

June 11, 1935.

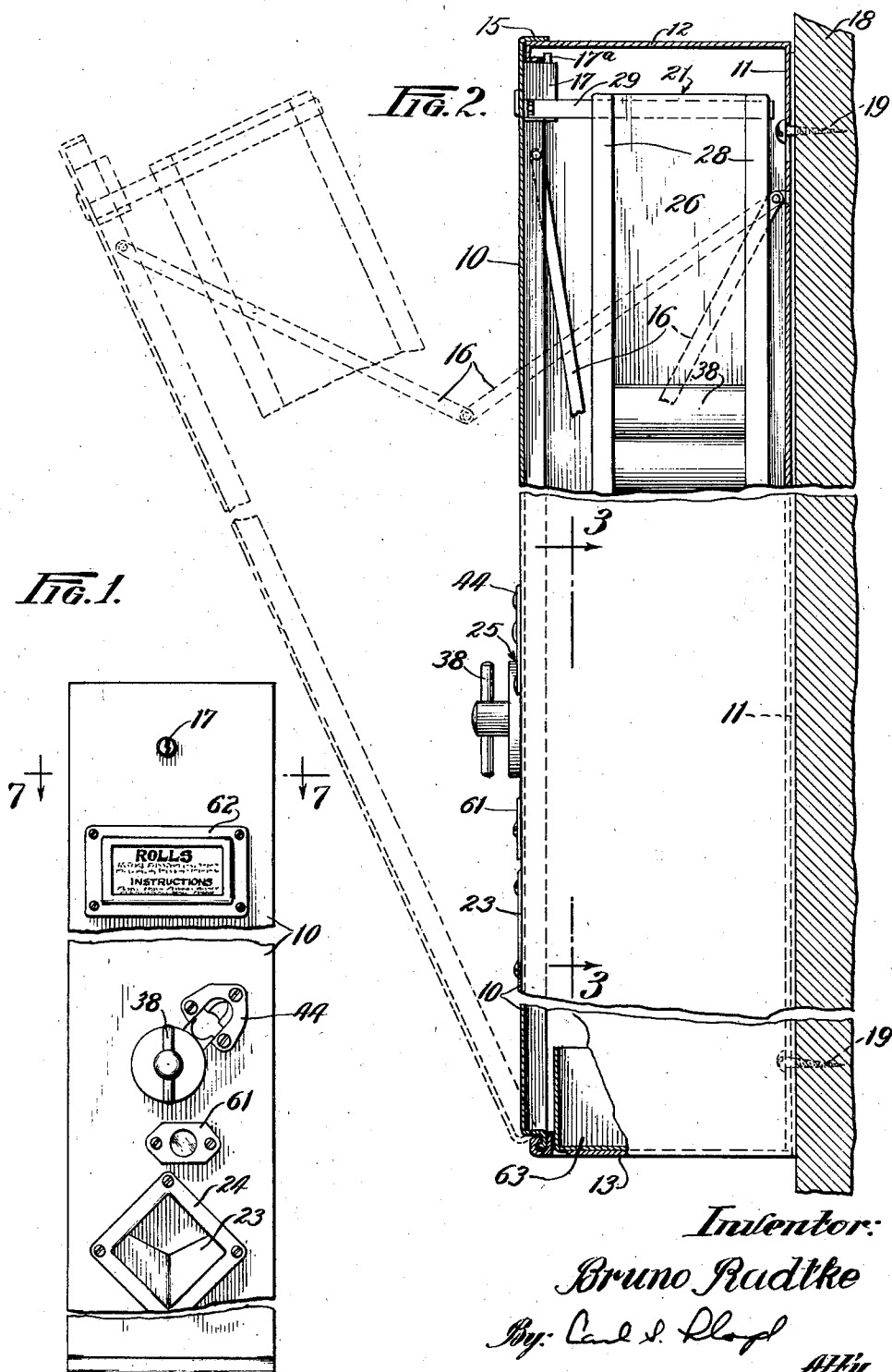
B. RADTKE

2,004,418

VENDING MACHINE

Filed Feb. 16, 1931.

