June 2, 1925. 1,540,715

J. RIIKONEN

VENDING MACHINE

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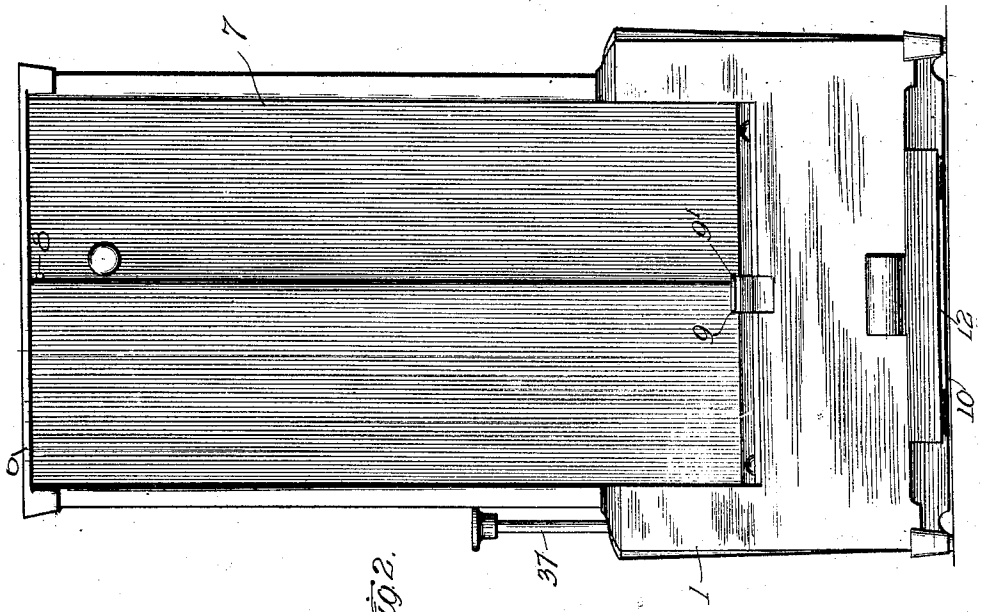


Fig 2.

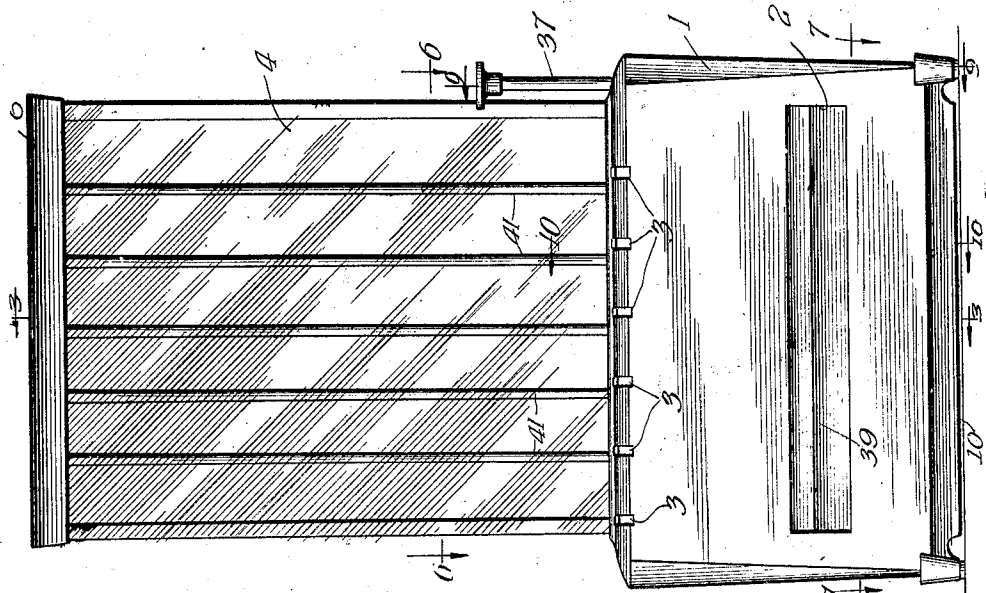


Fig 1.

