

March 23, 1954

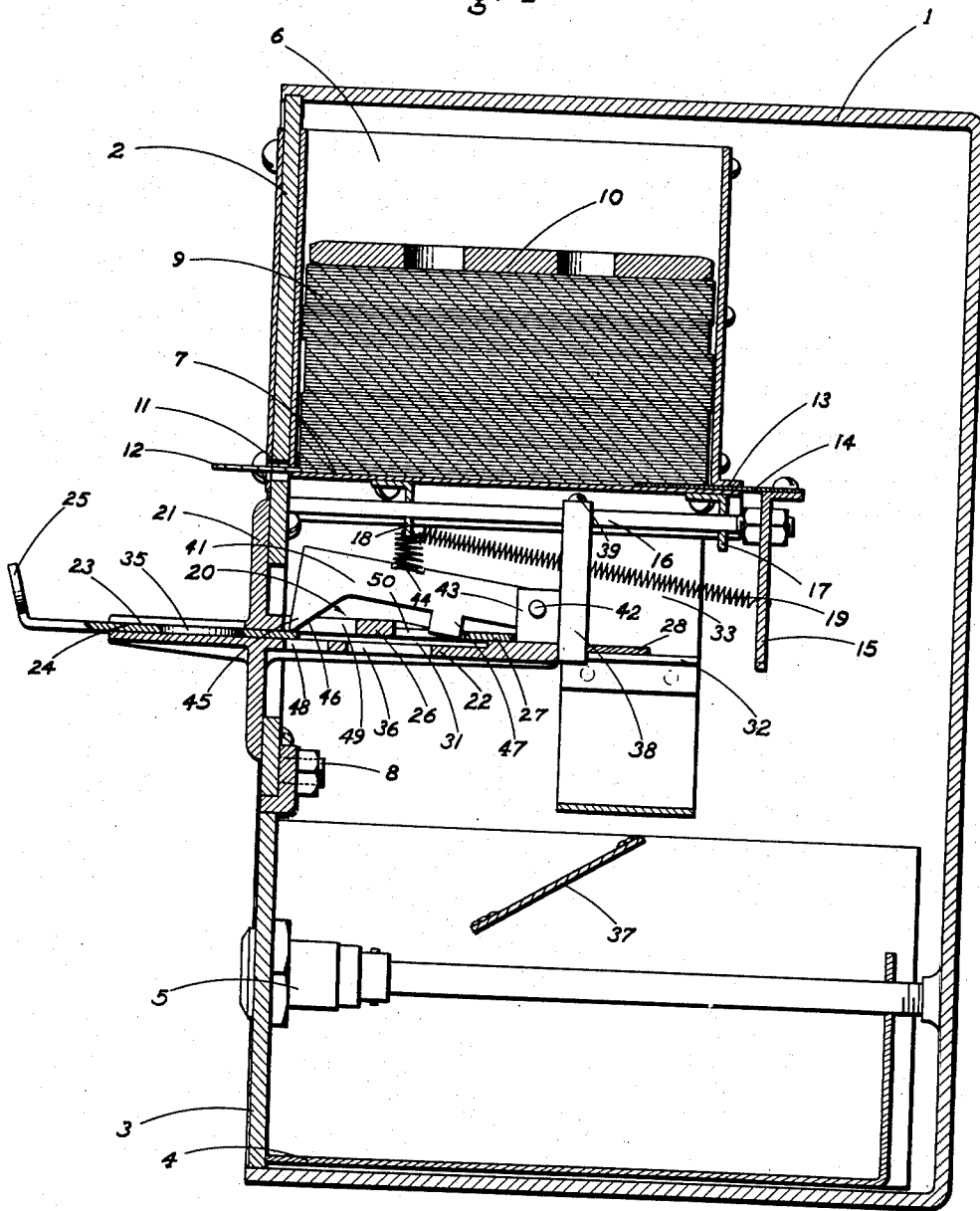
J. C. KOCH  
TICKET VENDING MACHINE

2,673,133

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3 Sheets-Sheet 1

