F. W. AND J. H. STICE.

VENDING MACHINE.

APPLICATION FILED OCT. 18, 1920.

1,398,283.

Patented Nov. 29, 1921.

2 SHEETS—SHEET 1.

Fig. 1

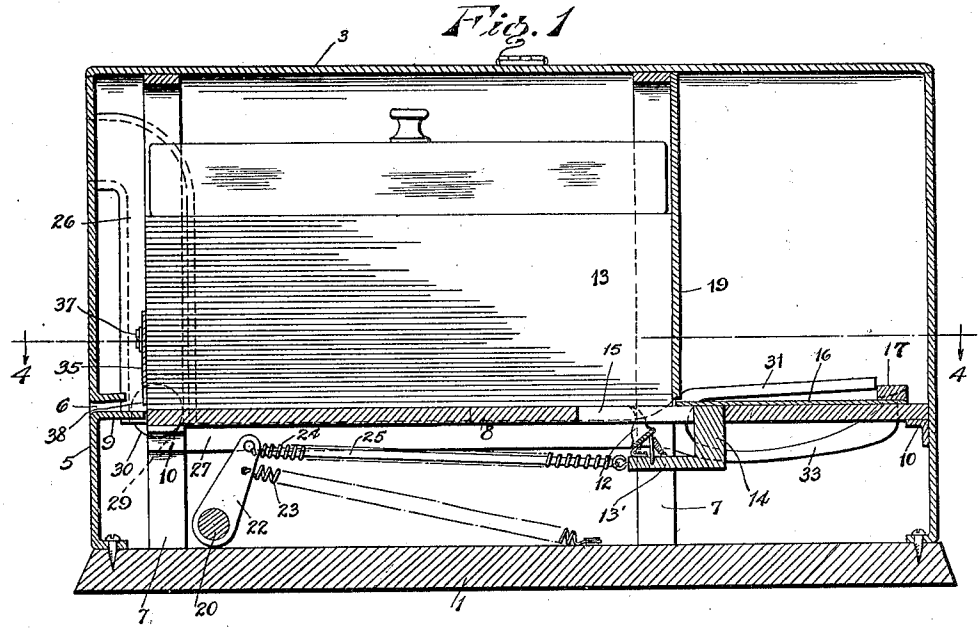
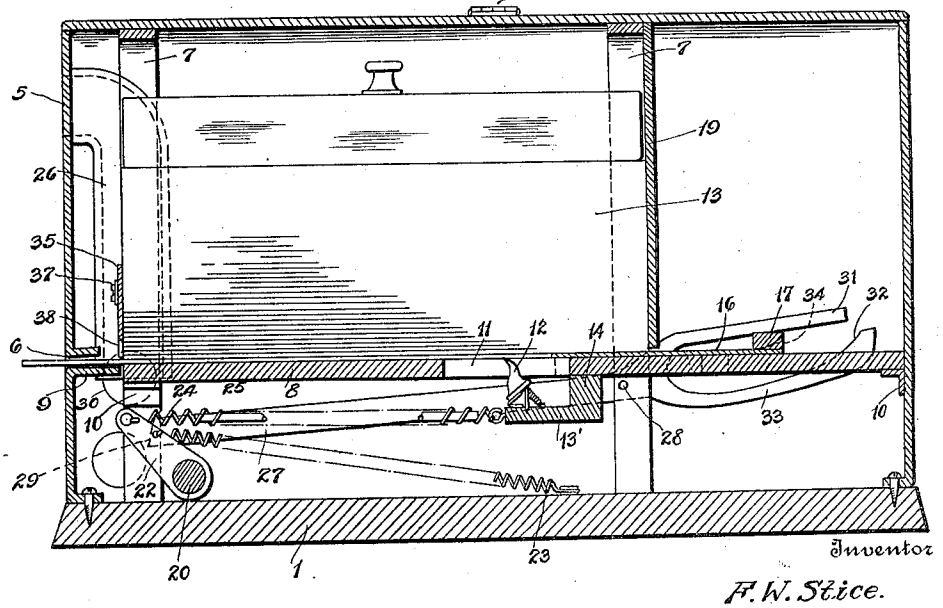


Fig. 2



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2 SHEETS—SHEET 2.