4 Sheets-Sheet 1



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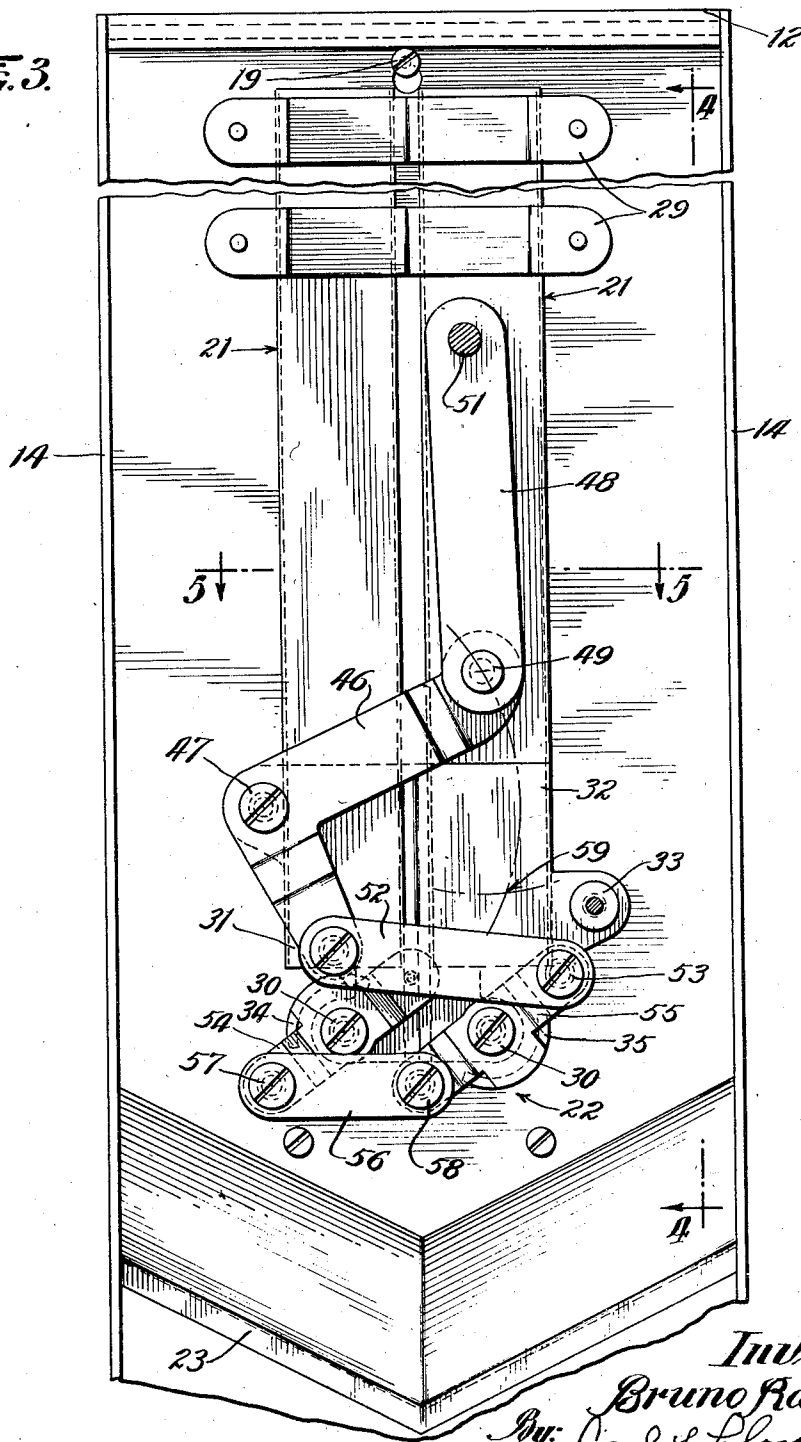
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FIG. 3.



