within the spirit of this invention.

I claim:

A vending machine comprising a cabinet, a pair of adjacent upright merchandise compartments in said cabinet, each divided into a plurality of magazines, a compartment positioned centrally of said merchandise compartments, a plurality of selector arm units fixed within said central compartment, one for each of said magazines, a shaft in said central compartment and extending through and rotatable within said selector units, a rack on said shaft and having annular teeth formed concentrically thereon, a manually operable gear in constant mesh with said rack, whereby said shaft may be raised or lowered, a plurality of pins positioned in different spaced relation than said selector arm units on said shaft, one for each selector arm unit, means in said selector arm units to receive said pins whereby one of said pins may be engaged with one of said selector units when said shaft is raised or lowered a predetermined distance and means to rotate said shaft and an arm in temporarily keyed relation to said shaft, whereby an article may be ejected from a preselected magazine.

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