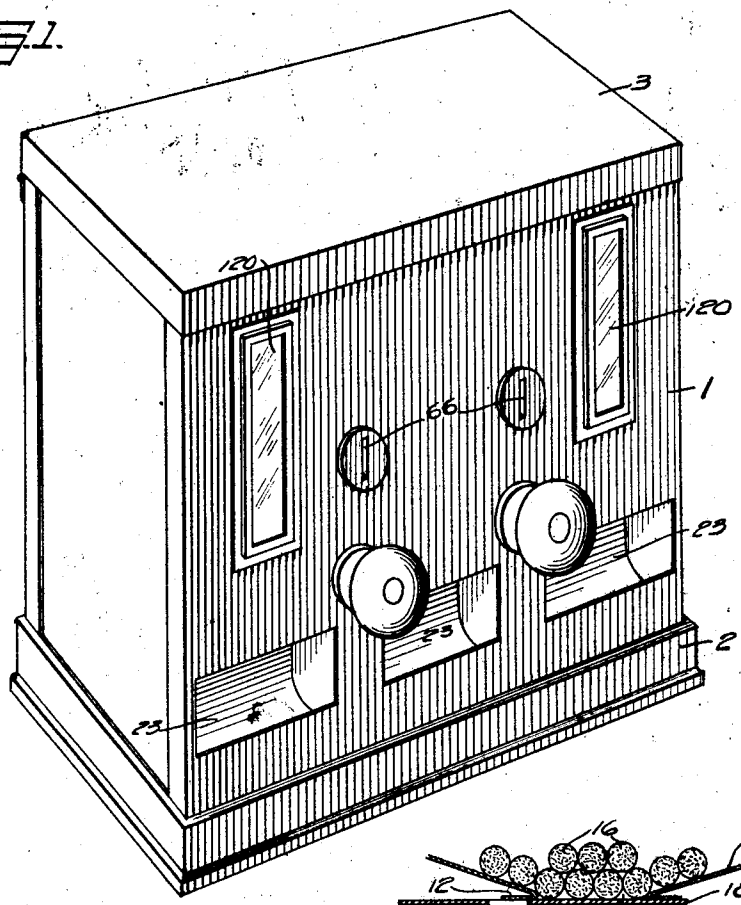
July 27, 1926. 1,593,906

T. F. LORENTZEN

COIN OPERATED VENDING MACHINE

Filed Jan. 2, 1926 4 Sheets-Sheet 1

FIG. 1.



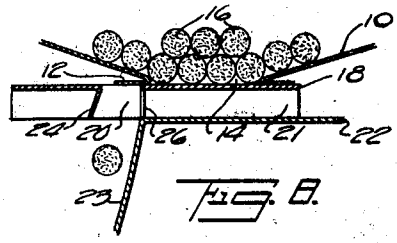
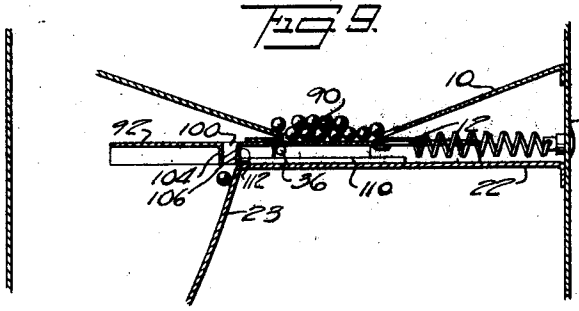


FIG. 8.

FIG. 9.