Fig. 3

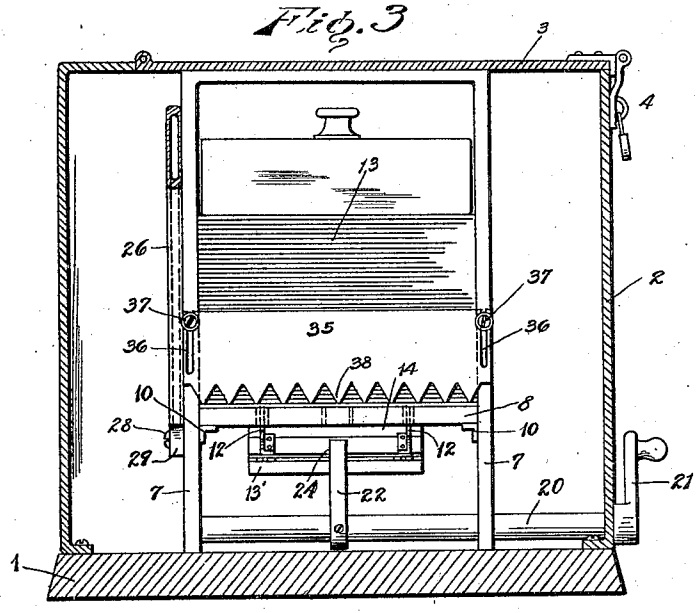
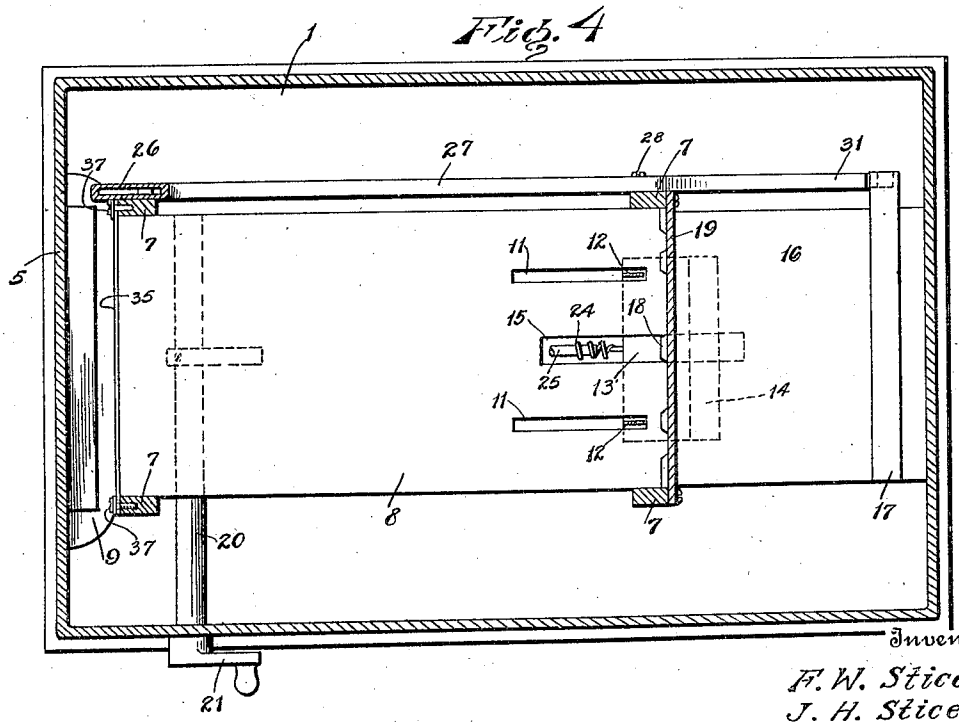


Fig. 4



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UNITED STATES PATENT OFFICE.

FRED W. STICE AND JESSE H. STICE, OF TAMA, IOWA.

VENDING-MACHINE.

1,398,283. Specification of Letters Patent. Patented Nov. 29, 1921.

Application filed October 18, 1920. Serial No. 417,537.

