July 13, 1926. 1,592,720

R. BUTLER

PACKAGE DISPLAY AND VENDING MACHINE

Filed April 12, 1923 2 Sheets-Sheet 1

Fig 1.

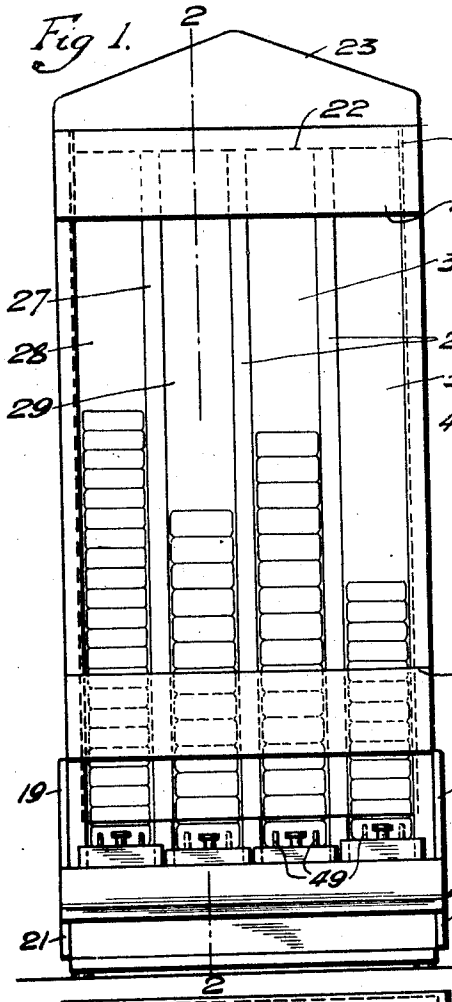


Fig 2.

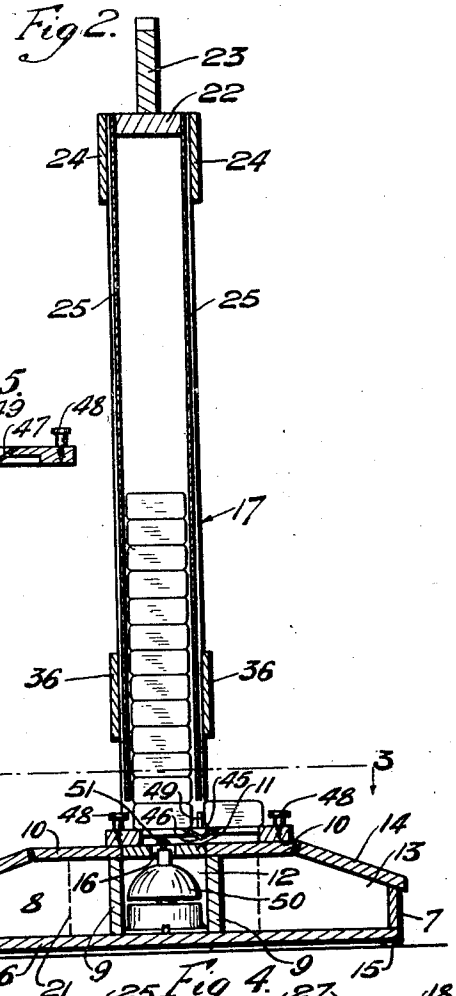


Fig 5.

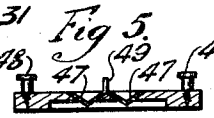


Fig 3.

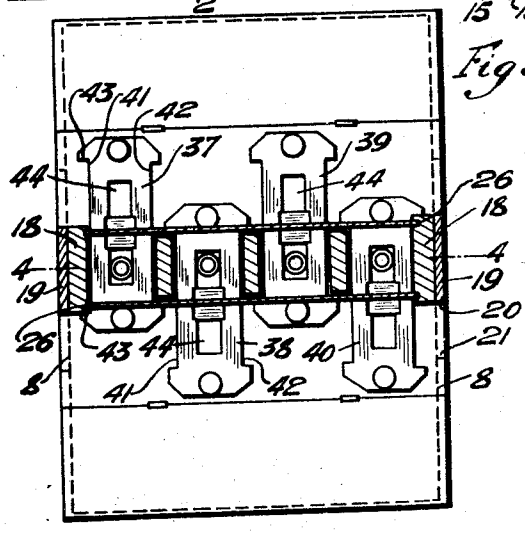
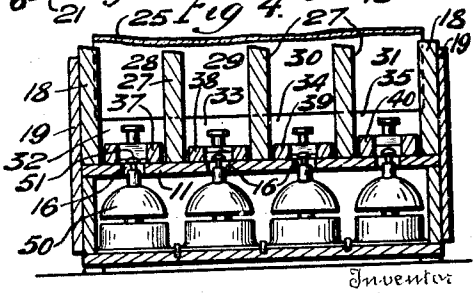


