

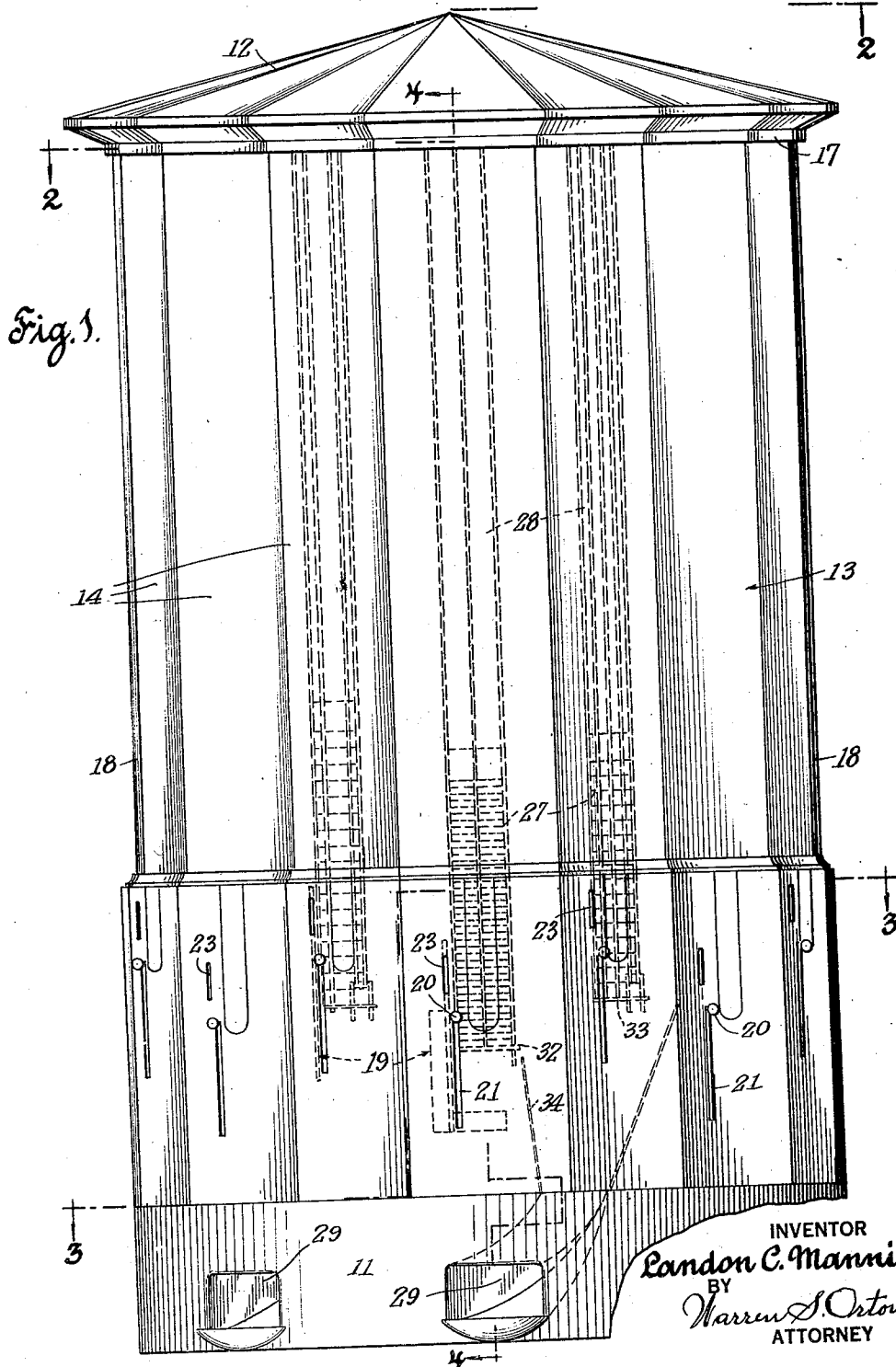
Oct. 2, 1928.

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L. C. MANNING
VENDING MACHINE CABINET

Filed Nov. 27, 1925

4 Sheets-Sheet 1



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Fig. 2.

