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V. H. KELLEY

VARIETY VENDING MACHINE

Filed Aug. 27, 1925

2 Sheets-Sheet 1

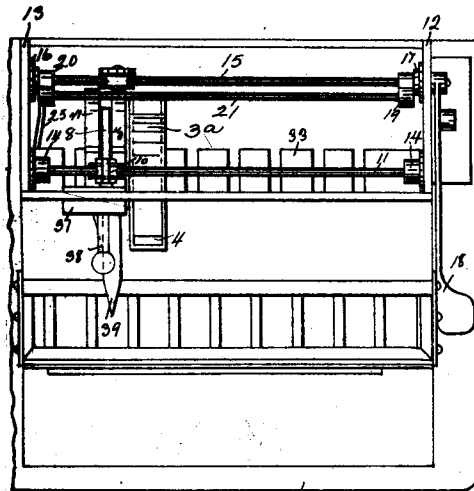


Fig. 1.

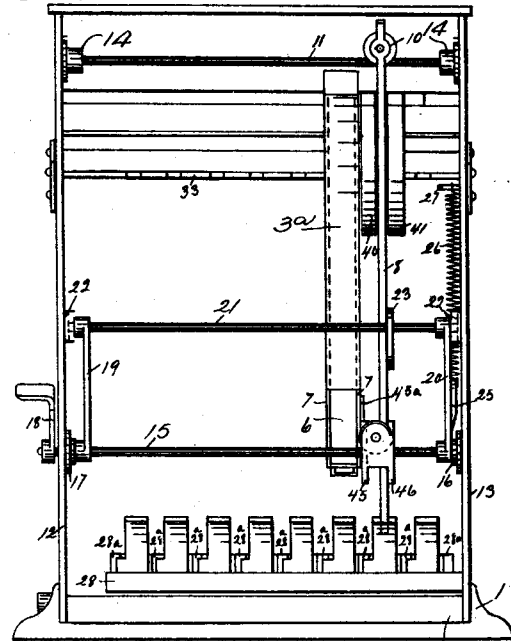


Fig. 3.

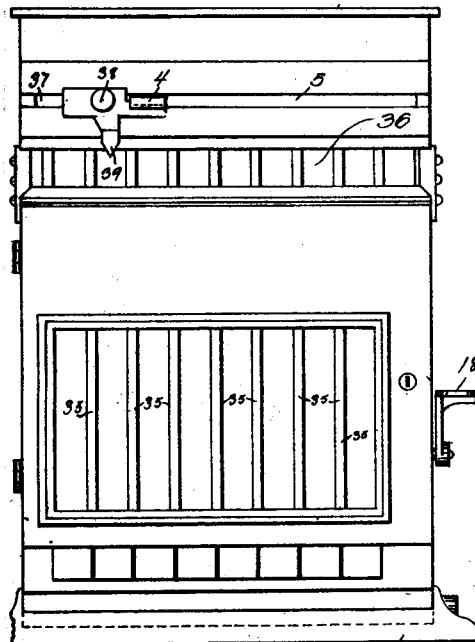


Fig. 2.

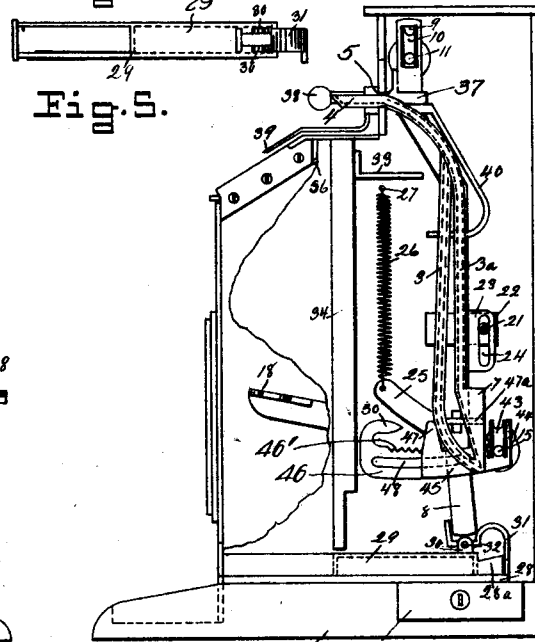


Fig. 5.