Fig. 1



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3 Sheets-Sheet 2

Fig. 2

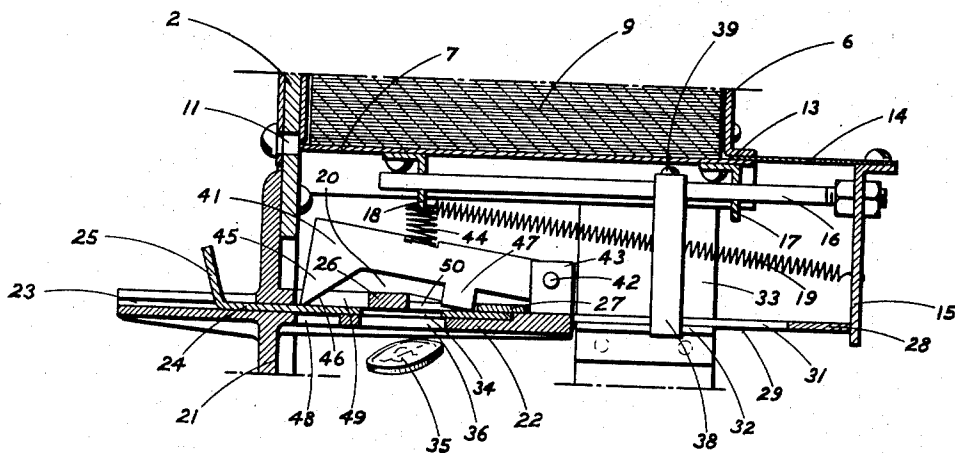
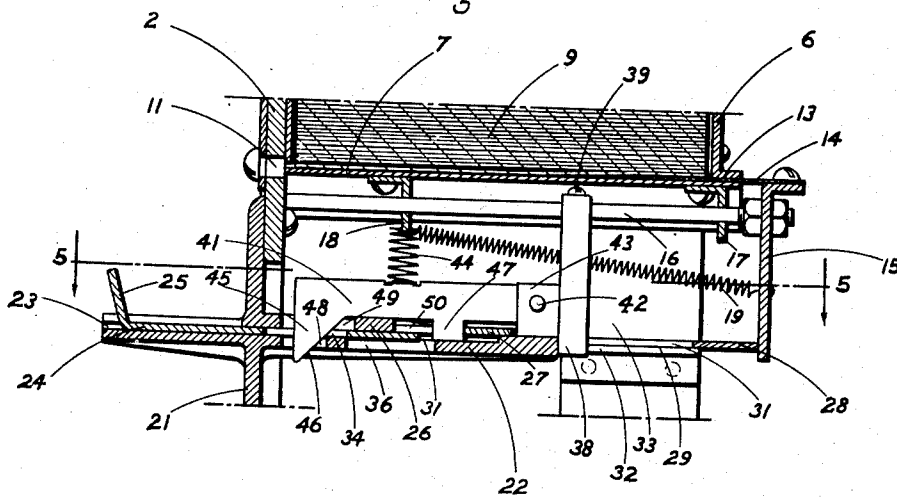