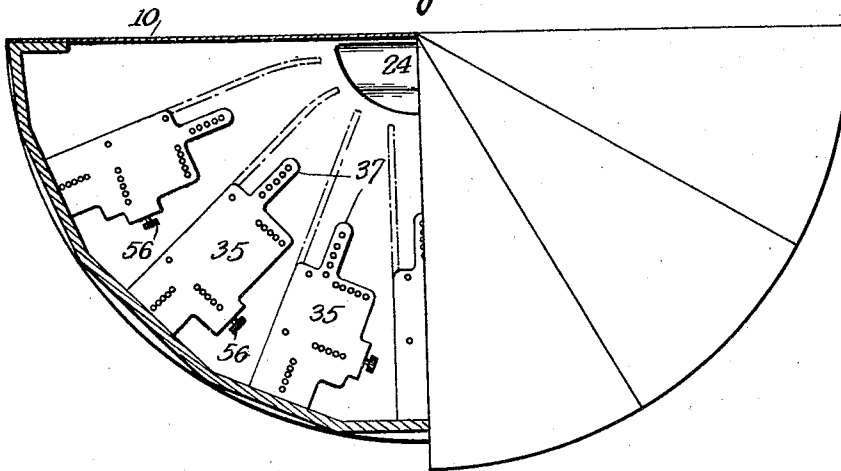
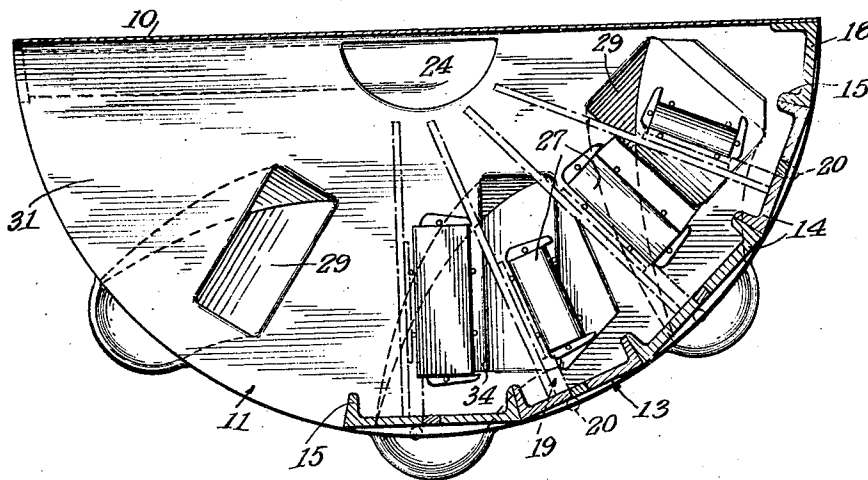


Fig. 3.