To all whom it may concern:

Be it known that we, FRED W. STICE and JESSE H. STICE, citizens of the United States, residing at Tama, in the county of Tama and State of Iowa, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

This invention relates to coin-controlled machines for vending post cards or small packages of merchandise and has special reference to the means for feeding the card or other package to the delivery point of the outer casing. One object of the invention is to provide simple means whereby an attempt to operate the delivery mechanism without previously depositing a coin will permit the delivery mechanism to remain inactive although the actuating lever may be moved without damage to any of the working parts. The invention also seeks to improve the coin-controlled means whereby the construction will be simplified and the delivery mechanism will be inoperative until a coin is deposited.

The several stated objects and other objects which will incidentally appear in the course of the following description are attained in such an apparatus as is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of our improved machine with the parts in the inactive normal position;

Fig. 2 is a similar view showing the position assumed when a package or a card is being delivered;

Fig. 3 is an end elevation with the end of the casing removed;

Fig. 4 is a horizontal section on the line 4—4 of Fig. 1.

In carrying out our invention, we employ a base 1 which may be of any preferred substantial form and upon the same we erect a housing or casing 2, the top 3 of which is preferably hinged and secured by a lock, indicated at 4, so that the stock of goods may be replenished when necessary and unwarranted access thereto will be prevented. In one end wall 5 of the housing or casing is a delivery slot 6 through which the package or card is pushed when the machine is properly operated, and within the housing we provide posts or standards 7 supporting a base plate 8, the upper surface of which is flush with a shelf 9 defining the lower wall of the delivery slot 6, as clearly shown in Figs. 1 and 2. Beams or other supports 10 may be secured to the posts or standards 7 to reinforce the floor 8 and in the said floor we provide longitudinal slots 11 through which ejector fingers 12 may rise to engage the bottom card of the stack of cards, indicated at 13, supported upon the floor or shelf 8. The ejector fingers 12 are so mounted upon a cross head 13′ that when they are moved toward the delivery end of the apparatus they will engage in the bottom card or package and will thereby positively feed the same to the delivery slot, but upon reverse movement they will yield to the stack of cards or packages and ride under the same without disturbing the goods. The cross head 13′ is arranged below the floor or plate 8 and is secured to or formed integral with a slide 14 which extends up into and is movable along a central longitudinal slot 15 in the floor 8, as shown in Fig. 4. Upon the upper side of the slide, we secure a pusher or plate 16 which is preferably of the same width as the floor or plate 8 and has secured upon its rear edge a cross bar 17, the end of which projects beyond one side edge of the plate, as shown in Fig. 4, and as will be presently more particularly set forth. The pusher plate 16 will preferably be equal in thickness to the cards or other packages which are to be sold from the machine and its front edge is provided with a plurality of projections 18 so that, while an effectual engagement with the article will be effected, mutilation of the card or other article will be avoided. It will be readily understood, of course, that the cards are piled evenly upon the floor or support 8 and are arranged against a back plate 19 secured to and extending between the inner posts or standards 7, said back wall or partition terminating at a point above the support 8 approximately equal to the thickness of the package or card to be delivered so that the pusher plate 16 may readily pass into engagement with the package or card but will be held to the supporting plate or floor so that buckling of the pusher and its resulting inoperativeness will be prevented.

Suitably journaled upon the base 1 of the device is an operating shaft 20 which has one end extended through the adjacent side of the housing and equipped with a crank 21 or other form of handle. In the central vertical plane of the stack of cards, this operating shaft 20 is equipped with a crank or

lever arm 22 and a spring 23 is attached at one end to the said crank or lever and at its other end to the base 1, as clearly shown in Figs. 1 and 2, whereby the crank will be normally held in its retracted position, shown in Fig. 1. A second spring 24 is also attached at one end to the crank or lever 22, and the other end of this spring is attached to the cross head 13, as shown, a rod 25 being disposed within and extending longitudinally of the said spring 24 so as to prevent sagging of the spring and also to act as a pitman or push rod when the operating handle is released so that the cross head 13 and the parts connected therewith will be returned to their initial positions. It will be readily understood from what has been said that when the handle 21 is thrown forward the shaft 20 will be rocked and the lever 22 swung to the position shown in Fig. 2 so that if a coin has been inserted and the delivery mechanism thereby released the fingers 12 and the pusher 16 will be drawn forward and one end of a card fed through the delivery slot 6 so that it may be grasped by the customer and withdrawn. In order to permit the delivery mechanism to be actuated, a coin must be inserted and a detent released, but the handle 21 and the shaft 20 may be rocked notwithstanding that no coin has been inserted. Such rocking of the shaft 20 will cause the crank or lever 22 to merely distend the springs 23 and 24 so that while the cross head and the parts connected thereto will remain at rest no strain will be exerted on them and breakage of any of the working parts will be avoided.