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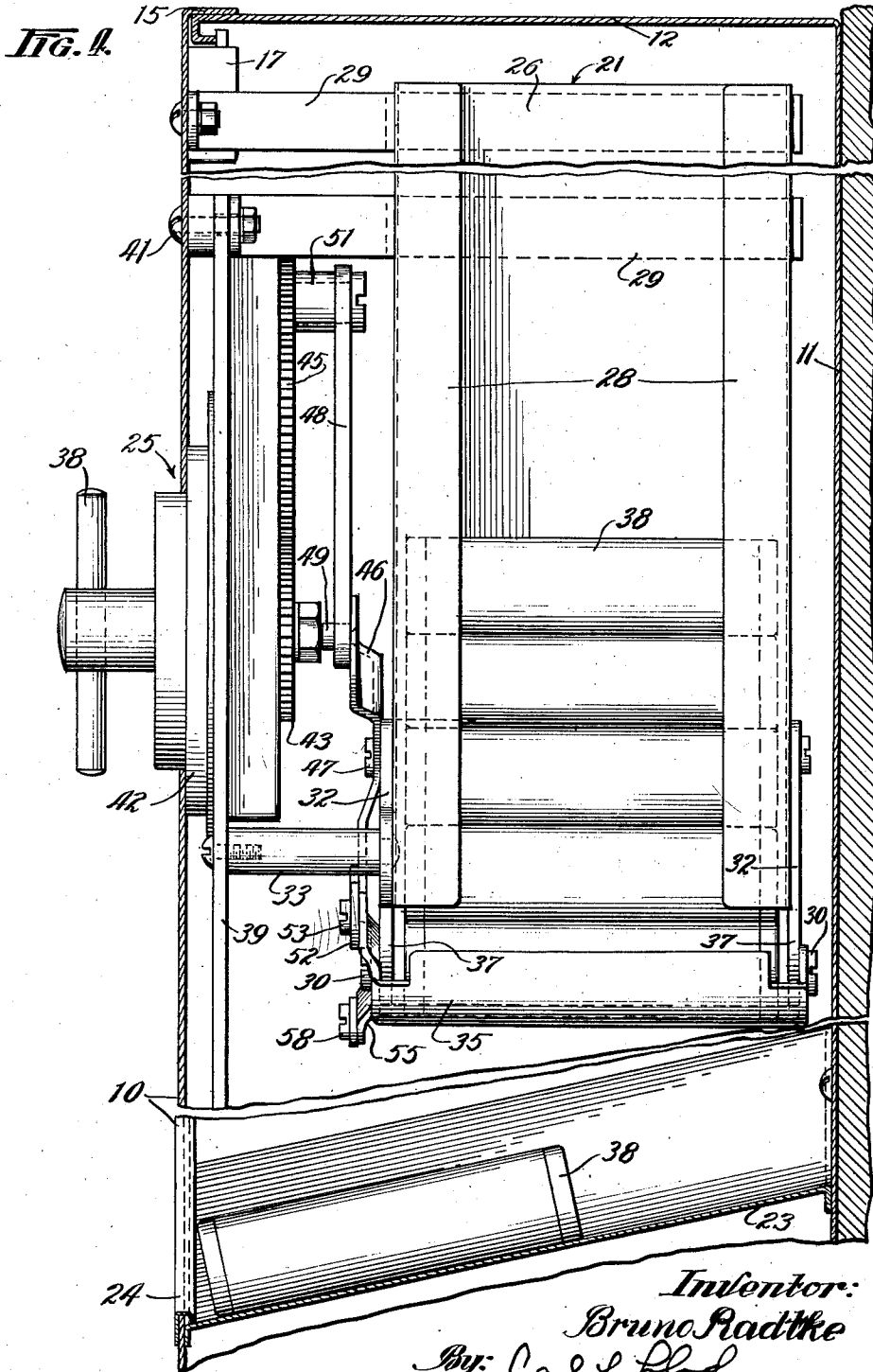
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FIG. 5.