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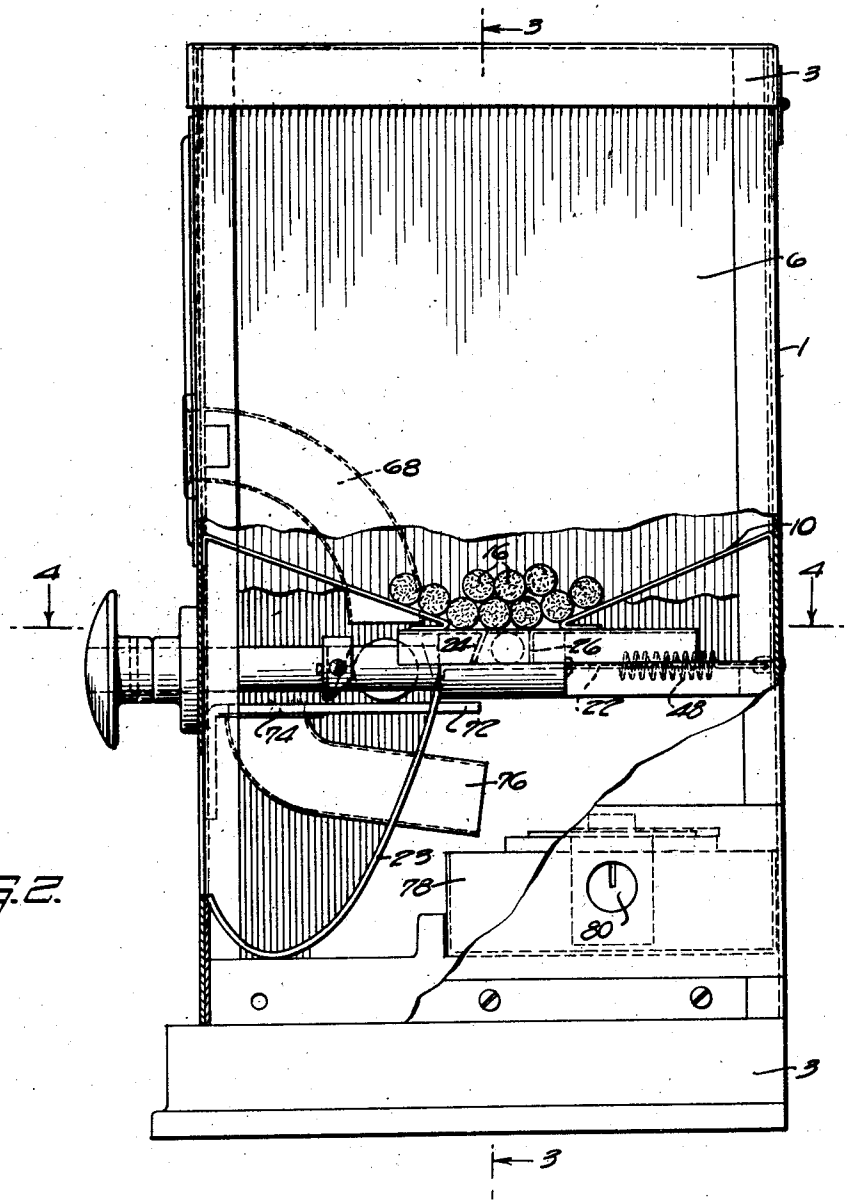


FIG. 2.

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COIN OPERATED VENDING MACHINE