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By Hill & Hill Attys

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Fig. 3

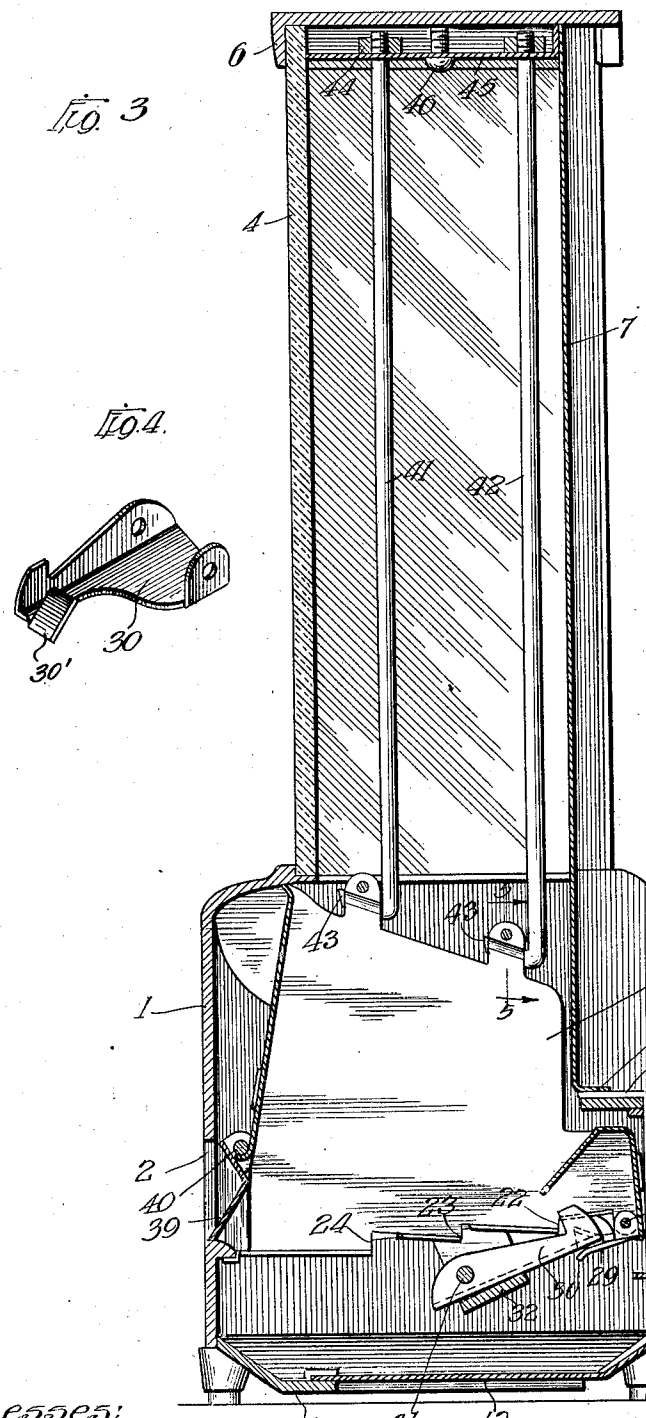
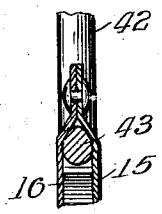


Fig. 4.

Fig. 5.



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Fig. 6.