Fig 4.



Inventor

Rostus Butler

By

Attorney

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R. BUTLER

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Fig 6.

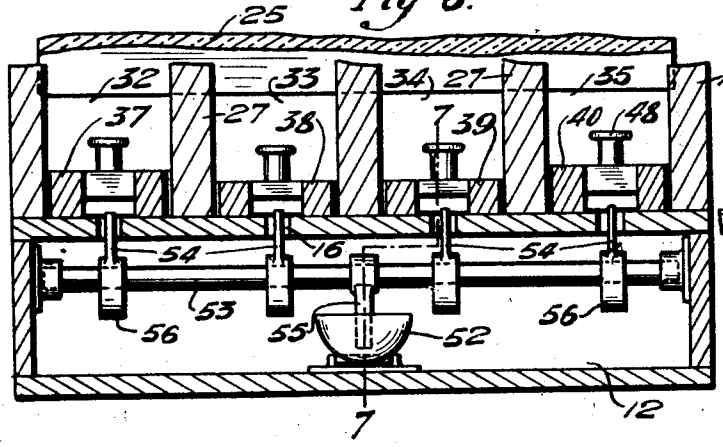


Fig 7.

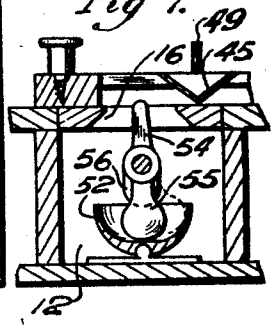


Fig 8.

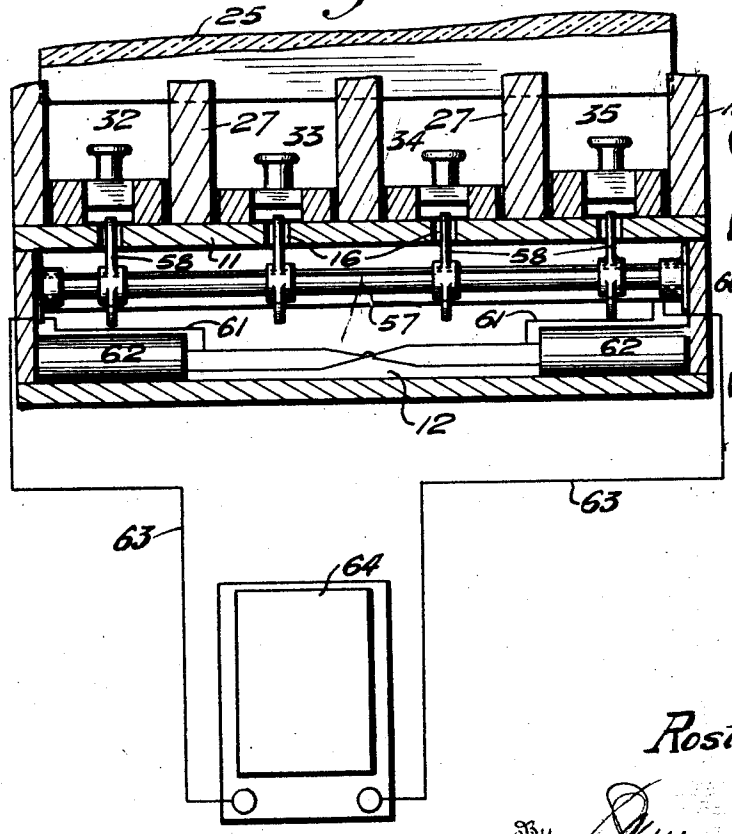
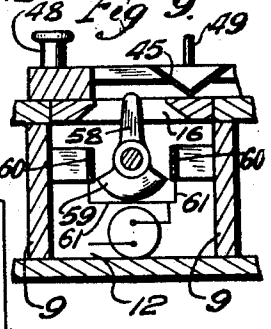


Fig 9.