To permit the insertion of a coin and to provide for the release of the delivery mechanism after the coin is inserted, we provide a coin chute 26 having one end opening through the end wall of the housing and having its other end disposed adjacent one end of a detent lever 27. This lever is pivoted between its ends, as at 28, upon one of the standards 7 and has its end immediately adjacent the coin chute beveled, as indicated at 29, and normally projected slightly across the mouth of the chute so that a coin, indicated at 30, dropping through the chute will tilt the detent and release the opposite end of the same from its engagement with the stop bar 17. The rear end of the detent is bifurcated, as clearly shown in Figs. 1 and 2, and the upper arm 31 of the bifurcation is adapted to bear against the forward edge of the stop bar 17, as clearly shown in Fig. 1, so that movement of the said bar and the delivery mechanism to deliver a package or card will be positively prevented. Upon the insertion of a coin, however, the detent will be tilted whereupon the stop bar may move readily under the arm 31 as shown in Fig. 2 and a card or package be delivered. Upon return movement of the stop bar and the delivery mechanism, the rear side or edge of the projecting end of the stop bar will ride upon the inclined or beveled surface 32 of the lower arm 33 and will thereby depress said arm so that the detent will be swung about its fulcrum and return to its normal or initial position ready to be engaged and actuated by the insertion of another coin. When the proper coin is inserted the weight of the coin and its impact upon the free end of the detent suffices to raise the extremity of the arm 31 above the upper surface of the stop bar so that when the handle 21 is actuated to rock the shaft 20 the delivery mechanism will be drawn forward. To facilitate the releasing movement of the detent lever, the under surface of the stop bar may be beveled, as indicated at 34. The parts are so proportioned that while the stop bar on its return movement may impinge against the end of the arm 33, there is clearance between the stop bar and said arm when the detent is at rest, the combined weight of the arms 31 and 33 slightly overbalancing the forward portion of the detent so that the arm 31 will lie in the path of the stop bar and the forward extremity of the detent will partly close the exit of the coin chute.

Secured to and extending between the standards 7, adjacent the delivery end of the apparatus, is a gage plate 35 which is provided at its ends with vertical slots 36 through which set screws 37 are inserted into the standards 7 whereby the said plate may be adjusted vertically. The lower edge of the said plate is provided with a series of teeth 38, as shown most clearly in Fig. 3, and the plate is to be properly adjusted so that the points of these teeth will be spaced above the support 8 a distance sufficient to permit the passage of a single card or package and retain the superposed card or package in the stack of goods.

Having thus described the invention, what is claimed as new is:

1. In a vending machine, the combination of a delivery slide, a stop thereon, actuating mechanism yieldably connected with the slide, and a detent pivotally mounted between its ends adjacent the slide and provided at one end with an upper member normally in the path of the stop and with a lower member extending under the stop, the opposite end of the detent being disposed in the path of a coin whereby an inserted coin will rock the detent and release the stop.

2. In a vending machine, the combination of a slidable delivery mechanism, a detent normally restraining the delivery mechanism against movement and operable to release the same, an operating shaft mounted for

rocking movement, yieldable means for normally holding said rock shaft in inactive position, a radial arm on said shaft, and a yieldable connection between said radial arm and the slidable delivery mechanism.

3. In a vending machine, the combination of a slidably mounted delivery mechanism, means for normally restraining said mechanism against movement and operable to release the same, an operating shaft mounted for rocking movement, a radial arm on said shaft, a contractile spring connecting said arm with the slidable delivery mechanism, and a reinforcing rod fitted loosely within said spring.

In testimony whereof we affix our signatures.

FRED W. STICE. [L. S.]
JESSE H. STICE. [L. S.]