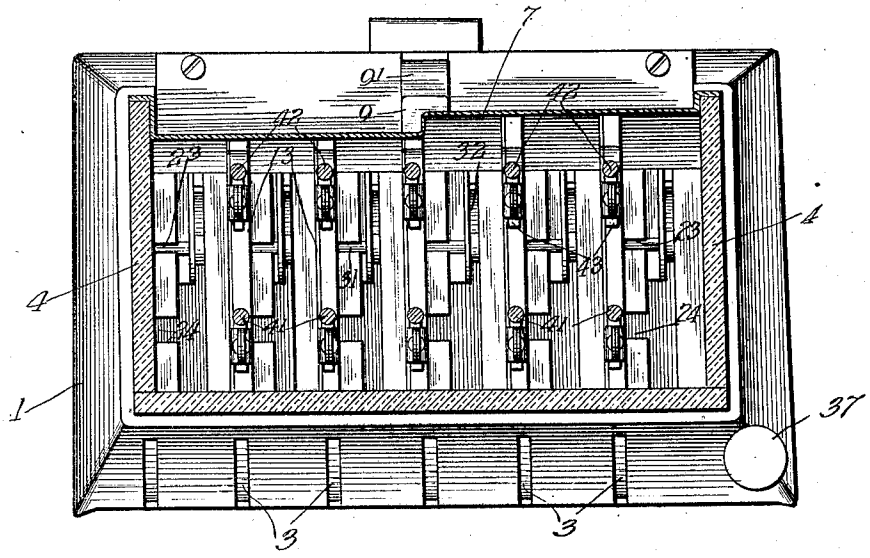
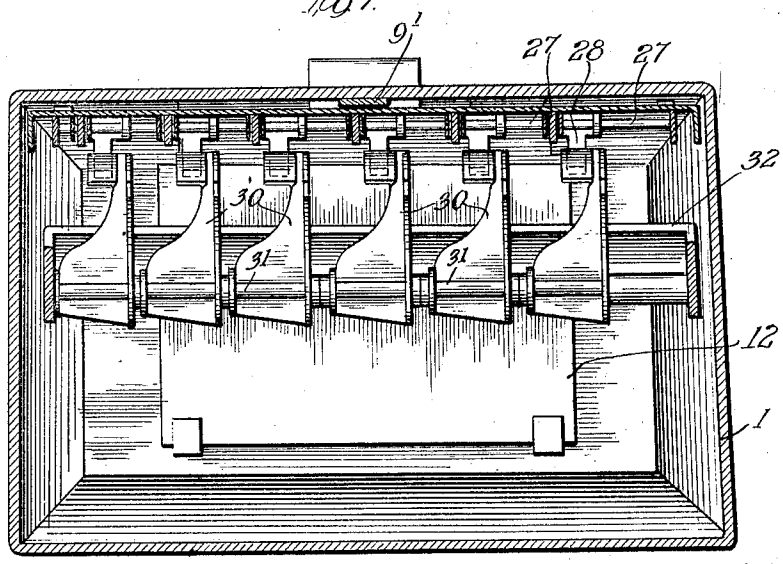


Fig. 7.



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J. RIIKONEN

VENDING MACHINE

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Fig 8.

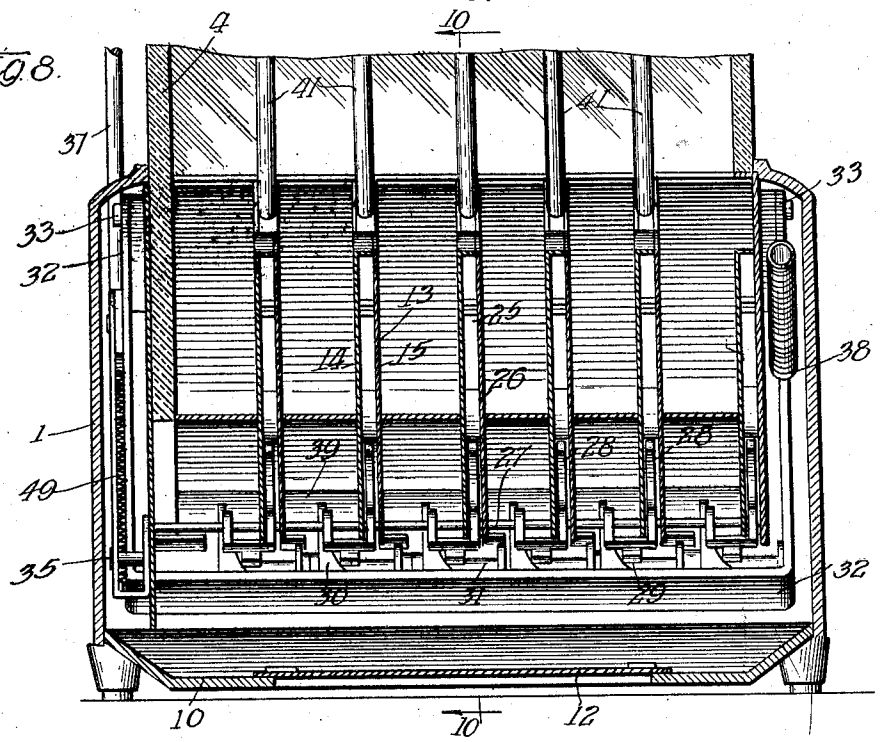
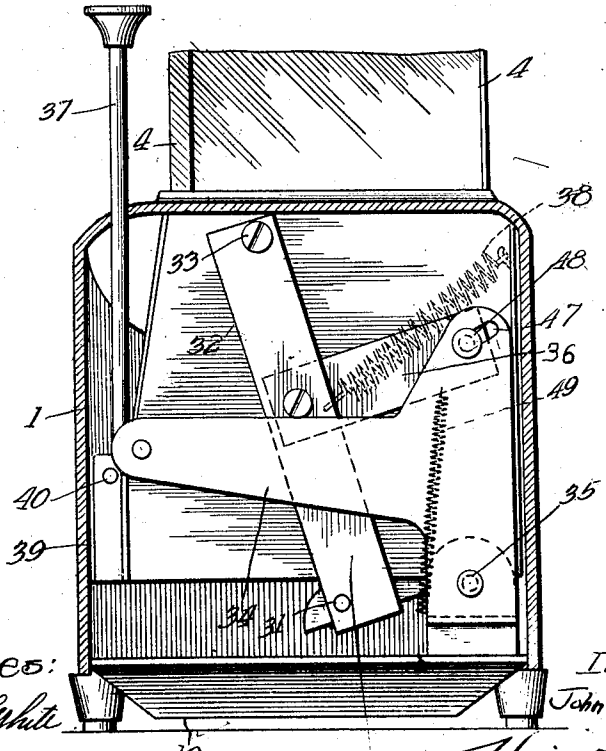