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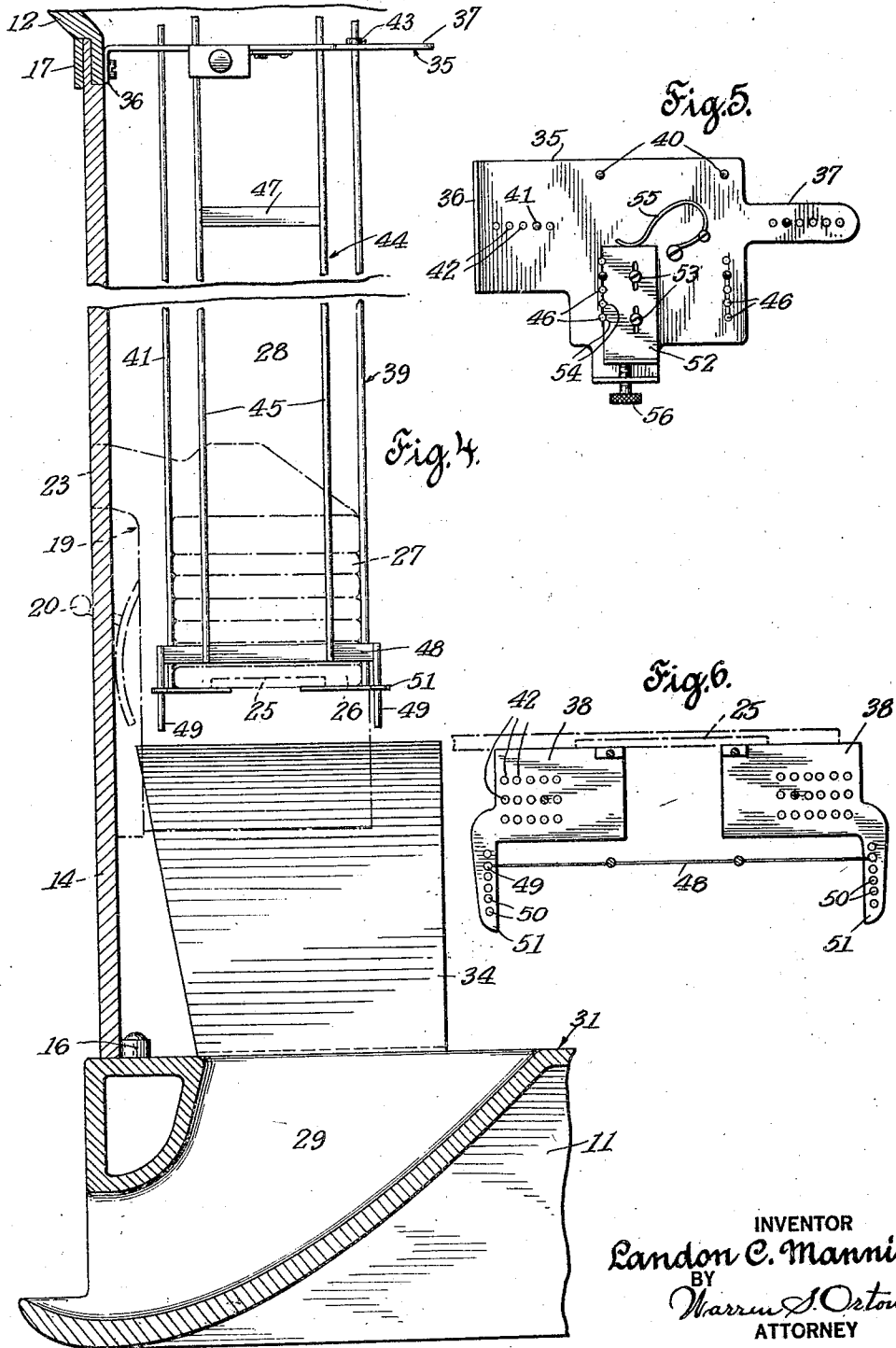
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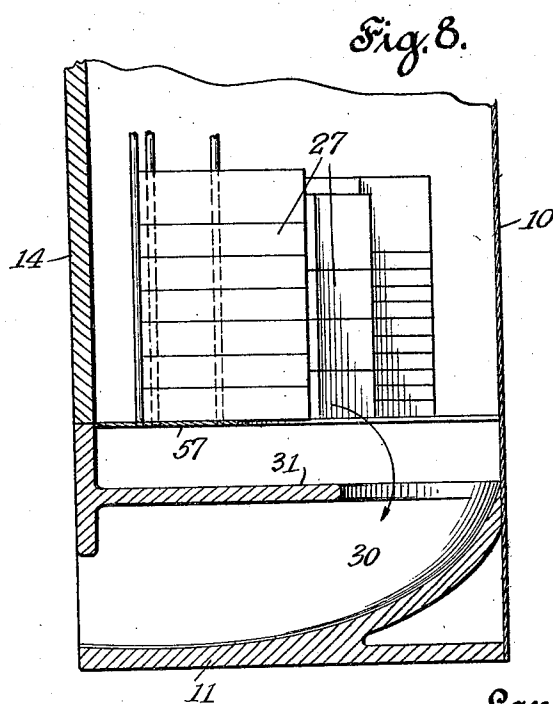
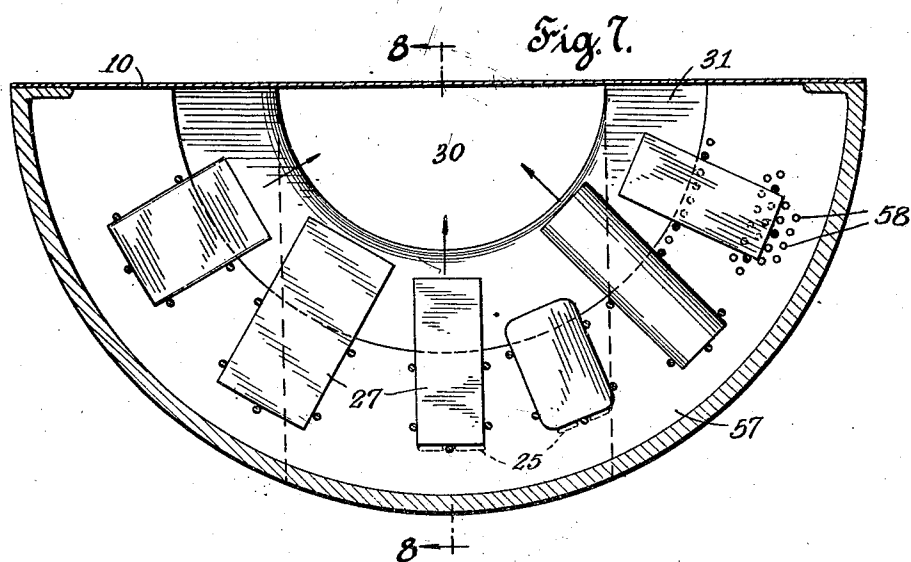
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4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE.