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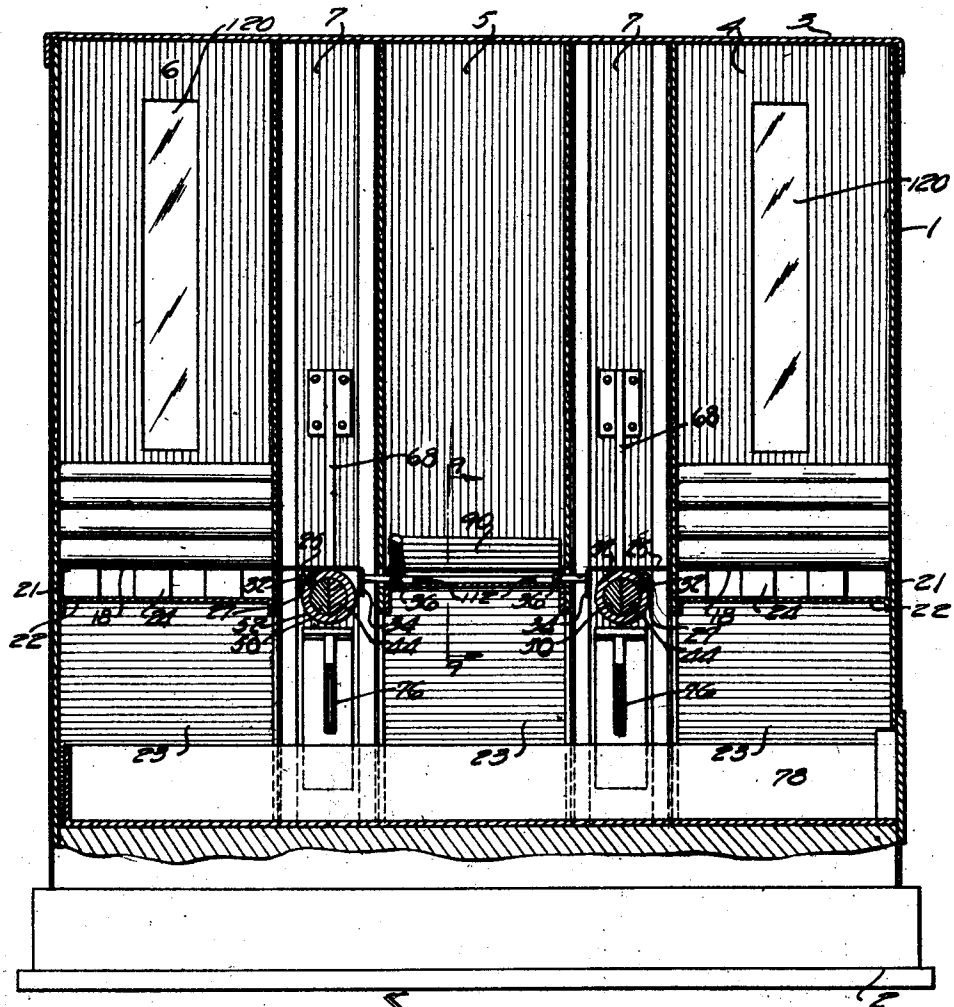


FIG. 9.

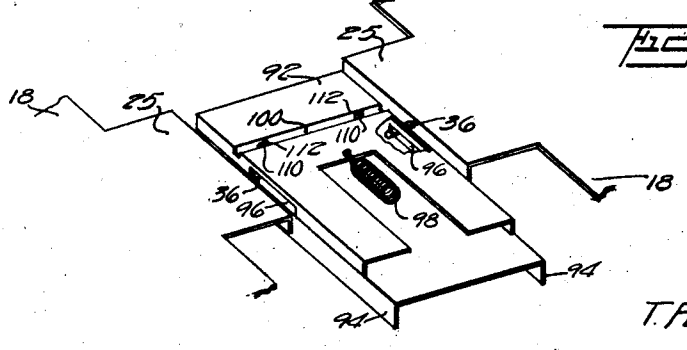


FIG. 10.

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COIN OPERATED VENDING MACHINE