Fig 9.



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J. RIIKONEN

VENDING MACHINE

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Fig. 10

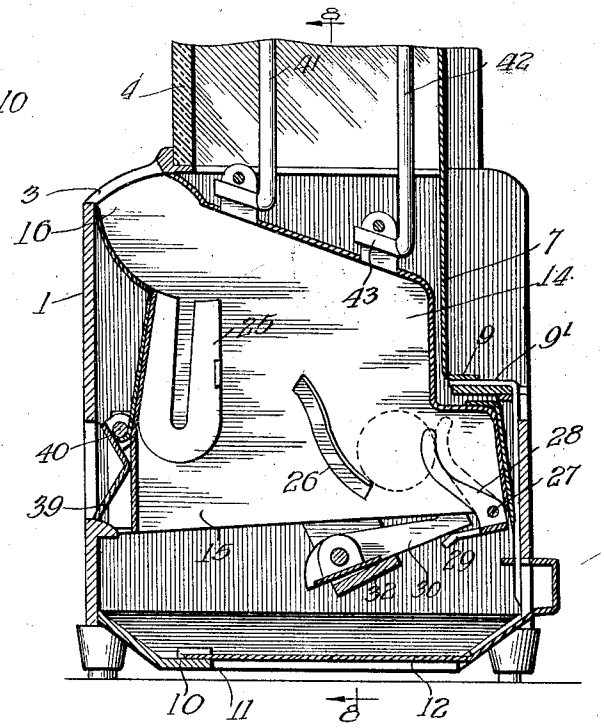


Fig. 11.

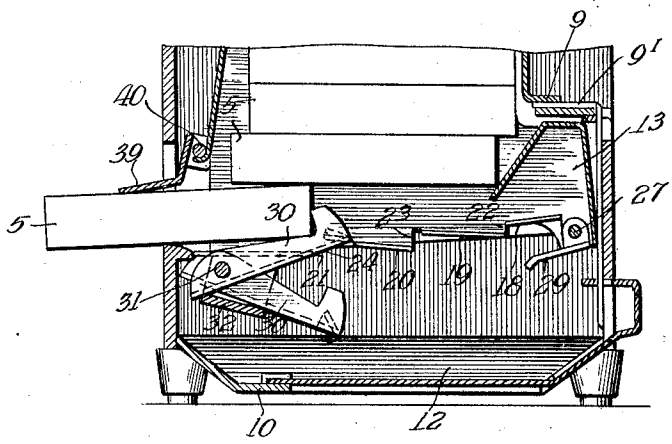
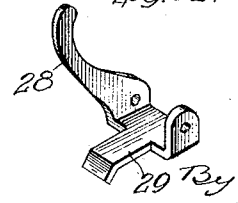


Fig. 12.