Fig. 3



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3 Sheets-Sheet 3

Fig. 4

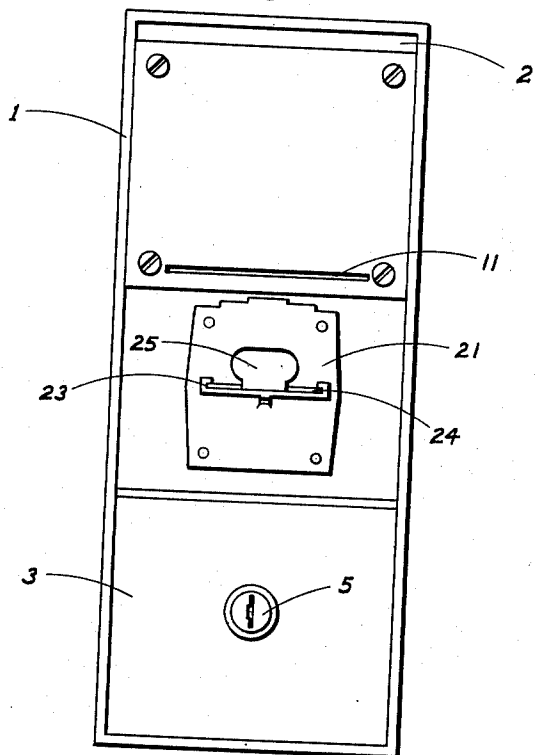
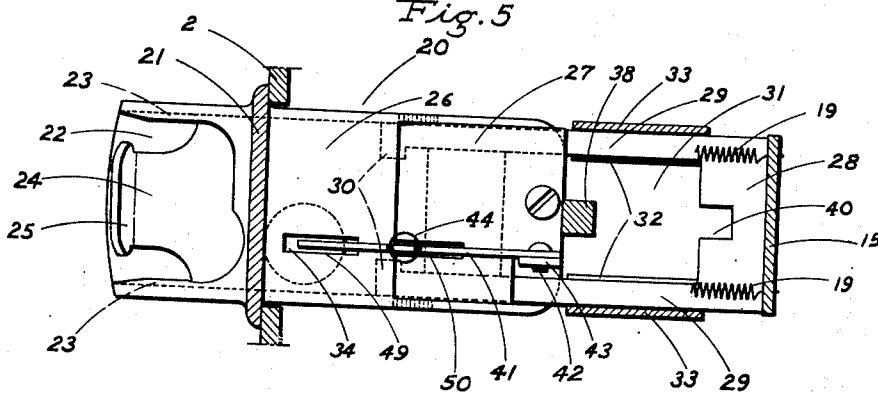


Fig. 5



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# UNITED STATES PATENT OFFICE

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## TICKET VENDING MACHINE

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Application December 17, 1951, Serial No. 262,069

1 Claim. (Cl. 312-55)

1

The present invention is directed to, and it is a major object to provide, a novel machine for vending tickets which are in the form of thin, but relatively stiff rectangular cards.

While the instant invention is especially designed for use to deliver cards, as tickets, at an automobile parking lot of self-service type, the machine obviously is capable of many different uses.

Another important object of the invention is to provide a ticket vending machine which is arranged to dispense a ticket only in response to a coin controlled manual operating mechanism; the latter including features of advantage.

An additional object of the invention is to provide a ticket vending machine, as in the preceding paragraph, wherein the manual operating mechanism includes a novel coin receiving slide unit; there being means arranged to prevent said slide unit being freely operative except upon placement of a coin therein.

A further object of the invention is to provide a ticket vending machine which embodies a card dispensing assembly which is simple in structure but smooth in action, with the chance of a "miss" or a "jam" being reduced to a minimum.

Still another object of the invention is to provide a ticket vending machine which is designed for ease and economy of manufacture.

It is also an object of the invention to provide a practical and reliable ticket vending machine, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawings:

Fig. 1 is a sectional elevation of the ticket dispensing mechanism, with a card as dispensed, and the parts of the mechanism in position to start the next dispensing operation.

Fig. 2 is a fragmentary sectional elevation showing the slide as advanced to deliver a coin into the mechanism, and preparatory to retraction of the slide and dispensing of the card.

Fig. 3 is a similar view, but shows the manner in which the slide is locked against full operation when it is attempted to be advanced without a coin.

Fig. 4 is a front elevation of the ticket vending machine.

Fig. 5 is a fragmentary sectional plan on line 5-5 of Fig. 3 showing mainly the coin receiving slide unit.

2

Referring now more particularly to the characters of reference on the drawings, the novel ticket vending machine comprises an upstanding rectangular housing 1 which includes a front wall 2; the lower portion of such front wall being in the form of a removable panel 3 which constitutes the front of a coin box 4 secured in the lower end of said housing 1 by a screw lock 5.

Some distance above the coin box 4, i. e. in the upper portion of the housing 1, the latter is fitted therein with an open-topped hopper 6 which is rectangular in plan; such hopper being attached to the front wall 2 and including a floor 7. The front wall 2 above the removable lower panel 3 is likewise removably mounted by means which includes a securing bolt 8 accessible only from within the housing; i. e. through the open space existent when the coin box 4 is withdrawn.