Filed Jan. 2, 1926 4 Sheets-Sheet 4

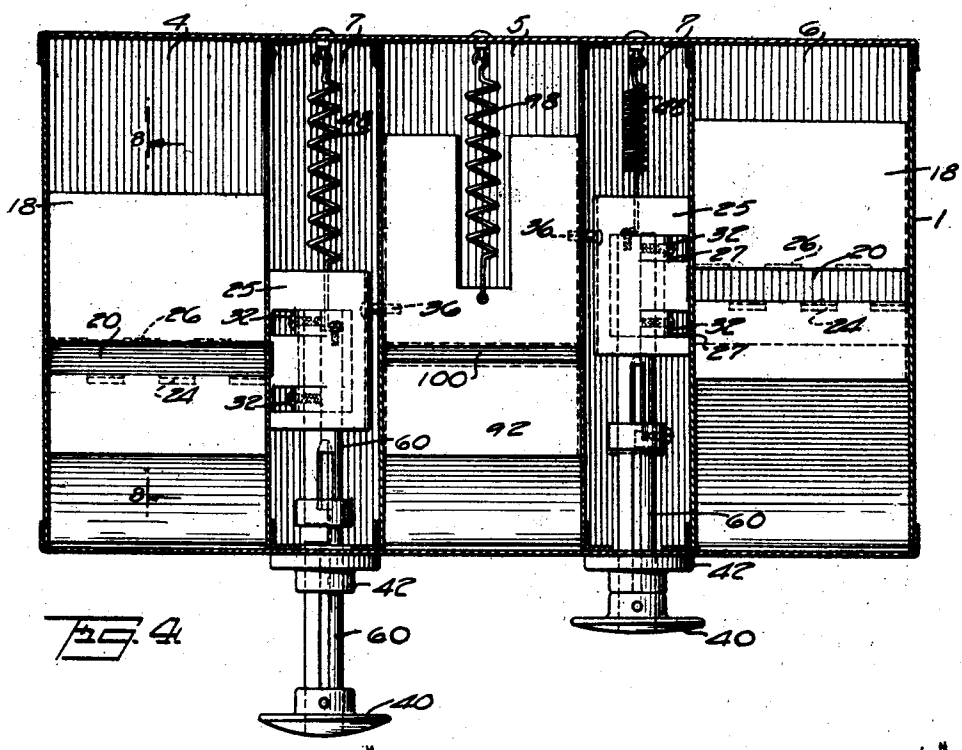


Fig. 4.

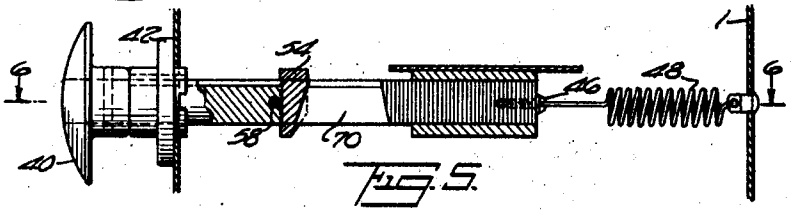


Fig. 5.

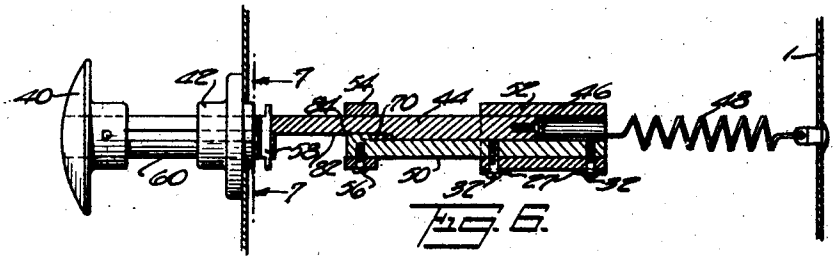


Fig. 6.

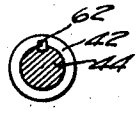


Fig. 7.

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UNITED STATES PATENT OFFICE.

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COIN-OPERATED VENDING MACHINE.

Application filed January 2, 1926. Serial No. 78,731.

This invention relates to improvements in dispensing or vending machines.

The primary object of the invention is to provide an improved machine which, upon being actuated in the proper manner, will deliver simultaneously a cigarette and a match, from individual compartments and this by the operation of a single releasing mechanism.

A further object of the invention is to provide a machine of such construction that a person desiring to obtain a cigarette therefrom is given a choice and may withdraw not only the brand or kind of cigarette desired but also be provided with a match. While the invention is primarily designed to be used with a suitable coin control, it will be understood that it may be used without such control.

A still further object of the invention is to provide a machine of the above type which will be simple in construction and positive in operation.

With the above and other objects in view the machine consists in the novel combination and construction of parts set forth in the claims appended hereto and as hereinafter described with reference to the accompanying drawings, in which:—

Figure 1 is a perspective view of a machine constructed according to the present invention.

Fig. 2 is an end view thereof mainly in section showing the operating mechanism.

Fig. 3 is a longitudinal sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a horizontal sectional view taken on the line 4—4 of Fig. 2.