Witnesses:
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Inventor:
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Patented June 2, 1925. 1,540,715

UNITED STATES PATENT OFFICE.

JOHN RIIKONEN, OF CHICAGO, ILLINOIS.

VENDING MACHINE.

Application filed May 8, 1922. Serial No. 559,246.

To all whom it may concern:

Be it known that I, JOHN RIIKONEN, a citizen of Finland, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Vending Machines, of which the following is a description.

My device relates to an improvement in vending machines, and has among its objects the production of a machine of the kind described which is simple, convenient, durable, reliable, efficient and satisfactory for use wherever found applicable.

Many other objects and advantages of the construction herein shown and described will be obvious to those skilled in the art from the disclosure herein given.

To this end, my invention consists in the novel construction, arrangement and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, wherein like reference characters indicate like or corresponding parts,

Fig. 1 is a front elevation of the machine;

Fig. 2 is a rear elevation thereof;

Fig. 3 is a section taken substantially on the line 3—3 of Fig. 1;

Fig. 4 is a perspective detail of one of the push links;

Fig. 5 is a section taken substantially on the line 5—5 of Fig. 3;

Fig. 6 is a section taken substantially on the line 6—6 of Fig. 1;

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

Fig. 8 is a section on the line 8—8 of Fig. 10;

Fig. 9 is a section taken substantially on the line 9—9 of Fig. 1;

Fig. 10 is a section taken substantially on the lines 10—10 of Figs. 1 and 8;

Fig. 11 is a sectional view similar to that shown in Fig. 3 at the end of the forward stroke on the push link, and

Fig. 12 is a perspective detail of the coin-controlled link.

In the drawings, wherein I have illustrated the preferred embodiment of my invention, there is illustrated a magazine casing or receptacle 1 of any suitable size, shape and material, having a discharge opening 2 at the front thereof and a series of coin-receiving slots or apertures 3 spaced apart adjacent the upper end of the receptacle. Walls 4 are extended upwardly from the receptacle to form an additional storage space or reservoir for enclosing the articles 5 to be vended. The walls 4, are preferably made of glass, or other transparent material so that the articles therein may be attractively displayed. The top wall or cover 6 is preferably of metal and is flanged over the exterior surface of the walls 4, as shown more clearly in Fig. 3. The back wall 7 is of any suitable material, preferably metal, having an outwardly flanged projection 9 at the bottom and is securely held in place, by suitable locking means 8. The bottom 10 of the receptacle has an aperture 11 therethrough, over which aperture there is removably fitted a plate 12, locked in place by the removable rod 9′, held in place by the projection 9 of the rear wall 7, as shown in Figs. 10 and 11. The coins inserted into the machine through the slots 3 are discharged into the bottom thereof onto the plate 12, so that when the plate 12 is removed the coins will drop through the aperture 11 and may be then collected.

Dividing the receptacle 1 into a suitable number of compartments or chambers, are partitions 13. Each of the partitions 13 is preferably formed of sheet material having side walls 14 and 15 spaced apart and open at their bottom, and having a coin-receiving opening 16 at the forward end, registering with the slot 3 formed in the casing 1. The side walls 14 and 15 are oppositely outwardly flanged at their bottoms, one of said flanged ends having a plurality of steps 18, 19, 20 and 21 of progressively varying elevations, formed therein, the ends of the steps having openings 22, 23 and 24 respectively therebetween.

Between the side walls 14 and 15 of the partitions there is secured a magnet 25 near the coin-receiving end thereof to deflect bad coins from the main path, and a guide member 26 is spaced rearwardly of the magnet 25. At the bottom of the side walls of each partition at the rear end, and pivotally held thereat by a pin 27, is a coin-controlled link having arms 28 and 29. The arm 28 extends upwardly within the partition so that it is in the path of the coin (see Fig. 10), and will be pivoted about the pin 27 to

raise the arm 29 upwardly, for a purpose to be hereinafter described, falling by gravity to its normal position after the coin has been discharged therepast.

