United States Patent

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[54] **MULTIPLE COIN PAWL FOR COIN OPERATED LOCK**
5 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **194/54**
[51] **Int. Cl.** **G07f 5/00**
[50] **Field of Search** 194/.01, 54, 71, 92, 102

[56] **References Cited**

UNITED STATES PATENTS

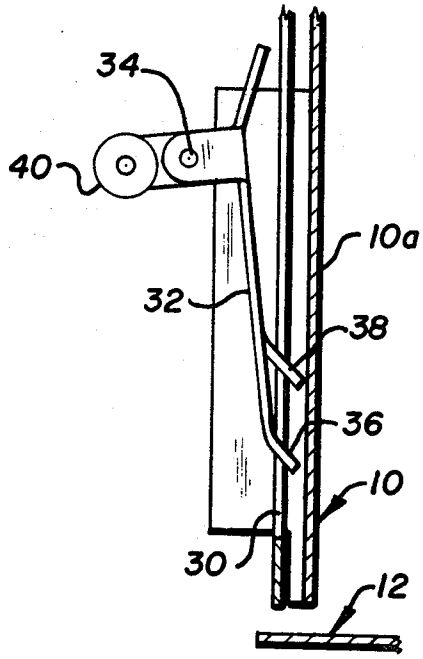
2,040,983	5/1936	DuGrenier	(194/.01)
2,925,898	2/1960	Terry	194/54
3,174,608	3/1965	Knickerbocker	194/102X

FOREIGN PATENTS

85,197	6/1958	Denmark	194/54
1,254,985	1/1961	France	(194/.01)
928,344	6/1963	Great Britain	(194/.01)

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ABSTRACT: A coin acceptor mechanism for such vending machines as newspapers dispensers has a vertical coin chute providing a gravity drop of coins from a receiving slot to a stop adjacent a door lock mechanism, and a coin holding pawl mounted adjacent the slot includes a plurality of coin holding points to permit a coin and/or a combination of two or more coins in the coin chute to activate the door lock of the dispenser without changing the position of the coin holding pawl.



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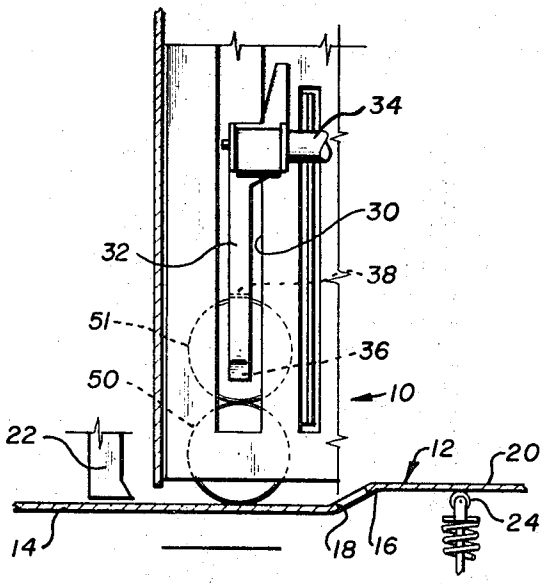