Fig. 5 is a sectional side view of one of the pull rods of the machine, and Fig. 6 is a horizontal section taken on the line 6—6 of Fig. 5.

Fig. 7 is a transverse section taken on the line 7—7 of Fig. 6.

Fig. 8 is a vertical sectional view taken on the line 8—8 of Fig. 4.

Fig. 9 is a similar view to Fig. 8 taken on the line 9—9 of Fig. 3, and

Fig. 10 a perspective view of a match carrier forming a part of the present machine.

In the several figures of the drawings, the numeral 1 indicates the casing of the machine, 2 the base thereof, and 3 the lid which can be raised or lifted off to give access to the interior of the machine for inspection or restocking purposes.

The interior of the casing of the machine illustrated is divided by suitable partitions into three compartments or containers 4, 5 and 6, the two outside compartments 4 and 6 being intended to receive different brands or kinds of cigarettes respectively and the central compartment 5 being intended to hold matches, the idea as hereinbefore outlined being that any person desiring to obtain a cigarette from the machine is given a choice and can withdraw a cigarette of the brand selected from the machine, together with a match from the interposed compartment which is common to both cigarette compartments, the two articles being automatically delivered by pulling out the proper pull rod.

Between each cigarette and match compartment is provided a pull rod compartment 7.

The machine shown in the drawings is designed to contain but two brands of cigarettes, one brand in the compartment 4 and one brand in the compartment 6 but it will be obvious that any number of brands can be taken care of by increasing the number of cigarette compartments and interposing match compartments therebetween.

Each of the cigarette compartments 4 and 6 comprises a substantially hopper-like structure having two sloping bottom members 10 preferably having turned back edges 12, with a space 14 left therebetween so that the bottom cigarettes 16 in the hopper can rest on a conveyor or carrier 18 disposed immediately below the hopper and space 14 and which carrier is adapted to receive, in a slot 20 therein, one cigarette at a time.

The carrier 18 is rectangular in plan and at its outer side is provided with a downturned flange 21, the lower edge of which rests on a platform 22 in the compartment fixed to the rear wall of the casing and extending horizontally forward for some distance where it is curved suddenly downward and forward and then upward to provide an exit chute 23 from the machine for the cigarettes.

The slot 20 extends transversely across the carrier and is conveniently formed by slitting the metal thereof and turning it down to provide front and rear barriers 24 and

26 for the slot so that on the movement of the carrier on the platform the cigarette will be rolled along the latter with the former. These barriers and the flange 21 form the means whereby the carrier can slide on the platform.

On that side adjacent the central match compartment 5, each carrier 18 is provided with a lateral extension 25 which projects into the juxtaposed pull rod compartment 7 and such extension is provided with pressed out straps 27 which are secured to the pull rod as by screws 32. As will be clear more particularly from Fig. 3 the extensions 25 pass over the top of said pull rods and at their extremities are provided with a down-turned flange 34 from which projects a pin 36 adapted to control the movements of the match carrier as will be hereinafter described.

The various partitions are provided with appropriate slots to permit the carrier extensions 25 and pins 36 to pass therethrough as will be understood.

As will be seen more clearly from Figs. 5 and 6 each pull rod comprises a handle or knob 40 disposed on the outside front face of the casing from which extends, through a socket 42, into the interior of the machine, that is to say, into the compartment 7, a rod 44 to the rear end of which is attached, as by a screw 46, one end of a spring 48, the other end of which is attached to the rear wall of the machine.

Co-operating with the rod 44 is a second rod 50 and it is to be observed that it is to this latter rod that the straps 27 of the extensions 25 of the carriers 18 are connected by the screws 32, these latter serving also to secure to said rod 50 a sleeve 52 which encompasses and serves as a guide for both of said rods 44 and 50. A second sleeve 54, also secured by a screw 56 to the rod 50, acts as a further guide for said rods. Furthermore, the rod 44 is provided with a stop 58 and with a groove 60 in which works a key 62 to prevent the rotation of the pull rod and its connected parts with relation to the other parts of the machine.