Fig. 4.

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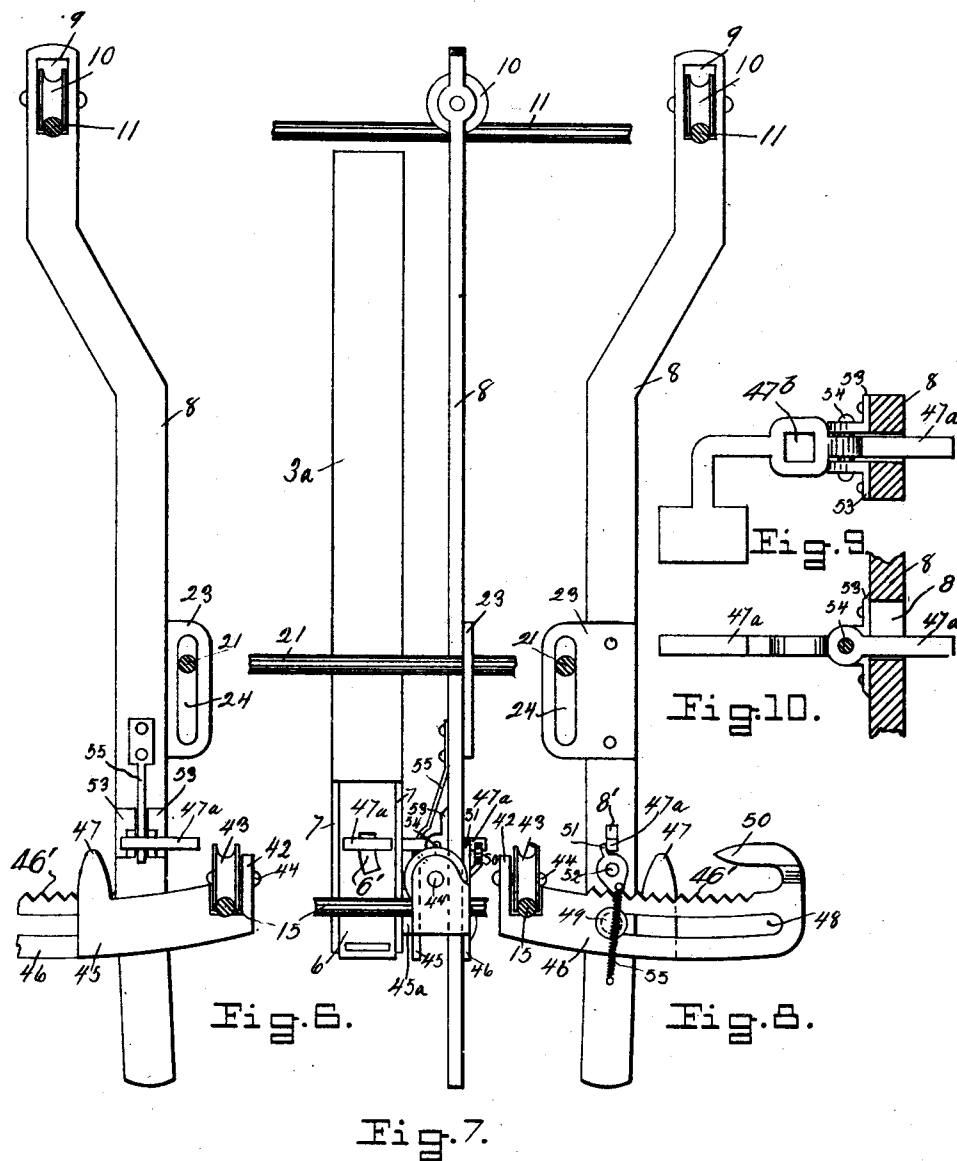
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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE.