LONDON C. MANNING, OF NEW YORK, N. Y., ASSIGNOR TO PACK SHOPS, INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

VENDING-MACHINE CABINET.

Application filed November 27, 1925. Serial No. 71,599.

The invention relates in general to a coin controlled, manually actuated vending machine of the type intended for use in vending different articles of manufacture, and the invention specifically relates to the cabinet feature of such a machine and particularly to the arrangements of the package reservoirs in such cabinet, it being understood that the mechanical features are disclosed in a companion application entitled "Vending machines" filed November 5, 1925, Serial No. 66,906.

The primary object of the invention is to provide a simple, inexpensive form of cabinet and associated stator parts which can cooperate with the mechanism featured in the companion application to provide a vending machine particularly designed to supplement the selling service in department and other stores and thus facilitate the sale of standard articles of merchandise.

The vending device herein disclosed is intended to be utilized for the selling of various articles in package form, the size and configuration of which package must, of course, vary with the type of article to be vended. In attempting to maintain an automatic selling service it is required that the assortment of merchandise appropriated to any one particular machine be changed frequently to meet the current demands for certain groups of articles, and it not infrequently happens that the same article comes in different sizes or is put in different sized packages which vary from time to time.

Accordingly, therefore one of the objects of the invention is to provide a vending machine and particularly a vending machine cabinet for such a machine, which cabinet and its associated parts and contents may be modified readily in its package stacking or package reservoir features, or which can be made to accommodate, to receive, store and vend packages of variable sizes and in which the several adjustable parts can be readily changed from time to time, so as to accommodate the same to vend different size and configuration of packages.

It is a feature of vending machines of the type above outlined that they can be disposed in corners, in recesses, in between windows and doors, and in other space acceptable to the purchasing public but which is not otherwise valuable as store space. It has been found that a vending machine of the multiple

article type herein disclosed can be installed in such places provided they do not present sharp corners; are of a pleasing appearance which can be made to harmonize with the surrounding decoration and which can economically utilize all of the space allotted to it for vending purposes. A form which responds to these requirements is semi-circular or rather substantially semi-circular in horizontal cross-section and includes a main frame into which are fitted a plurality of vending units, one for vending each form of article. While such a form has the advantage in that the circular or substantially circular front provides the maximum frontage to the vending machine and in this way permits of the installation of a large number of vending units compared to the area within the cabinet, it has the disadvantage in that there is apt to be lost space between the stacked packages which are usually of rectangular form in plan and therefore cannot be made to occupy the entire non-rectangular form of the artistically ideal form of cabinet.

Accordingly, another object of the invention is to provide within a semi-circular form of cabinet such a disposition of the stacked articles to be vended together with their associated package ejecting mechanism, that all or as far as practical, all of the contained space is utilized and waste space is reduced to a minimum.

Still another object of the invention and featuring economy and simplicity in the construction of the main frame of the machine is the providing of package discharge chutes which will be conveniently disposed adjacent the ejecting mechanism actuating handle and which, at the same time, will in their aggregate be less than the total number of vending units contained in the machine.

This phase of the invention is effected by compromising the two requirements and providing one discharge chute for each pair of adjacent vending units and by arranging the stacks so that one large package reservoir and an adjacent small package reservoir are disposed to discharge their contents into one chute.

Various other objects and advantages of the invention will be in part obvious from an inspection of the accompanying drawings and in part will be more fully set forth in the following particular description of one form of mechanism embodying my invention, and

the invention also consists in certain new and novel features of construction and combination of parts hereinafter set forth and claimed.

5 In the accompanying drawings:—

Figure 1 is a view in front elevation of a vending machine illustrating a preferred embodiment of the invention with parts broken away and with hidden parts shown in
10 ghost outline;

Figures 2 and 3 are each horizontal sectional views taken respectively on the lines 2—2 and 3—3 of Figure 1 looking downwardly as indicated by the arrows;

15 Figure 4 is a vertical sectional view of the front portion of the package shown in Fig. 1 and taken on the line 4—4 of Fig. 1 looking in the direction indicated by the arrow;

Figure 5 is a plan view of the underside of
20 the apertured plate shown on side elevation in Fig. 4 and forming the top member of one of the reservoirs;

Figure 6 is a similar view of the bottom member of the reservoir;

25 Figure 7 is a view of a slightly modified form corresponding somewhat to the showing in Fig. 3 and in which the packages are ejected radially to the rear rather than circumferentially to the right as in the form
30 shown in Fig. 3; and

Figure 8 is a vertical transverse sectional view taken on the line 8—8 of Figure 7 looking in the direction indicated by the arrow.