The rectangular hopper 6 is adapted to contain a stack of relatively thin, stiff cards 9 which are rectangular in plan and which serve as the tickets; there being a follower weight 10 which rests atop such stack in the hopper 6.

The cards of the stack 9 are adapted to be dispensed, one at a time and from the bottom of such stack, through a transverse, card discharge slot 11 in the front wall 2; a card as fed through such slot for withdrawal being indicated at 12.

The following assembly is employed to dispense the lowermost card of the stack 9 through the slot 11:

At the rear thereof and directly above the floor 7 the hopper is formed with another transverse slot 13 through which a horizontal pusher plate 14 engages in slidable relation; such pusher plate being no thicker than each card and adapted to reciprocate between a position projecting partly beneath the stack 9, as in Fig. 1, and a retracted position clear of such stack, as in Fig. 2. It will be recognized that with each reciprocation of the pusher plate 14 starting from the position as in Fig. 1, a card will be discharged, as at 12, from the hopper 6 through the slot 11 for manual engagement and withdrawal from exteriorly of the housing 1.

A depending attachment plate 15 is fixed on the rear exposed end of the pusher plate 14, and a guide rod 16 is fixed to the upper portion of said plate 15 and projects forwardly in guided relation through longitudinally spaced ears 17 and 18 which depend from the floor 7 of the hopper 6.

Transversely spaced tension springs 19 connect between the depending attachment plate 15 and the ear 18, tending to urge the pusher plate 14 to its advanced position, as in Fig. 1.

The above described card dispensing assembly is actuated or caused to reciprocate by means of a coin controlled, manual operating mechanism disposed below the hopper 6 and constructed as follows:

A longitudinal, horizontally disposed guideway, indicated generally at 20, and of substantial width, is mounted in connection with the front wall 2 by a front attachment plate 21; the guideway projecting both outwardly and inwardly from said latter plate.

The guideway 20 includes a bottom 22 and laterally inwardly opening grooves or channels 23 on opposite side edges.

A flat, coin slide 24 having an upturned finger tab 25 on its outer end engages in the channels 23 of the guideway 20 from the outer end thereof; the tab 25 thus being exposed exteriorly of the housing 1 for manipulation.

The slide 24 is of such length that it extends into the housing 1 a substantial distance, running inwardly of the front wall 2—beneath a fixed cover 26 on the guideway 20 and a removable cover 27; the latter being disposed rearwardly.

The slide 24 includes a flat rearward extension 28 which is generally U-shape in plan and initially separate for ease of manufacture; such extension including forwardly projecting side arms 29 which extend under the removable cover 27 and couple to the rear portion of the slide 24 by inturned finger and notch connections 30.

With this arrangement the rearward extension 28 provides a wide longitudinal slot 31 open for a substantial distance rearwardly of the slide 24.

The side arms 29 of the rearward extension 28 are supported from below on horizontal flanges 32 carried by side plates 33 which depend from the hopper 6.

The slide 24 is formed with a coin receiving opening 34 which is accessible exteriorly of the front wall 2 when said slide is in its starting or retracted position. As the slide 24 is advanced with a coin 35 in the opening 34, such slide travels to a point at which the coin opening 34 registers with a coin-drop opening 36 in the bottom 22 of the guideway 20; the coin then dropping through opening 36 into the coin box 4.

The numeral 37 indicates a coin deflector disposed in a position to deflect the coins into the forward part of said coin box.

As the slide 24 is advanced to the coin discharge or release position, as above, the rear end of the slide extension 28 engages the depending attachment plate 15 and pushes it rearwardly a distance to impart to the pusher plate 14 a full retracting stroke; i. e., sufficient to clear said pusher plate 14 from the stack 9.