VICTOR H. KELLEY, OF MADISON, WISCONSIN.

## VARIETY VENDING MACHINE.

Application filed August 27, 1925. Serial No. 52,931.

This invention relates to vending machines of that type wherein packaged articles, such as boxes of matches, packages of candy, chewing gum, and the like, are stored and delivered, one at a time, by a dispensing mechanism, which usually includes a coin-controlled locking and releasing mechanism. More specifically, the present invention relates to that class of such machines wherein the cabinet is divided by a greater or less number of vertical partitions into a plurality of storage bins or compartments which may contain a variety of merchandise, with a sliding drawer underlying each compartment, and selective means by which any one of the series of drawers may be opened.

The object of the invention is to provide a simple, inexpensive and reliable selective dispensing mechanism for machines of this type, and to this end the invention consists in the novel construction and arrangement of parts hereinafter described and more particularly pointed out as to subject-matter and scope in the appended claims.

My invention, in one practical embodiment thereof, is illustrated in the accompanying drawings, in which—

Fig. 1 is a top plan view of the cabinet, with the top removed;

Fig. 2 is a front elevation of the cabinet;

Fig. 3 is a rear elevation, with the back wall of the cabinet removed;

Fig. 4 is a side elevation with one side wall and a portion of the opposite side wall of the cabinet removed to disclose interior parts;

Fig. 5 is a top plan view of one of the slidable drawers and its beam coupling latch;

Fig. 6 is a left side elevation of the delivery beam;

Fig. 7 is a rear elevation of the delivery beam and coin chute;

Fig. 8 is a right side elevation of the delivery beam;

Fig. 9 is a top plan view of the coin trip lever; and

Fig. 10 is an edge elevation of the coin trip lever.

The cabinet is a substantially rectangular upright sheet-metal structure mounted on a cast metal base 1, in the rear of which is a channel accommodating a sliding cash drawer 2 employed when the machine is equipped with coin-controlled locking and releasing mechanism. The interior of the cabinet is divided fore and aft by a transverse partition 34 (Fig. 4), and the space lying

in front of the partition 34 is subdivided by spaced vertical partitions 35 into a plurality of bins for the articles to be dispensed, each of said bins being open at its lower end. On the base 1 is a bottom board 28, and spaced slideways are formed on the top thereof by metal partition strips 28<sup>a</sup> directly underlying the compartment partitions. In these slideways are disposed drawers 29, each of said drawers comprising a metal frame with side and end walls, a transverse partition underlying the lower edge of the cabinet partition 34 when the drawer is closed, and a top plate 29' (Fig. 5) covering the rear portion of the drawer behind the cabinet partition 34. On the top plate adjacent to the rear end of the drawer are a pair of lugs 30 between which is mounted a latch 31 on a pivot pin 32. The tail end of the latch is adapted to hook back of the partition strips 28<sup>a</sup> so as to prevent the drawer from being pried forward when not intended to be actuated, and the latch is also so formed as to provide coupling engagement with the lower end of a delivery beam through which the drawer is released and actuated, as hereinafter described.

In the upper portion of the cabinet between the side walls of the latter is mounted a trolley rail 11, the ends of which are conveniently mounted in socket members 14 attached to the side walls 12 and 13. From this trolley rail is suspended a delivery beam 8, best shown in detail in Figs. 6, 7 and 8, by means of a trolley wheel 10 journaled in a slot 9 in the upper end of the beam 8 and traveling on the rail 11. The beam 8 is shifted along the rail 11 so as to bring it into the vertical plane of any of the several bins and their drawers by means of a sliding block 37 mounted in a slot 5 in the front wall of the cabinet and equipped with a forwardly projecting handle 38 and a forwardly and downwardly extending pointer 39 overlying the upper ends of the bins, which latter are preferably covered by an inclined transparent plate 36. On the rear portion of the block 37 are a pair of rearwardly and downwardly extending arms 40 and 41 between which the beam 8 lies, these arms being adapted to engage a considerable length of said beam so as to move the latter along the trolley rail 11 without any appreciable tilting or canting. Extending from side to side of the cabinet and attached to the back of the partition wall 34 is a horizontally disposed plate 33 formed with transverse slots that are located in vertical alignment with

the latches 31, which insures the engagement of the lower end of the beam with a latch before it can be swung forwardly a sufficient distance to move the corresponding drawer outwardly.