Inventor
Rostus Butler

By James L. North
Attorney

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UNITED STATES PATENT OFFICE.

ROSTUS BUTLER, OF CLINTON, NORTH CAROLINA.

PACKAGE DISPLAY AND VENDING MACHINE.

Application filed April 12, 1923. Serial No. 631,710.

This invention relates to package display and vending machines generally adapted for the reception and discharge of various commodities such as groceries, pharmaceutical, toilet and other articles in bags, packages, cartons and similar enclosures, but has been particularly devised for holding and vending packages of cigarettes and other tobacco products.

The primary object of the invention is to display packages in groups of various thicknesses and individually deliver the packages by easily operated means constructed to compensate for the difference in thickness of the packages and at the same time give an audible signal or indication that the packages have been discharged. A further object of the invention is to provide a comparatively simple and effective package display and vending machine, cabinet or stand of a portable character that may be conveniently placed on a counter or other support and charged with packages of various thicknesses, arranged in segregated similar brands or kinds, and obstruct the discharge of a package from any one of the groups thereof without giving notice by audible means. A further object of the invention is to provide a portable cabinet or display stand having a series of vertical compartments with transparent enclosures on opposite sides, to give full view of the contents of the compartments and also to associate delivery slides in independently operable relation with the lower portions of the compartments, to individually remove packages from the lower extremities of the compartments and place the packages at either side of the cabinet or stand for ready removal, and by the movement of the several slides, to operate signal means to indicate or give notice that a package has been discharged from any one of the compartments, and also to inform a store proprietor or clerk during occupancy at a point distant from the improved cabinet or stand that a package has been discharged and removed either by a purchaser or someone inclined to irregularly obtain or pilfer a package.

With these and other objects and advantages in view, the invention consists in the preferred construction and arrangement of parts which will be more fully hereinafter described and claimed.

In the drawings:

Fig. 1 is a side elevation of a vending machine or cabinet embodying the features of the invention;

Fig. 2 is a transverse vertical section on the line 2—2, Fig. 1;

Fig. 3 is a horizontal section on the line 3—3, Fig. 2;

Fig. 4 is a longitudinal vertical section on the line 4—4, Fig. 3, and particularly showing the lower portion of the machine or cabinet to illustrate one form of signal means for the slides;

Fig. 5 is a detail longitudinal vertical section of one of the slides, showing a modification thereof;

Fig. 6 is a longitudinal vertical section through the lower portion of the cabinet on an enlarged scale and showing a modified form of signal operating means;

Fig. 7 is a transverse vertical section on the line 7—7, Fig. 6;

Fig. 8 is a view similar to Fig. 6, showing a further modification of the signal means; and

Fig. 9 is a transverse vertical section through a portion of the structure shown by Fig. 8.

The numeral 5 designates a supporting base consisting of a suitable framework enclosure having a bottom 6, ends 7, sides 8, vertical partitions 9 in spaced relation at the center, and top closures 10 and 11. The base is of hollow construction and the partitions 9 extend fully across the same, and confined between them and portions of the sides 8 is a central compartment 12. The partitions 9 also form the inner walls of opposite end compartments 13, which have hinged covers 14 adapted to close down against the upper edges of the ends 7, the said compartments 13 being adapted to receive suitable articles, or serve as storage spaces for any devices that may be desired to be disposed therein. The top members 10 terminate at their edges coincident with the inner sides of the vertical partition strips 9, and between them is the top member 11. Suitable feet or supports 15 are secured to the corners of the bottom 6, to hold the latter and the base elevated above the top of a