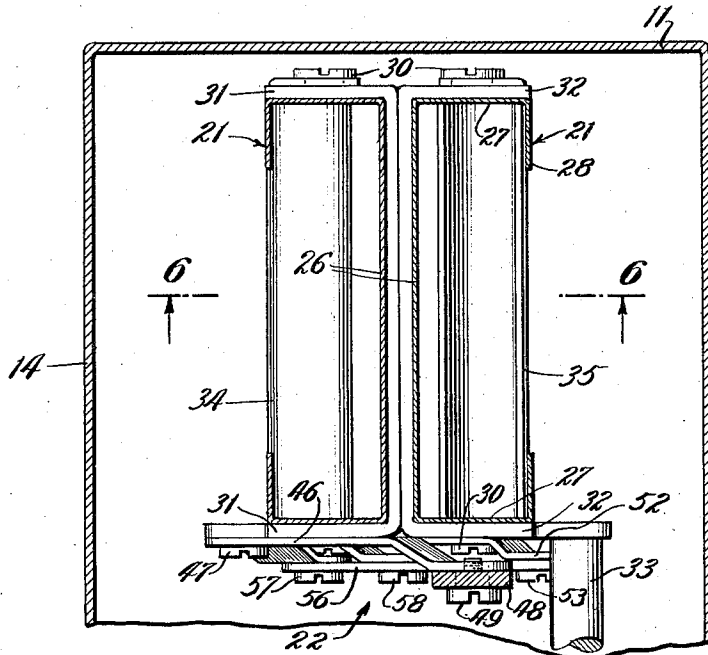


FIG. 6.

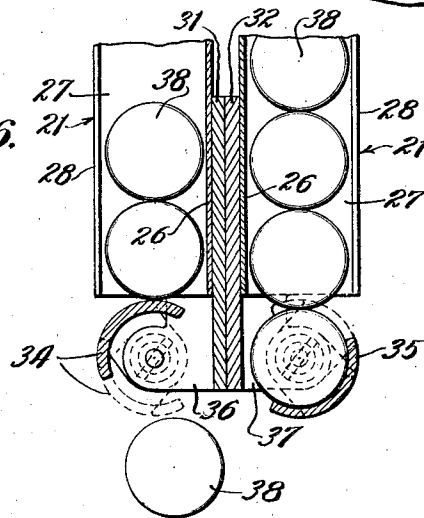
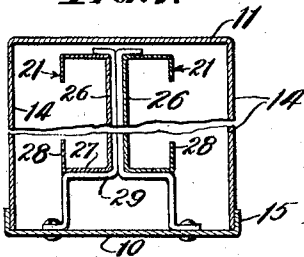


FIG. 7.



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UNITED STATES PATENT OFFICE

2,004,418

VENDING MACHINE

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Application February 16, 1931, Serial No. 516,113

3 Claims. (Cl. 312—48)

This invention relates to vending machines and particularly to a machine of this class which is adapted to the sale of cylindrical or roll-shaped packages, such as mint rolls and the like.

5 An object of the invention is to provide in a machine of this class an improved type of vending mechanism which is particularly well adapted to the delivery of roll-shaped packages.

10 Another object of the invention is to provide a housing structure for the vending mechanism which may be opened in such a manner as to facilitate re-filling of the machine and the removal of coins deposited therein.

15 Further objects and advantages of the invention will be apparent as I proceed with my specification, which, taken in conjunction with the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

20 Fig. 1 is a broken front view of the vending machine;

Fig. 2 is a side elevational view of the machine, parts of the housing being broken away to show the internal structure;

25 Fig. 3 is a section showing the vending mechanism, the section being taken on the line 3—3 of Fig. 2;

Fig. 4 is a section showing the vending mechanism and the coin control means for operating the vending mechanism, the section being taken on the line 4—4 of Fig. 3;

Fig. 5 is a horizontal section through the lower portion of the vending mechanism taken on the line 5—5 of Fig. 3;

35 Fig. 6 is a broken section showing the lower end of the magazine holders, the section being taken on the line 6—6 of Fig. 5; and

Fig. 7 is a horizontal section taken on the line 7—7 of Fig. 1.

40 Referring particularly to Figs. 1—3 of the drawings, the vending mechanism is contained within a housing consisting of a front cover plate 10, a back plate 11, the opposite ends of which are bent outwardly to form a top wall 12 and a bottom wall 13, and side walls 14, which, together with the front cover plate 10 and the back plate 11, form a box-shaped container for holding the vending mechanism. The front cover plate 10 is hingedly connected to the bottom wall 13, the adjacent edges of the cover plate and bottom wall being crimped as shown in Fig. 2 to form an interlocking hinge connection. The top and side edges of the cover plate 10 are bent inwardly as indicated at 15 to provide marginal edges for lapping the corresponding edges of the top wall 12 and the

side walls 14. A pair of strap links 16, extending between points of connection with the back plate 11 and a marginal edge of the cover plate 10, limits the amount of opening swing permitted of said cover plate. A lock 17 is attached to the upper end of the cover plate 10 and is provided with a bolt 17^a which engages the outer marginal edge of the top wall 12 to hold the cover plate in closed position. The housing is attached to a suitable supporting panel 18 by means of screws 19 which extend through the back plate 11 into the body of the panel. The entire housing may be stamped from sheet metal, the side walls 14 being secured to the walls 11, 12, and 13 by welding or by suitable bolt connections.