A rock shaft 15 is rotatably mounted at one end in a bearing 16 attached to the side 13 of the cabinet, said rock shaft extending across the cabinet parallel with the rod 11 and extending through a collar 17 and the opposite side 12 of the cabinet for the attachment thereto of an operating arm or handle 18. Fast on the rock shaft 15 adjacent to the bearing 16 and collar 17 are a pair of upwardly-extending arms 19 and 20 (Fig. 3), the upper ends of which are connected by a rod 21. Stops 22 (Fig. 4) attached to the side walls of the cabinet limit the backward swing of the arms 19 and 20. A plate 23 formed with a vertical slot 24 is secured to the side of the beam 8, and the rod 21 extends through said slot, whereby depression of the arm or handle 18 through the rock shaft 15, arms 19 and 20, rod 21, and slotted plate 23, swings the beam 8 forwardly. Attached to the arm 20, or otherwise fast on the rock shaft 15, is a forwardly-extending arm 25 slightly curved upwardly as shown in Figure 4, to the free end of which a pull spring 26 is attached at its lower end, the upper end of said spring being secured to the side 13 of the cabinet by a pin 27. The function of the spring 26 is to rock the shaft 15 in a direction to raise the operating arm 18 and restore the moving parts to normal positions.

The dispensing mechanism hereinabove described is, in practice, preferably equipped with a coin-controlled locking and releasing mechanism for the swinging beam 8, this mechanism preferably comprising the following parts.

The sliding block 37 carries a coin receptacle 4 which extends through the slot 5 and registers with the upper end of a depending coin chute 3<sup>a</sup>, which is a flat tube of sufficient diameter to pass a nickel coin and is formed at its lower end with a delivery plate 6 (Fig. 7) having side flanges 7 to guide the coin to the extreme lower end of the chute and into the cash drawer 2. 3 designates a penny chute, the upper end of which is connected to and registers with the nickel chute 3<sup>a</sup>, and the lower end of which merges into the lower end of the nickel chute below the trip mechanism of the latter. The object of the penny chute 3 is, of course, to dispose of coins used in an attempt to cheat the machine. Attached to the lower end of the coin chutes as by means of a plate 45<sup>a</sup> (Fig. 7) is a shackle comprising a front plate 42 and parallel side plates 45 and 46 between which the beam 8 is adapted to swing. In the end plate 42 is a stud 44 on which a sheave 43 is journaled; said sheave being adapted to travel on the shaft 15. The side plate 46 is formed with an arcuate slot 48

struck from the axis of the trolley rail 11 as its center, in which slot travels a headed stud 49 attached to the beam 8 for loosely holding and guiding the latter. The side plate 45 is formed with an upstanding pointed finger 47 serving as a cam as hereinafter described, and the plate 46 is also formed at its inner end with a horizontal pointed finger 50 which also serves as a cam. The upper edge of the plate 46 is provided with a row of teeth 46' which cooperate with the nose of a pawl 51 that is pivoted on the side of the beam 8 by a pivot pin 52. Just above the pawl the beam 8 is formed with a vertical slot 8', and adjacent to the slot on the opposite side of the beam from the pawl bracket plate 53 are secured that support a pivot pin 54 on which is mounted a coin trip lever 47<sup>a</sup>. One arm of said lever extends through the slot 8' to a position to co-operate with the tail of the pawl 51. The other arm of the lever is bent at a right angle and extends through an arcuate slot 6' (Fig. 7) in the delivery plate 6 of the coin chute 3<sup>a</sup>, and preferably terminates in a head portion adapted to receive the impact of the coin. The last-mentioned arm of the lever 47<sup>a</sup> is formed with a slot 47<sup>b</sup> (Fig. 9) to receive the lower bent end of a spring latch 55 that is attached at its upper end to the side of the beam 8, and has for its function to hold the lever 47<sup>a</sup> in horizontal position and in locking engagement with the tail of the pawl 51, as shown in Figs. 7 and 8.