Referring to the casing as a whole, it may
35 be regarded as made up of a flat, sheet metal rear back side 10, projecting forwardly from the lower end of which is a semi-circular, hollow casting 11, hereinafter referred to as
40 of which is a fanciful canopy constituting a roof 12. Fitted between the base and roof is a curved, substantially semi-circular front 13. This cabinet front is made up of a plurality of vertically extending flat panelled
45 fronts 14 which are assembled side by side and coact to give a pleasing, polygonal front to the cabinet when considered as a whole. The panels are preferably castings with their vertical sides flanged as indicated at 15, so as
50 to give transverse strength to the thin panel. These panels are each centrally fastened at their bottoms by fastening means 16 and have their upper edges fitted to the roof and are collectively secured at their upper edges by
55 means of a semi-circular strap 17.

For a reason hereinafter explained, the panels are manufactured in two standard widths and are alternately arranged. As the space adjacent the center of the rear wall 10
60 cannot conveniently be utilized to accommodate any vending units, the end panels 18 are made of the least possible width and are permanently secured to the rear wall and to the base. This structure tends to give rigid-
65 ity to the structure as a whole when the front

panels are omitted. Each panel, except the end panel 18, forms the forward end of a replaceable vending unit, it being understood that any unit which may become damaged, discolored or for any other reason becomes
70 unsuited for continued use, may be replaced as a whole simply by replacing the corresponding panel and the parts carried thereby. These parts include a manually actuated coin controlled package ejecting mechanism, indicated generally by the reference
75 character 19, one form of which is more fully described in the above identified co-pending application. This mechanism includes an actuating handle 20 which projects forward-
80 ly through a slot 21 in the panel and includes a coin passageway 22 designed to receive a coin inserted through a slot 23 in the panel. The several passageways 22 at their rear ends open into a coin chute 24. The mechanism
85 19 also comprises a coin controlled package ejecting mechanism which includes a package engaging ejecting bar or finger 25.

The ejector works to move the lowermost package 26 in a stack of packages 27 con-
90 tained in a reservoir 28 and the parts are so disposed and organized to permit the ejected package to fall into a package discharge chute 29 formed in the base 11. In the form of the invention illustrated in Figures
95 1, 2 and 3, three discharge chutes are disclosed, the two right chutes particularly shown in Fig. 3, receiving the discharge from two pairs of reservoirs and the left chute receiving the discharge from the three left
100 reservoirs, shown in outline at the left hand side of Figure 2. In the modified form shown in Fig. 7, the packages are ejected radially from front to rear in the direction indicated by the arrow into a centrally positioned discharge chute 30 which corresponds
105 to the coin receiving chute 24 so that, in the form shown in Fig. 7, one discharge chute acts for all of the vending units and leads downwardly and forwardly and opens
110 through the front of the base 11. In either case, it will be noted that the centrally positioned openings 24 or 30 together with the associated coin-controlled package ejecting mechanism utilizes practically all of the space
115 within the cabinet; and in this way the disclosure features economy in space disposition. By a judicious selection of long and short, and large and small packages there is accommodated within the cabinet either the
120 largest possible number of separate kinds of articles to be vended, or the vending of the largest number of large size packages. In either case the selected disposition provides for the accommodation of the largest ac-
125 cumulative area, horizontally, of packages to be vended. The openings 24 or 30 at the back of the floor 31, forming the top of the casing, utilizes the space at the center of the semi-circle and which central space would
130

otherwise be lost as storage space. This leaves the space in the cabinet in advance of the opening and between the same and the semi-circular front wall as a semi-annular space for containing the reservoirs and their associate package ejecting mechanism.

It is vitally necessary in vending machines of the type under discussion to utilize all possible available space. In the present instance the semi-annular space is especially adaptable for containing the vending units in that the semi-circular front gives the largest possible frontage compared to the enclosed space.