15 Referring particularly to Figs. 2—5, the vending mechanism in the embodiment shown comprises: a pair of vertically disposed magazine holders 21 which serve as storage chambers for the mint rolls; a mint delivery mechanism located at the bottom of the holders 21 and designated generally by the numeral 22; and a discharge chute 23 for guiding the rolls from the delivery mechanism to a discharge port 24 in the cover plate 10. As hereinafter explained, the vending mechanism is operated by a coin device 25 carried on the cover plate 10 and operatively connected with the delivery mechanism 22.

20 Referring to Figs. 5 and 7, the magazine holders 21 are channel-shaped and include back walls 26, side walls 27, and flanges 28 which are bent inwardly from the opposite side walls 27. The holders are open at each end and are supported at their upper ends by bracket arms 29 carried by the cover plate 10, and at their lower ends by U-shaped bracket plates 31 and 32, which extend between the holders and engage the opposite side walls to hold them in parallel spaced-apart relation. The plates 31 and 32 may be joined together and supported as a single unit on the cover plate 10 by a spacer 33 (Fig. 4). The magazine holders are thus rigidly supported on the cover plate 10 and are free to swing with the plate into the open position indicated by the dotted lines in Fig. 2. In this position the machine may be easily re-filled by introducing additional rolls into the upper open ends of the holders.

45 Referring particularly to Figs. 3—6, the delivery mechanism 22, which is designed to deliver mint rolls alternately first from one and then from the other of the holders 21, consists of a pair of part-cylindrical cups 34 and 35 which are pivotally supported in horizontal position below the magazine holders 21 by means of shoulder screws

30, carried by lugs 36 and 37, which are struck from the body portion of the bracket plates 31 and 32, respectively. The cups 34 and 35 are positioned so that the open face of one is displaced approximately 180 degrees from that of the other, and, as will presently appear, are arranged to be alternately turned to separate a mint roll 38 first from one and then from the other of the stacks of rolls in the holders 21.

Referring to Figs. 3 and 4, the oscillation of the cups 34 and 35 is effected by the coin control means indicated generally by the numeral 25. This mechanism is here shown only generally, it being shown in detail in my co-pending application, Serial No. 516,056 filed February 16, 1931 which has eventuated into U. S. Letters Patent 1,869,616 of Aug. 2, 1932. The mechanism 25 includes an operating handle 38 which projects from the cover plate 10, a plate 39 secured by bolts 41 to the cover plate 10, and a coin-detecting magazine 42 supported on the plate 39. A spur gear 43 turns with the handle 38 on the introduction of a proper coin in a coin slot 44, and a second spur gear 45, supported on the plate 39, meshes with the gear 43 and is arranged to make a half turn for each complete revolution of the handle 38 and gear 43. The gear 45 is operatively connected with the cups 34 and 35 through a bell crank lever 46, which is pivoted at 47 to a lug on the bracket plate 31, and a link 48 connected at one end to a pin 49 carried by the long arm of the lever 46 and at the other end to a stud 51 mounted eccentrically on the gear 45. The short arm of the bell crank lever 46 connects with a link 52, which, in turn, is connected at 53 to one of a pair of arms 54 and 55 carried by the cups 34 and 35, respectively. A link 56 is connected at 57 to the arm 54 and at 58 to the arm 55.

Referring to Figs. 3 and 6, it will be apparent that as the spur gear 45 is operated by turning of the handle 38 the lever 48 will move downwardly until the point of pivotal connection 49 has shifted to the point 59. During this cycle of movement, which is effected by one complete turn of the coin-controlled handle 38, the cups 34 and 35 will be turned from the position shown by the solid lines in Figs. 3 and 6 to the position shown by the dotted lines in Fig. 6, causing the cup 35 to discharge a mint roll 38 and at the same time turning the cup 34 to receive a mint roll 38 from the adjacent magazine 21. Upon an additional revolution of the handle 38 the lever 48 will be raised to again assume the position shown in Fig. 3, during which interval the cup 34 will discharge a mint roll 38 and the cup 35 will be turned to receive another mint roll. Each of the cups thus completes a cycle of receiving and discharging a roll from its corresponding holder for two successive coin actuations of the machine. The discharged rolls fall into the chute 23, from which they may be removed from the opening 24 in the cover plate 10.