counter or other support on which the improved device may be placed. In the form of the device shown by Figs. 1, 2, 3 and 4, the central top member has slots 16 therethrough at regular spaced intervals, for operating an audible signal or notifying means, which will be presently explained. Rising from the center of the base 9, just described, is a superstructure 17, which serves as the receptive and displaying part of the improved vending machine, and comprises vertical solid end members 18 having depending strips 19 secured to the lower portions thereof, to removably engage recesses 20 formed between the inner edges of retaining strips 21 secured to the opposite sides 8 of the base. The strips 19 are removably held in the recesses 20, to permit the superstructure 17 to be readily lifted from and applied to the base as may be desired, particularly during transportation or storage of the improved machine, or to enable the top portion of the base and the devices working thereon to be easily reached or rendered accessible for repair or other purposes. The upper extremities of the ends are firmly united by a cross strip 22, which has its upper surface preferably flush with the upper terminals of the end members or strips 18, and rising from the center of the strip 22 is a vertically disposed head strip 23 of suitable configuration and adapted to receive any suitable advertising matter and also serving to give the top of the machine a finished appearance. Extending across the upper side portions of the superstructure 17 and also secured to the members or strips 18 are comparatively thin strips 24, which materially add to the strength of the upper portion of the superstructure and cover the upper ends of front and rear glass panels 25 removably fitted in grooves 26 formed in and opening through the inner sides of the vertical members or strips 18. Between the vertical members or strips 18 are a series of partition strips 27 forming compartments 28, 29, 30 and 31. The partition strips 27 extend fully from the top of the base and bear on the center member 11, as clearly shown by Fig. 4. The lower ends of the glass panels 25 terminate above the center member 11 of the top of the base, and by this means spaces 32, 33, 34 and 35 are provided transversely under the several compartments and between the end members or strips 18 and partitions 27. The superstructure 17 is also reinforced near its lower extremity by thin cross strips 36 secured to the opposite edges of the vertical members or strips 18 and extending fully across the opposite sides of the said superstructure. The vertical end members or strips 18 are wider than the vertical partitions or partition strips 27, and the grooves 26 are at such distances apart in the inner sides of the opposing vertical members or strips 18 that the glass panels 25 are held clear of contact with the opposite edges of the partition strips 27, to facilitate removal or withdrawal of the said glass panels, or at least one of these panels, and permit the several compartments to be charged with packages, cartons or other articles desired to be arranged therein. In other words, the glass panels are so mounted that they will be positively held in applied position but will be prevented from sticking or adhering to the partition strips 27 during removal or withdrawal thereof and, conversely, when re-disposing the said panels in normal positions in the superstructure. The removability of the panels 25 not only renders the several compartments 28, 29, 30 and 31 easily accessible for charging the same, but also provides for the replacement of the said panels in the event of breakage. In removing the panels 25 they are drawn upwardly through the top of the superstructure 17, and in replacing the same they are applied at the same point and pushed downwardly into place, or until they reach the lower ends of the grooves 26, which terminate at a distance above the top of the base, as clearly shown by Fig. 2, to provide the open spaces 32, 33, 34 and 35, as hereinbefore specified.

The upper surfaces of the top members 10 and 11 of the base 5 are horizontally flat and coincide, and thereon are mounted discharging slides 37, 38, 39 and 40, which respectively operate through the openings or open spaces 32, 33, 34 and 35. These slides are of uniform length and essentially similar in construction, the two outermost slides 37 and 40 being thicker than the intermediate slides 38 and 39. The slides 37, 38, 39 and 40 all have the same range of movement outwardly beyond the opposite glass panels 25, or the opposite edges of the vertical members or strips 18 and the opposite side edges of the slides have longitudinal recesses 41 and 42, to form opposite stop shoulders 43, the outer recesses 41 in each of the slides 37 and 40 being longer than the inner recesses of the same slides and the recesses of the intermediate slides 38 and 39. This difference in length of the recesses in the outer sides of the outer slides 37 and 40 is necessary in view of the fact that the vertical members or strips 18 are wider than the partitions 27 between the said strips. The opposite edges of the vertical members or strips 18 and of the partitions 27 are adapted to be engaged by the shoulders 43 of the slides, to limit their movement in opposite directions. However, when each slide is fully operated, it is projected far enough beyond either of the panels 25 to completely discharge a package from the compartment with which it is mounted to cooperate. Each slide also has a central longitudinal slot 44 there-