In Figs. 6, 7 and 8 the beam 8 is shown as at the limit of its rearward swing, which corresponds to the closed position of the commodity drawers, as shown in Fig. 4. A proper coin, such as a nickel, deposited in the chute 3<sup>a</sup> strikes and depresses the head of the trip lever 47<sup>a</sup>, raising the opposite arm of the lever out of locking engagement with the pawl. The operating arm 18 being then depressed, the beam 8 is free to swing forwardly, the pawl 51, the nose of which is normally held engaged with the teeth 46' by a pull spring 55, swinging on its pivot to the reverse position in which its nose trails over the teeth 46'. As the beam 8 swings to the right in Fig. 8, the cam 47 returns the trip lever 47<sup>a</sup> to horizontal position, which locks the pawl 51 in its trailing position; but at the end of the swing the pawl is again unlocked through engagement of the cam finger 50 with the other arm of the trip lever so as to permit the idle return movement of the beam 8 under the pull of the spring 26; and during such idle return movement, while the pawl is in the trailing position shown in Fig. 8, the cam finger 47 again actuates the trip lever to the pawl locking position, so that the beam cannot be again actuated until another coin has been deposited to release the trip mechanism.

No claim is herein made to the coin-controlled locking and releasing mechanism last above described, but the principal features

thereof form the subject-matter of an earlier application filed by me on the 17th day of August, 1925 under Serial No. 50,854.

I claim—

5 1. In a vending machine of the type described, the combination of a cabinet having vertical partitions dividing the same into a plurality of storage bins, sliding drawers underlying the respective bins, and drawer-actuating and locking mechanism comprising a  
10 horizontal trolley rail in the upper portion of said cabinet, a beam suspended by a trolley wheel on said rail, means for shifting said beam along said rail, pivoted latches on said  
15 drawers normally locking the latter closed, said latches having latch-actuating portions adapted for coupling engagement with the lower end of said beam when the latter is moved into register therewith, and means for  
20 swinging said beam in the direction of movement of said drawers.

2. In a vending machine of the type described, the combination of a cabinet having vertical partitions dividing the same into a  
25 plurality of storage bins, sliding drawers underlying the respective bins, and drawer-actuating mechanism comprising a horizontal trolley rail in the upper portion of said cabinet, a beam suspended by a trolley wheel on  
30 said rail, means for shifting said beam along

said rail, means on said drawers adapted for coupling engagement with the lower end of said beam when the latter is moved into vertical alignment with said drawers, a rock shaft journaled in said cabinet parallel with  
35 said trolley rail, beam actuating mechanism carried by said rock shaft having a sliding connection with said beam, and an operating handle on said rock shaft.

3. In a vending machine of the type described, the combination of a cabinet having vertical partitions dividing the same into a plurality of storage bins, sliding drawers underlying the respective bins, and drawer-actuating mechanism comprising a horizontal  
45 trolley rail in the upper portion of said cabinet, a slotted beam suspended by a trolley wheel on said rail, means for shifting said beam along said rail, means on said drawers adapted for coupling engagement with the  
50 lower end of said beam when the latter is moved into vertical alignment with said drawers, a rock shaft journaled in said cabinet parallel with said trolley rail, arms on said rock shaft, a rod mounted in said arms  
55 and extending through the slot of said beam, and an operating handle on said rock shaft.

In testimony whereof I affix my signature.

VICTOR H. KELLEY.