The front cover plate 10 may be provided with a window 61 for viewing the coin which has been used in the last preceding operation of the machine, and the plate may also be provided with a metal frame 62 for holding a card giving directions for the operation of the machine. Coins which have been accepted for the purchase of the mint rolls are collected in a container 63 which rests on the bottom wall 13 of the housing.

The construction embodying the feature of the hingedly-mounted cover plate, having the vending mechanism mounted thereon, is exceedingly practical inasmuch as it greatly facilitates the

re-filling of the machine and the removal of coins which have been deposited in the purchase of the mints. This feature also permits of the mounting of the housing by means of screws inserted through the back plate which are protected against removal after the cover has been closed. The delivery mechanism is always positive in its action and is of a type capable of severe and extended use without danger of jamming or breaking.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art.

What I regard as new and desire to secure by Letters Patent is:

1. In a machine for vending mint rolls and the like, a vending apparatus comprising: a container for holding a supply of the rolls, the lower end of said container being provided with a pair of openings affording discharge ports for the rolls; and delivery mechanism for alternately discharging a roll from one and then from the other of said ports upon successive operations of the machine, said delivery mechanism including a pair of part-cylindrical cup members positioned adjacent the lower end of said container and in alignment with said discharge ports, said members being arranged so that the openings therein are disposed in opposite positions relative to one another, whereby one member of the pair is positioned in roll-receiving position while the other member is positioned in roll-discharging position, and means for oscillating said cup members about their longitudinal axes, said last mentioned means including a manually rotatable shaft, a bell crank lever having one arm operatively connected with said shaft, means providing operative connection between the other arm of said lever and one of said cup members, and a strap connector extending between said cup members for interconnecting the latter whereby to produce simultaneous oscillations thereof upon the rotation of said shaft.

2. In a machine for vending mint rolls and the like, a vending apparatus comprising: a pair of vertically disposed holders for storing a supply of the rolls, the lower ends of said holders being provided with openings affording discharge ports for the rolls, said holders being arranged in back-to-back relation and the openings therein being disposed in parallel relation to one another; and delivery mechanism for alternately discharging a roll from one and then from the other of said ports upon successive operations of the machine, said delivery mechanism including a pair of part-cylindrical cup members positioned adjacent the lower ends of said holders and in alignment with said discharge ports, said members being arranged so that the openings therein are disposed in opposite positions relative to one another, whereby one member of the pair is positioned in roll-receiving position while the other member is positioned in roll-discharging position, and means for oscillating said cup members about their longitudinal axes, said last mentioned means including a manually rotatable shaft, a bell crank lever having one arm operatively connected with said shaft, means providing operative connection between the other arm of said lever and one of said cup members, and a strap connector extending between said cup members for interconnecting the latter whereby to produce simultaneous

oscillations thereof upon the rotation of said shaft.

3. In a machine for vending mint rolls and the like, in combination: a vending apparatus comprising a container for holding a supply of the rolls, the lower end of said container being provided with a pair of openings affording discharge ports for the rolls; and delivery mechanism for discharging the rolls from said container, said mechanism including a pair of part-cylindrical cup members positioned adjacent the lower end of said container and in alignment with said discharge ports, said members being arranged so that the openings therein are disposed in opposite positions relative to one another whereby one member of the pair is positioned in roll-receiving position while the other member is positioned in

roll-discharging position; and means for simultaneously oscillating said cup members to alternately discharge a roll from one and then from the other of said ports upon successive operations of the machine, said means comprising, a manually rotatable shaft, a gear wheel mounted to turn with said shaft, a second gear wheel in mesh with said first gear wheel, and a crank arm affording operative connection between said second wheel and the oscillating cup members, the ratio of said wheels being such as to produce a half revolution of the second wheel for each complete revolution of the first wheel, thereby producing one oscillation of said cup members for each complete revolution of said shaft.

BRUNO RADTKE.