Thereafter, as the slide 24 is retracted to its starting position, the tension springs 19 tend to advance attachment plate 15 and the pusher plate 14 to impart a forward or advancing stroke to the latter, whereby to discharge a card, as at 12, from the machine. As the springs 19 may not have sufficient load in themselves to accomplish the card discharging stroke of the pusher plate 14, a rigid depending leg 38 is adjustably secured on the guide rod 16 by a set screw 39, and depends through the slot 31. With manual retraction of the slide 24, and before it reaches the limit of such motion, the leg 38, which is square in sectional plan, is matchingly engaged in a notch 40 in the rearmost portion of the rearward extension 28, and is advanced with the

slide to an extent necessary to complete a full advance of the pusher plate 14, with resultant discharge of a card.

The outer limit of retracting motion of the slide 24 is obtained by the leg 38 abutting the rear end of the guideway 22, as in Fig. 1.

In order to prevent dispensing of a card by actuation of the slide 24 when no coin is placed in the coin receiving opening 34, the following automatic blocking mechanism is employed:

A longitudinal locking arm 41 is disposed above the guideway 20 inwardly of the front wall 2, and such locking arm 41 is pivoted at its rear end, as at 42, to an upstanding ear 43 on the cover 27. The locking arm 41 is urged downwardly by a compression spring 44 between the ear 18 and the upper edge of said arm intermediate its ends.

At the front the locking arm 41 is formed with an integral downwardly projecting dog 45 tapered, as shown, to form an inclined cam 46 on its rear edge.

Intermediate its ends the locking arm 41 is also formed with a rectangular, downwardly projecting dog 47. The lower end of the dog 45 rides atop the slide 24 in alignment with the coin receiving opening 34, and if no coin is in such opening as the slide is advanced, said dog 45 falls through opening 34 and a then registering opening 48 in the bottom 22 of the guideway 20. See Fig. 3.

At the same time, the dog 47 lowers to a position which blocks further advancing motion of the slide 24; i. e. blocks the slide against the motion which would otherwise cause retraction of the attachment plate 15 and pusher plate 14.

When the slide 24 is subsequently pulled forward or retracted, the inclined cam edge 46—by reason of its engagement with the adjacent portion of the slide—causes the locking arm 41 to swing upwardly to its normal inoperative position; it being recognized that when the slide is advanced with a coin 35 in the coin receiving opening 34, such coin prevents the dog 45 from falling through said opening 34 and the opening 48, holding the dog 47 in an inoperative position clear of said slide. The opening 48 is smaller than the opening 34 so that the coin 35 may pass over said opening 48 without dropping through the latter.

The dogs 45 and 47 work downwardly of course through slots 49 and 50 in the covers 26 and 27, respectively.

The structure of the card dispensing assembly, and the coin controlled, manual operating mechanism—while being effective in operation—nevertheless is relatively simple in structure, and designed for convenience of manufacture and installation.

The described vending machine provides a practical, positive, smooth-acting mechanism for dispensing cards. The machine is especially designed for dispensing cards used as tickets; one adaptation being the dispensing of tickets for use in self-service parking lots. The patron, by depositing a coin and manipulating the machine, obtains a ticket which he then places in the driver's compartment at a point where it can readily be seen and then locks the automobile. An attendant who visits the lot at infrequent times need only check the automobiles there parked in order to be sure that each patron has purchased and used a ticket in the manner described.

From the foregoing description it will be read-

5

ily seen that there has been produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations therefrom may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claim.

Having thus described the invention the following is claimed as new and useful, and upon which Letters Patent are designed.

In a card dispensing apparatus having a front wall and a pusher plate whose forward movement dispenses a card from the apparatus, an element depending from and rigid with the pusher plate, a slide plate parallel to and below the pusher plate projecting through the front wall for actuation from outside the same, means mounting the slide plate on the apparatus in position to engage said element and retract the pusher plate to a card-clearing position, spring means connected to the pusher plate to advance the same and at the same time cause the slide plate to be moved forwardly, a horizontal guide rod fixed with the pusher plate, and a leg depending from and adjustably mounted on the rod and projecting through a longitudinal slot in the

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slide plate; the slot being arranged so as to cause the pusher plate to be positively pulled forwardly to its limit of movement upon similar movement of the slide plate while providing for a predetermined extent of rearward movement of the slide plate from said forward limit of movement before the slide plate engages the depending element.

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