through and extending throughout a portion of the length thereof, and centrally mounted in this slot is a downwardly extending angular projection 45, preferably of substantially V-shape as clearly shown by Fig. 2. This projection 45 is formed of thin sheet metal, preferably steel, and the lowermost angular terminal 46 thereof is at such distance above the top of the base as not to interfere with the free movement of the slide in opposite directions. In the modification shown by Fig. 2, there are two of these angular projections 47 in the slot. At the opposite ends of each slide are upwardly projecting actuating knobs or grips 48, for conveniently and effectively moving the slide, and at an intermediate point in a proper position relatively to the two ends of each slide are upstanding pins 49, which are disposed on opposite sides of the slot in the slide, to alternately engage opposite side portions of the packages in the compartment under which the slide is disposed, and whereby when the slide is moved in one direction, one package from the compartment will be pulled out in a position wholly clear of, or fully discharged from, the compartment, and on the reverse movement of the slide, the pins 49 push the succeeding package out from the lower portion of the compartment beyond the opposite side of the superstructure. It will therefore be seen that one full stroke, forwardly and backwardly, will result in the discharge of two packages from the compartment with which the slide is mounted to cooperate.

In the central compartment 12 of the base in the form of the device shown by Figs. 1, 2, 3 and 4, signal or indicating means are mounted and consist of a plurality of call bells 50 of well known construction and having movable headed stems 51 projecting upwardly through the slots 16 in the central member 11 of the top of the base, the upper headed ends of these stems normally projecting far enough above the upper surface of the central member 11 to be engaged by the depending angular projections 45 of the slides and effect a depression of the stems and striking of the bells in a manner well understood. The depending front and rear angular sides of the projections 45 cause the latter to easily ride over and suddenly depress the stems 51, so that each bell is actuated to give an audible signal both on the forward and return movement of each slide. In the modification shown by Fig. 5, wherein two projections 47 are used similar to the single projection 45, each bell is caused to give a double ring or audible signal by each movement of the slide thus constructed.

The difference in thickness of the slides 37 and 40 relatively to the intermediate slides 38 and 39 is to compensate for packages of different thicknesses, the thicker slides 37 and 40 being mounted in the lower disharge openings 32 and 35 of the compartments 28 and 31 in which thinner packages of cigarettes or other commodities are stacked, and the thinner slides 38 and 39 are disposed to operate in conjunction with thicker packages placed in the two intermediate compartments 29 and 30. By thus providing for a difference in thickness of packages, uniformity in dimensions of the discharge openings 32, 33, 34 and 35 may be maintained and the lower edges of the glass panels do not have to be modified by formation of recesses therein to accommodate discharge from the different compartments of packages varying in thickness, with obvious advantages in the general structural arrangement of the several parts and particularly the glass panels.

Figs. 6 and 7 show the same general structural features except the means for operating the audible signal, and in this instance instead of the plurality of bells which will be embodied in the construction shown by Figs. 1, 2, 3 and 4, a single bell 52 will be mounted in the compartment 12 and have disposed thereover a rock shaft 53 with a plurality of striking arms 54 secured thereto and projecting upwardly through the slots 16. Over the single bell 52 a depending bell striker 55 will be mounted within the bell, as shown by Fig. 7, so that the movement of the shaft 53 in either direction will result in the striker 55 engaging the bell 52 at opposite sides and giving an audible signal. This simplified audible signal producing means materially reduces the expense of production and is just as efficient in service. The shaft 53 and striker arms 54 will always return to normal position, in view of the fact that each of the striker arms has a depending counterpoise or weight member 56, and likewise, the striker 55 itself will serve as a counterpoise, and when the striker arms 54 are unengaged, they will assume the normal position clearly shown by Fig. 7.

Figs. 8 and 9 show an electric type of audible signal, and in this instance an oscillating or rocking shaft 57 is mounted to freely operate below the center of the top member 11 within the compartment 12. The shaft 57 also has fixed thereon at intervals upwardly projecting striker arms 58, which extend through the slots 16 in the top member 11 and are continuous with lower counterpoise contact members 59, the shaft 57 and striker arms 58 with their contact members 59 being disposed between opposite contact strips 60 secured to the inner sides of the partitions 9 and electrically connected by suitable wires 61 to a battery or cells 62, and included in the circuit by means of wires 63 is a bell or buzzer 64. The battery cells 62 will be coupled up as

shown, and in practice the electrical signal device 64 will be mounted within the compartment 12, this electric signal device 64 being shown diagrammatically exteriorly of the compartment by Fig. 8 in order to clearly illustrate the operation. In the operation of this electrical signal means the actuation of either of the striker arms 58 in either direction by the slides mounted to coact therewith will cause the counterpoise contact members 59 to engage either contact strip 60 and close the circuit and thereby actuate the electrical signal device 64. The construction and arrangement of the modifications as shown by Figs. 6, 7, 8 and 9, aside from the signaling means particularly specified, is precisely the same as in the structure shown by Figs. 1, 2, 3 and 4, and similar reference characters have been applied to corresponding parts.