When the handle 40 is pulled outwardly to the limit of its movement the attached carrier 18 has of course also moved forward carrying in its slot 20 a cigarette, until the front barrier 24 of said slot has passed the front edge of its supporting platform 22 and the rear barrier 26 is in line therewith or approximately so; consequently the cigarette now drops down the chute 23 and is delivered by the machine to the purchaser.

The construction of the compartment 5 for the matches 90, the hopper, platform and connected chute therefor are identical with those parts provided for the cigarettes and are therefore indicated by the same reference numerals in the drawings.

The match carrier 92 is however of slightly different construction from the cigarette carriers 18 as will readily be seen when it is realized that such carrier 92 is actuated, not by a push rod directly as in the case of a cigarette carrier but indirectly by such rod through either of the cigarette carriers disposed on either side of it. It has however the same general rectangular formation and at its two opposite sides adjacent the compartments 7 is formed with a downturned flange 94 and in the flanges so provided are cut long slots 96 in which are adapted to work the pins 36 of the cigarette carrier extensions 25. It is also provided with a returning spring 98 and with a transverse slot 100 formed, for example, by suitably slitting the metal and then turning this down to form the slot and at the same time provide front and rear barriers 104 and 106 for the match identical with the cigarette barriers 24 and 26.

The slot 100 is of course only wide enough to take one match and in order that the same shall lie horizontally in the slot provision must be made for keeping the head thereof from contacting directly with the platform. The head would of course owing to its larger size upset the horizontal disposition of the match and would lead to difficulties in that a further match or matches might partly fall into the slot and cause the carrier to jamb when the slot reaches the downward projecting bottom 10 of the hopper. To this end the platform is provided with a pair of upstanding rails or ridges 110 which work in slots 112 cut in the barriers 104 and 106.

The various compartments can be provided with windows 120 so that the interiors thereof can be readily inspected.

The operation of the machine will already be clear in general from what has been said above; it therefore need only now be noted that when the corresponding handle 40 is pulled out through said levers the connected cigarette carriage will be pulled forward until the transverse slot 20 therein carrying a cigarette passes the end of the platform 22 when the cigarette will be free to fall down the chute 23 to the outside of the machine.

Simultaneously the match carrier 92 has been drawn forward by the appropriate pin 36 carrying along a match in the slot 100 which match is also free to drop into the centre chute 23 when the slot passes the forward end of the central platform 22. On the release of the knob 40 the springs 48 and 98 will respectively return the cigarette and match carriers to their original positions and on such return movement another cigarette will fall into the slot 20 and another match into the slot 100 ready for the next operation of the machine.

It is to be noted that the length of the space 14 in the sloping bottoms of the compartments 4, 5 and 6 is such that a plurality of cigarettes or matches, as the case may be, are always free to rest on the carrier immediately therebeneath. Thus, on the return of the carriers to their normal position one of said cigarettes or matches is bound to drop into the slot provided, thereby insuring a positive refilling of the carrier on every of such return movements.

It will be understood that the machine hereinbefore described with reference to the vending of cigarettes and matches, may also be used for other articles either with or without modifications falling within the scope of the present invention as defined by the appended claims.

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

1. A vending machine comprising a plurality of hopper-like compartments, a movable carriage having a recess therein beneath each hopper, a supporting platform beneath each carriage, a pull rod located between each two adjacent compartments, means whereby two simultaneously adjacent carriages can be actuated to deliver articles carried thereby by the operation of a single pull rod, and means for returning the parts to their normal position.

2. In a vending machine a pair of hopper-like containers for the articles to be vended, a movable carriage beneath each hopper, a fixed platform located beneath each carriage, a pull rod located between said carriages, means for connecting one of said carriages to said pull rod, means for connecting the other carriage to that connected to the pull-rod, means whereby said two carriages can be actuated to deliver articles carried thereby on the operation of the pull rod, and means for returning said parts to their normal position on the release of the pull rod.