A series of push links 30 are provided, one for each compartment, each of which is adapted to be operatively engaged by the arm 29 of the coin-controlled link, in order to discharge the articles 5 from the magazine. There is an individual link 30 provided for each compartment, the links being pivoted at one end to a rod 31 beneath the bottom walls of the compartments, the ends of the rod 31 secured to a U-shaped bar 32 pivoted at its upper end, as at 33, to the exterior walls of the end compartments. A bell crank lever 34 is pivoted at 35 to any suitable stationary part of the device, and a link 36 pivotally connects one arm of the bell crank lever 34 to one of the end arms 32 of the U-shaped member, the part 34 having an elongated slot 47 therein, through which the pin 48 of the link 36 slidably extends, so that when the bell crank lever 34 is rocked on its fulcrum 35 there will be first a small amount of lost motion at the parts 47 and 48, and the U-shaped member 32 will be rocked on its fulcrum 33 normally moving all of the push links 30 longitudinally of the compartments but entirely therebelow. A push rod or main control lever 37, is connected to one end of the bell crank lever 34 and projects outwardly through the casing 1. A tension spring 49 has one end secured to the link 36 and the other to the lower end of the lever 34, as shown in Fig. 9. The purpose of the lost motion connection is to avoid a sudden jar to the parts when pushing on the rod 37, and thus avoid throwing the push links, other than the coin-controlled one, into operative position.

In order that the links 30 shall be effective to discharge one of the articles 5 from its compartment, a coin must be inserted into the proper slot 3, said coin falling to the position indicated in dotted lines in Fig. 10, and causing the proper pivoted link 28—29 to lift the link 30 cooperating therewith through the opening 22 (see Figs. 3 and 10). The link has an inclined portion 30′ adjacent its article-engaging end and forming an enlargement thereat. In this position it will be seen that the link 30 will project through the opening in the bottom wall of the compartment so that when the push rod 37 is depressed the link 30 will be moved longitudinally forward, the inclined portion 30′ lifting it slightly and engaging along the bottom wall of the compartment the tip of the link engaging the bottom article 5 in the compartment and moving it to the position shown in Fig. 11, whereupon said article may be withdrawn by the operator. When the link 30 is at the end of its forward or discharge stroke, it will drop through the front opening 24 provided in the bottom wall of the compartment. A spring 38 is arranged to automatically return or retrieve the push rod 37, and the links 30 operated thereby, to their normal position, as shown.

The purpose of the intermediate opening 23 is that of safety, or, in other words, to prevent the possibility of discharging more than a single article without inserting a fresh coin for each article. Assuming that a coin has been inserted, and the link moved forwardly to discharge one article, but not quite to the end of the forward stroke, then, if it were attempted to move the link 30 rearwardly to its starting position, the inclined portion 30′ would engage the rear wall of the safety opening to act as a cam and the link, instead of returning completely to the rear of the compartment, would drop through the intermediate opening 23, thus preventing a fresh engagement with the next article in the compartment.

It will be noted that although all of the links 30 are moved in unison, because they are all connected to the U-bar 32, only those links which have had coins inserted in their respective compartments are operative, the last mentioned links traveling along the interior surface of the bottom walls of the compartments, while the former links travel entirely below the compartments.

Another purpose of the steps 18, 19 and 20 provided in the bottom walls of the compartments is to jog or otherwise actuate the articles in the magazine so as to insure proper feeding thereof to the bottom wall of the compartment. It should be here noted that the articles 5 are of elongated shape and are discharged endwise through the compartments.

The weight of the coin is sufficient to move the member 28 to the dotted line position shown in Fig. 10, lifting the link 30, but is not sufficient to move said member and link any substantial distance beyond the dotted line position (see Fig. 3). As soon as the link 30 has been actuated forwardly by the main control mechanism, the weight of the coin is permitted to move the member 28 a short distance backwardly beyond its dotted line position. The coin then drops into the pan.