From the foregoing the use and operation of the device will be readily understood. The several compartments 28, 29, 30 and 31 are first charged with packages desired to be held thereby, and after this preliminary preparation and replacement of the glass panel that may have been withdrawn for the purpose of facilitating the introduction of the packages in the compartments, the machine will be ready for operation. The packages in the several compartments are in full view of the purchaser as well as the vender, and when a call is made for a particular brand of cigarettes or any other packaged commodity or material that may be arranged in the machine for vendition, the attendant will operate the slide corresponding to the goods or particular brand of cigarettes, for instance, that may be desired, and the package will be drawn from the lower end of the stack in the compartment corresponding to the slide operated and may be removed by the attendant and handed to the purchaser, or the purchaser himself may remove the same from the slide. This operation is similar in all of the slides, and as hereinbefore explained, each full stroke of each slide will result in the complete discharge of a package from the compartment, for the reason that as soon as one package is removed from either of the compartments, the remaining packages will gravitate and the lowermost package will rest upon the slide ready for discharge by further operation of said slide.

It is proposed to construct the improved machine with as many compartments as may be desired and to modify the general dimensions of the compartments and other parts of the machine, including the slides, to accommodate packages or enclosures of various kinds. As hereinbefore indicated, the signal means forming part of the improved machine will indicate the full discharge of a package when the slide is regularly operated by an attendant or by a purchaser, in the event the attendant may be at a distance from the machine or occupied in making other sales. The improved signal will also be found exceptionally advantageous in giving notice to a proprietor or clerk or attendant in the event an attempt is made to pilfer a package from any one of the compartments by operating the slide thereof. The audible signal means will always operate with certainty, as there is no way to move a slide without actuating the signal means. Moreover, the signal means will serve as an advantageous sales novelty and the improved machine as a whole is of such comparative simplicity of structure that it may be used at times as an advertising medium for commercially introducing some particular commodity. A further change that may be made in the improved machine is to construct all of the slides of a uniform thickness, and it is also possible to replace the slides as found necessary by simply removing the superstructure from the base and substituting the slide that may be desired for use in lieu of one that has been in operative association with the machine.

What is claimed as new is:

1. In a package display and vending machine, the combination of a base having a flat top, a superstructure disposed on the base and of less width than the length of the base, the superstructure being disposed centrally with relation to the base and provided with front and rear transparent panels and a series of upright partitions of uniform distance apart and the outer partitions of the same distance from the ends of the superstructure, the lower edges of the transparent panels terminating in transversely straight edges at equal distances above the horizontal top of the base, slides transversely movable in reverse directions between the partitions and the ends of the superstructure through the lower uniform openings between the lower edges of the transparent panels and the top of the base, the said slides directly bearing upon the horizontal top of the base and varying in vertical extent or thickness so as to provide for the delivery and removal of packages differing in thickness, not more than one package being removed with each operation of the respective slides, and means operative by the movement of the slides for notifying a vendor of a nefarious attempt to remove a package.

2. In a package display and vending machine, the combination of a base having a horizontally flat top, a superstructure disposed on the center of the horizontal top of the base and comprising a plurality of compartments for receiving packages, a plurality of slides directly bearing and movable upon the horizontal top of the base through the lower portions of the superstructure,

each slide having a depending triangular member presenting opposite inclined faces, the horizontal top having transversely spaced openings therein over which the triangular members of the slides have movement, and signal means enclosed within the base and having projecting devices extending upwardly through the said openings for engagement by the triangular members, the inclined surfaces of the triangular members contacting with the projecting means and riding over the latter both during the forward and rearward movements of the slides.

In testimony whereof I have hereunto set my hand.

ROSTUS BUTLER.