The reservoirs and their associated parts are arranged as close as is physically possible considered circumferentially of the casing due regard being had to the necessity of leaving sufficient clearance for the packages as they are discharged from the stacks in their respective reservoirs. When considered in horizontal plan, this is best attained by positioning a relatively short reservoir, measured radially, between two relatively long reservoirs, as suggested in the right hand side of Fig. 7, so that the short reservoir will substantially fill the triangular space formed by the two adjacent longer reservoirs. Economy in space disposition is also attained by vertically staggering the discharge outlets at the discharge end of the reservoirs as shown in dotted outline in Figure 1 so that the package discharge from the lowermost of a pair of stacks, as shown at 32, will be projected into the discharge passageway beneath the relatively raised stack, as shown in 33, Fig. 1. Where either or both of the reservoirs are spaced a material distance above the package discharge chute 29 in the base, it is suggested that one or more guide plates 34 be secured in position to receive the discharge packages and to guide the same through the lower portion of the cabinet and into the discharge chute in the base.

The reservoir for each unit includes a top member 35, particularly shown in Fig. 5, and which is substantially rectangular in plan having one end down-turned to form a fastening flange 36 and projecting from the opposite end is a finger 37 forming an extension for use when it is desired to form a particularly long reservoir. Positioned below the top member 35 is a bottom member 38 (see Fig. 6) which provides a support for the stack of packages and in the instant case is formed of two parts so as to permit the ejector number 25 to pass therebetween. The sides of the reservoir are defined by vertically extending rods 39 fitted between the top and bottom members. It is a feature of this disclosure that these rods may be adjusted relative to each other so as to form the reservoir of different sizes and of different configuration in horizontal cross-section. Two of the rods, 40, may be per-

manently secured to the top and bottom members and in this way fix one side of the reservoir leaving the other three sides adjustable. Opposite ends of the reservoir may in each instance be defined by single end rod 41 fitted in apertures 42 in both the top and bottom members. In each member of the apertures may be in a single line as shown at the right and left hand sides of Fig. 5 or may be arranged in a plurality of rows as shown at opposite sides of Fig. 6. These rods are secured in position either by their frictional fit in the apertures into which they extend or they may be more positively secured as by means of a ring lock 43.

The side of the reservoir opposite the fixed rods 40 is defined by a vertically adjustable frame 44 which includes two upstanding rods 45 slidably adjustable in two selected pairs of apertures 46 in the top member 35. These rods are connected intermediate their length by a brace plate 47 and at their lower ends by means of a gauge plate 48. The lower edge of this gauge defines the extent of opening from the stack and it is intended that this edge be spaced above the plane of the bottom member 38. From the extreme opposite ends of the gauge plate, a pair of pins 49 extend through apertures 50 formed in a pair of extensions 51 projecting forwardly from the bottom member 38 as more particularly shown in Figure 6. It is understood that the frame is adjusted as a whole, vertically, so as to permit the escape from the stack of the lowermost package but will be positioned in advance of the next to the lowermost package and in this way prevent the accidental ejection of any package, except the lowermost package, when acted upon by the functioning of the ejector 25.

The frame is locked in its vertically adjusted position by an easily adjusted fastener for securing the rods in any of their set positions. Referring particularly to Fig. 5 it is noted that this locking means is formed by a plate 52 slidably mounted by means of a pair of pin and slot connections 53 to the underside of the upper member 38. This plate is provided along one edge with semi-circular notches 54 for receiving one of the rods 45 irrespective of its different position in the apertures in the upper member. A spring 55 acts on the rear edge of the plate to move the same in one direction and a set screw 56 acts oppositely to the action of the spring so that when the rod is inserted in place and the screw tightened the rod and with it the gauge frame is set in its vertically adjusted position.

In the form of the invention shown in Fig. 7 it is suggested that instead of forming separate top and bottom members, one for each reservoir as suggested in the preferred form, a single semi-annular plate 57 be used to define the upper face of the base 11 and