3. In a vending machine, a pair of hopper-like containers for the articles to be vended, a movable carriage having an article-receiving slot located beneath each hopper, a fixed platform located beneath and supporting each carriage, a two-part pull rod disposed between said carriages, an extension on one of said carriages forming a connection with one part of said pull rod, means to enable the carriages to be moved to discharge the articles carried thereby from the machine, and means for automatically returning the parts to their normal position on the release of the pull rod.

4. In a vending machine, a pair of hopper-like containers for cigarettes, a like container for matches disposed therebetween, an operating mechanism compartment arranged between each of said cigarette compartments and the centrally-disposed match container, a two-part pull rod located in each of said mechanism compartments, a movable carriage having an article-carrying slot underneath each hopper, a fixed platform under each carriage, a lateral extension on each cigarette carriage connected to one part of the adjacent pull rod, a pin carried by each extension projecting into the path of the match carriage, selective means whereby either cigarette carriage and the central match carriage can be moved to discharge a cigarette and a match from the machine, and means for automatically returning said parts to their normal position on the release of the pull rod.

5. In a vending machine, a pair of hopper-like containers for different kinds of cigarettes, a like container for matches disposed therebetween, an operating mechanism compartment arranged between each of said cigarette compartments and the centrally-disposed match container, a pull rod located in each of said mechanism compartments, a movable carriage having a slot adapted to carry one cigarette underneath each cigarette hopper, the length of the openings in each cigarette hopper being such however that a plurality of cigarettes can rest on the said carriers, a movable carriage having a slot adapted to carry one match underneath the match hopper, the length of the opening in said hopper being such however that a plurality of matches can rest on said match carrier, a platform supporting each of said carriages, a lateral extension on each cigarette carriage connected to one part of the adjacent pull rod, a pin carried by each extension projecting into the path of the match carriage, means whereby either cigarette carriage and the match carriage can be moved to discharge a cigarette and a match from the machine, and means for automatically returning said parts to their normal position on the release of the pull rod.

6. In a vending machine, a pair of hopper-like containers for different kinds of cigarettes, a like container for matches disposed therebetween, an operating mechanism compartment arranged between each of said cigarette compartments and the centrally-disposed match container, a pull rod located in each of said mechanism compartments, a movable carriage having a slot adapted to carry one cigarette underneath each cigarette hopper, the length of the openings in each cigarette hopper being such however that a plurality of cigarettes can rest on the said carriers, a movable carriage having a slot adapted to carry one match underneath the match hopper, the length of the opening in said hopper being such however that a plurality of matches can rest on said match carrier, a platform supporting each of said carriages, a lateral

extension on each cigarette carriage connected to one part of the adjacent pull rod, a pin carried by each extension projecting into the path of the match carriage, selective means whereby either cigarette carriage and the match carriage can be moved to discharge a cigarette and a match from the machine, and means for automatically returning said parts to their normal position on the release of the pull rod.

7. In a vending machine, a hopper-like container for matches, a movable carriage having a barriered slot therein adapted to receive one match at a time disposed beneath the opening of said hopper, a supporting platform disposed beneath said carriage, a pair of spaced-apart upwardly projecting rails carried by said platform on which the match in the carriage slot can rest and be carried horizontally, a chute at the end of said rails, and means for moving said carriage to discharge a match from said slot into said chute.

8. In a vending machine, a pair of hopper-like containers for cigarettes, a like container for matches disposed therebetween, a pull rod located between each cigarette container and the central match container, a movable carriage having a barriered transverse slot adapted to carry a cigarette underneath each cigarette hopper, a flanged movable carriage having a transverse barriered slot adapted to carry a match underneath the match hopper, a platform supporting each of said carriages, means on the match carrier platform for maintaining a match in a horizontal position in the slot of said carrier, an extension securing each cigarette carriage to one part of the adjacent pull rod, a pin carried by each extension projecting each into a slot in the flange of the match carriage, selective means whereby either cigarette carriage and the match carriage can be moved to discharge a cigarette and a match from the machine, and means for automatically returning said parts to their normal position on the release of the pull rod.

In testimony whereof I have signed my name to this specification.

THORNTON FLOYD LORENTZEN.