A door or closure 39 is pivoted to the frame, as at 40, and normally protects the opening 2. Rods 41 and 42 are provided adjacent the front and rear of the compartments to divide the upper portion of the magazine, said rods having their lower ends bent laterally, as at 43, the bent ends 43 held between the side walls 14 and 15 of the partitions 13. The rods 41 and 42 are extended to the top of the machine and are secured thereto by threading the ends and securing a nut 44 thereat. In order to pro-

vide a neater structure, a false wall 45 is provided interiorly of the top wall 6, said wall 45 secured to the top wall 6 by screws 46 or other suitable or equivalent means.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described or uses mentioned.

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

1. A device of the character described, comprising, in combination, a series of article receiving receptacles, each having a discharge outlet therefrom, a bottom wall disposed across said receptacles in substantial alinement with the lower edge of said outlets, said wall being provided with a plurality of openings communicating with each receptacle, individual delivery means for each of said receptacles, all of said delivery means movable simultaneously across said receptacles below said bottom wall and normally ineffective to deliver articles through said outlets, and coin-controlled means for selectively elevating said delivery means through certain of said openings to render their movement effective for discharging articles.

2. A device of the kind described comprising an article-receiving receptacle having a bottom wall and a discharge outlet for said articles, said bottom wall having a plurality of openings therethrough spaced between the front and rear thereof at different levels, a link normally movable longitudinally of said wall entirely therebelow, and coin-controlled means for lifting one end of said link to enter one of said spaced openings whereby the longitudinal movement of the link will be above the bottom wall to engage and discharge one of said articles through said outlet, said link subsequently dropping through another of said spaced openings to its normally inoperative position.

3. A device of the kind described comprising a series of article receiving receptacle, each having a bottom wall and a discharge outlet for said articles, said bottom wall having a plurality of openings therethrough spaced between the front and rear thereof, a series of links for each one of said receptacles normally simultaneously movable longitudinally of said walls but entirely therebelow, and coin-controlled means for selectively lifting one end of one of said links to enter one of said spaced openings whereby the longitudinal movement of said link will be above the bottom wall to engage and discharge one of said articles, the other links moving entirely between said walls, said link subsequently dropping through another of said spaced openings to its normally inoperative position at the end of its forward movement.

4. A device of the kind described comprising a series of adjacent article-receiving receptacles, each having a bottom article-supporting wall and a discharge outlet at one end thereof, said walls having openings therethrough at the front and rear, a U-frame member pivoted so as to be reciprocally movable longitudinally of all of the bottom walls, links pivotally carried by said U-frame member and normally movable in unison entirely below each of said bottom walls when said U-frame member is actuated and coin-controlled means pivotally movable to selectively lift the free end of one of said links through the rear opening in one of the bottom walls to rest thereon during its forward movement to engage and discharge an article through said discharge outlet, the remaining links always moving simultaneously therewith entirely below their respective receptacles, the free end of the effective link dropping through the forward opening of the wall to its normal position at the end of the forward stroke.

5. A device of the kind described comprising an article-receiving receptacle having a bottom wall and a discharge outlet for said articles, said bottom wall having front and rear openings therethrough and an opening intermediate said openings, a coin-controlled member normally ineffective to engage said articles, but movable through said rear opening to engage said articles whenever a coin is inserted, said member movable along said bottom wall to discharge said article and adapted to drop through said front opening to its normally inoperative position at the end of its stroke, but also adapted to drop through said intermediate opening to its normally inoperative position when released from the engaged article before the end of its forward stroke and moved rearwardly of said bottom wall.

6. A device of the kind described comprising an article-receiving receptacle having a bottom wall and a discharge outlet for said articles, said bottom wall having an opening therethrough adjacent the rear thereof and an opening forwardly of the rear opening and a coin-controlled member engageable with said articles when a coin is inserted and movable forwardly to discharge said article, but falling through said forward opening whenever it is moved rearwardly before it has completed its full forward movement.

7. A device of the kind described, comprising an article receiving receptacle having a bottom wall and a discharge outlet for articles, said bottom wall having a series

of openings therethrough, and an article engaging member normally positioned below said bottom wall and adapted to be elevated in the operative position above said wall by the deposit of a coin, said member movable within said receptacle to discharge articles therefrom and adapted to drop through one of said openings to its normally inoperative position when released from the engaged article prior to the end of its discharge stroke and moved rearwardly.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN RIIKONEN.

Witnesses:
ROY W. HILL,
RUTH M. EPHRAIM.