that it be suitably apertured, as shown at 58, to receive the lower ends of the reservoir forming rods and that a similar plate, not shown, be secured to the roof 12 and correspondingly apertured to receive the upper ends of the reservoirs forming rods. Further, in the showing in Fig. 7, the member forming the bottom of the reservoirs is of less width considered radially than would be required to completely underlap the packages positioned thereon. It is a feature of both forms of the invention herein illustrated that the lowermost package projects for approximately half of its length in the direction in which it is projected beyond its support. It has been found in practice that a support of even less length can be used for the weight of the superposed packages tends to hold the lowermost package to its ledge-like seat and in this way the package ejecting mechanism need not travel the full length of the package in order to eject it. This arrangement permits a smaller ejecting mechanism and the minimizing of clearance for the ejected package as it is being freed from its stack. This arrangement permits of a much closer positioning of the units, as shown in the showing in Fig. 3, than would be the case if the clearance space beyond the stack had to be the same length, circumferentially, as the width of the ejected package. The front edge of the bottom member constitutes a discharge edge which, as shown in Fig. 4, is positioned below the gauge plate, and as shown in Fig. 6 is positioned within the plane of the gauge plate. The discharging edge of the lower member and the lower edge of the gauge plate co-act to provide an outlet for the lowermost package as it is ejected from the stack by the action of the ejecting mechanism. A side-wise, lateral or circumferential ejection of the packages as shown in Fig. 3 is indicated where the packages to be vended are relatively small or are somewhat square in plan while the endwise or radial ejection suggested in Fig. 7 is preferable where the packages are somewhat longer or otherwise where advantage can be taken of the space provided by the long radial dimensions of the cabinet. In this case, the long packages can be disposed somewhat towards the center of the cabinet leaving the space in advance of the stock and between the same and the front wall of the cabinet to contain the ejecting mechanism.

While I have shown and described, and have pointed out in the annexed claims, certain novel features of my invention, it will be understood that various omissions, substitution and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention.

Having thus described my invention, I claim:

1. In a vending machine, the combination of an upstanding cabinet substantially semi-circular in horizontal cross-section, a floor defining the bottom of the cabinet, said floor provided with a discharge opening located at the center of its semi-circular outline leaving the space above the floor and between the curved side of the cabinet and the vertically projected outline of the opening as a semi-annular space, a plurality of vertically extending package reservoirs each substantially rectangular in plane and disposed in radially disposed position in said semi-annular space and said reservoirs coacting substantially to fill the semi-annular space considered horizontally whereby a maximum number of reservoirs for containing rectangular packages may be contained within the outlines of a semi-circular vending machine.

2. In a vending machine, the combination of an upstanding cabinet substantially semi-circular in horizontal cross-section, a floor defining the bottom of the cabinet, said floor provided with a discharge opening located at the center of its semi-circular outline leaving the space above the floor and between the curved side of the cabinet and the vertically projected outline of the opening as a semi-annular space, a plurality of vertically extending package reservoirs substantially rectangular in plane of variable sizes and disposed in radially disposed position in said semi-annular space and said reservoirs coacting substantially to fill the semiannular space considered horizontally whereby a maximum number of reservoirs for containing rectangular packages of different dimensions in plan may be contained within the outlines of a semi-circular vending machine.

3. In a vending machine, the combination of an upstanding cabinet substantially semi-circular in horizontal cross-section, a floor defining the bottom of the cabinet, said floor provided with a discharge opening located at the center of its semi-circular outline leaving the space above the floor and between the curved side of the cabinet and the vertically projected outline of the opening as a semi-annular space, a plurality of vertically extending package reservoirs in said semi-annular space and said reservoirs coacting substantially to fill the semi-annular space considered horizontally whereby a maximum number of reservoirs for containing packages may be contained within the outlines of a semi-circular vending machine and a discharge chute leading from said central opening towards the curved front side of the cabinet.

4. In a vending machine, the combination of a cabinet having a front substantially semi-circular in horizontal cross-section, a plu-

ality of vertically disposed package reservoirs contained in said cabinet, a plurality of manually actuated package ejecting mechanisms contained in said cabinet, said reservoirs and mechanism disposed side by side adjacent the inner side of the curved front of the cabinet and disposed to extend radially of cabinet with their inner ends in juxtaposition and exposed towards the rear of the cabinet to leave a clear space in rear of all of the reservoirs thereby to utilize all the space possible within the cabinet adjacent the curved front and a plurality of package discharge chutes at the front of the cabinet, leading from the cabinet, certain of said chutes each having its receiving end operatively disposed to receive the packages ejected from a plurality of reservoirs whereby a single chute may be utilized to discharge the packages from more than one reservoir.

5. In a vending machine, the combination of a cabinet having a front substantially semi-circular in horizontal cross-section, a plurality of vertically disposed package reservoirs contained in said cabinet, a plurality of manually actuated package ejecting mechanisms contained in said cabinet, said reservoirs and mechanism disposed side by side adjacent the inner side of the curved front of the cabinet and radially disposed to utilize all the space possible within the cabinet adjacent the curved front, a plurality of package discharge chutes leading from the cabinet, one of said chutes disposed with its receiving end open to the discharge element of a plurality of reservoirs to receive the packages ejected therefrom whereby a single chute may be utilized to discharge the packages from more than one reservoir, and a single coin receiving chute disposed at the radial center of the cabinet and in rear of the reservoirs to receive the coins from all of the mechanisms in the cabinet.

6. In a vending machine, the combination of a cabinet substantially semi-circular in horizontal cross-section and having a flat vertically extending rear wall, a plurality of package reservoirs disposed in the cabinet adjacent the inner side of the front, said reservoirs in plan each extending with its greatest dimensions radially of the cabinet, three of said reservoirs being disposed side by side with the intermediate reservoir constituting a relatively short reservoir disposed in the angle formed by the two adjacent reservoirs which are relatively longer than the intermediate reservoir.

7. In a vending machine, the combination of a cabinet substantially semi-circular in horizontal cross-section, three package reservoirs disposed in the cabinet adjacent the inner side of the front, said reservoirs in plan each extending with its greatest dimensions radially of the cabinet and comprising a relatively short reservoir disposed in the

angle formed by the two adjacent relatively longer reservoirs whereby the front ends of each reservoir will be facing its proportion of the semi-circular front, a single package discharge chute for receiving the discharged package from the short reservoir and from one of its adjacent relatively long reservoirs and a coin chute at the center of the semi-circle for receiving the coins introduced into the cabinet.

8. In a vending machine, the combination of a cabinet provided with a group consisting of an even number of package reservoirs and associated mechanism for ejecting the packages therefrom, said reservoirs being radially disposed relative to a common point and arranged in a semi-circle, means providing a plurality of package discharge chutes being one half of the number of reservoirs in said group, each chute being open to receive the packages discharged from the two reservoirs disposed above the same.

9. In a vending machine, the combination of a cabinet provided in one portion thereof with an even number of package reservoirs and associated mechanism for ejecting the packages therefrom, means providing a plurality of package discharge chutes being one half of the number of reservoirs in said portion, each chute being open to receive the packages discharged from the two reservoirs disposed above the same and a single chute for receiving the coins passed through all of the mechanism in the cabinet.

10. In a vending machine, the combination of two package containing reservoirs, each provided with a package discharging opening at its bottom, the bottom of one of the reservoirs being vertically spaced above the level of the bottom of the other reservoir thereby to provide a space beneath the higher reservoir for receiving packages ejected from the lower reservoir.

11. In a vending machine, the combination of two package containing reservoirs, each provided with a package discharging opening at its bottom, the bottom of one of the reservoirs being vertically spaced above the level of the bottom of the other reservoir thereby to provide a space beneath the higher reservoir for receiving packages ejected from the lower reservoir and a single package discharge chute for receiving the packages discharged from both reservoirs.

12. In a vending machine, the combination of a base substantially semi-circular in plan, and provided at the center of the chord defining the straight side with a discharge opening leaving an arcuate space between the curved side of the base and the discharge opening, a plurality of units each including a vertically extending package reservoir contained in the space within the vertically projected outlines of said arcuate space.

13. In a vending machine, the combination

of a plurality of units arranged side by side and radially disposed relative to a center, means providing a discharge chute with its receiving end at said center and each of said units provided with a discharge opening into said receiving end of the chute.

14. In a vending machine, the combination of a plurality of package reservoirs disposed side by side in a semi-circle, radially disposed relative to a center, and with each reservoir spaced from said center, the space between said center and the adjacent ends of the reservoirs being free to form a clear passageway outlined on one side by the circle of reservoirs.

15. In a vending machine, the combination of a plurality of vertically extending package reservoirs each having a front and a rear side, said reservoirs in horizontal cross section collectively having more than two configurations, said reservoirs arranged with their front sides disposed substantially on the arc of a circle, a discharge opening adjacent the rear ends of the reservoirs and contained within the sector formed by the reservoirs, said reservoirs and discharge opening utilizing substantially all of the space within said sector.

16. In a vending machine, the combination of a plurality of vertically extending package reservoirs positioned side by side, each of said reservoirs provided at its lower end with a discharge outlet, the discharge outlets of adjacent reservoirs being vertically staggered so that the package discharged from the lowermost of a pair of reservoirs can be projected beneath the other relatively raised next adjacent reservoir.

17. In a vending machine, the combination of a plurality of vertically extending package reservoirs positioned side by side, each of said reservoirs provided at its lower end with a discharge outlet, the discharge outlets of adjacent reservoirs being vertically staggered so that the package discharged from the lowermost of a pair of reservoirs can be projected beneath the other relatively raised next adjacent reservoir and a discharge chute below the relatively raised reservoir to receive the packages discharged from both of said pair of reservoirs.

Signed at New York, in the county of New York and State of New York this 17th day of Nov., A. D., 1925.

LONDON C. MANNING.