FIG. 1

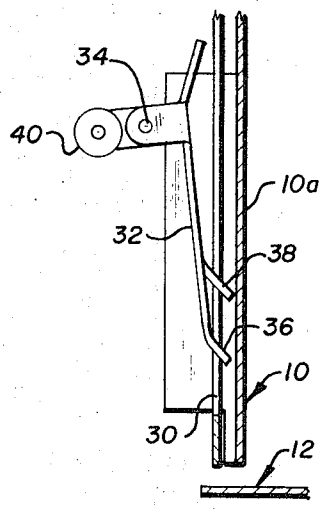


FIG. 2

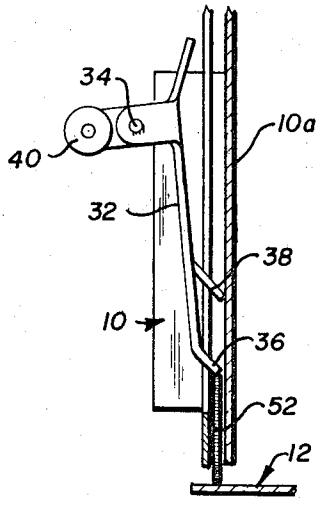


FIG. 3

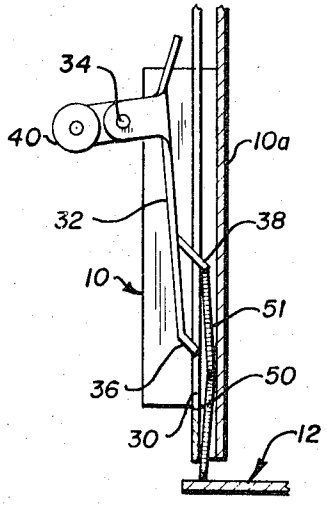


FIG. 4

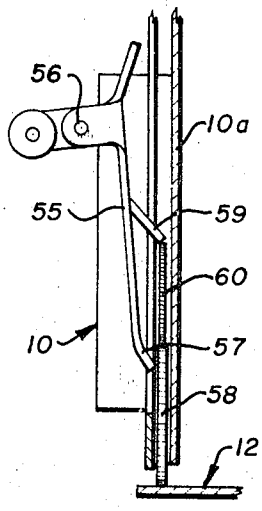


FIG. 5

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MULTIPLE COIN PAWL FOR COIN OPERATED LOCK

Coin vending machines have come into extensive use in the last decade or so, dispensing a great variety of items of all sizes and shapes. Most coin acceptor mechanisms are made to be adjustable, that is, made so that the mechanism will accept different denominations of coins or accept different combinations of coins for a particular amount necessary for the purchase of the items being dispensed. For example, it may be desired to have a coin acceptor of a machine to operate with a dime and a nickel or a combination of three nickels for the purchase of a particular 15 cent item. The mechanism of many such machines is arranged to be adjustable so that a different amount of money is necessary to operate the machine latch mechanism on a change of price for the item. For the above example, the coin acceptor mechanism of a dispenser may be arranged so that the quantity of money necessary to purchase an item is increased from 15 to 20 cents.

In some industries frequent changes of the purchase price of the vended goods may be necessary, and a notable example is in the newspaper industry where the Sunday edition of daily newspapers is generally at a higher price than the daily editions. Dispensing newspapers from vending machines has become quite a commonplace due to the increase of labor costs and the mobility of the population. The coin acceptor mechanism of most newspaper vending machines has a readily changeable mechanism, to change the price necessary for the purchase of a newspaper. The change permissible may cover from one amount to another. This generally occurs by moving a coin holding pawl from one position to another in the mechanism, generally such mechanisms are marked for acceptance of a particular denomination or combination of coins so that the operator may readily change the coin accepting mechanism of the particular newspaper vending machine. One particular type of newspaper vending machine includes a large door which is normally locked but when open permits access to a stack of papers from which the customer is expected to take one newspaper or the number of papers for which the coins are inserted. The coin acceptor mechanism usually permits a combination of coins since the price of the newspaper is an odd figure for which there is no single coin available. Such mechanisms use the coins to act as a key to permit the opening of the door latch, when the correct combination of coins is inserted in the coin chute. The coins in the chute are normally held stationary by a pawl so as to depress the lock mechanism of the door as the door is pulled outwardly thereby unlocking the door, permitting it to open.

A newspaper seller may normally maintain a number of such vending machines, and early on a Sunday morning, for example, the papers must be delivered and each machine's coin acceptor is changed to provide for the correct combination of coins necessary for operating the latch corresponding to the purchase price of the Sunday edition. On Monday morning the machines' coin acceptors must be changed back to the price for the daily editions. Even though the machines may be adjusted to accept a different coin amount quite easily, a substantial amount of time is consumed to change a number of such coin mechanisms. Generally it takes between 3 and 5 minutes for the operator to open the machine exposing the coin chute mechanism, adjusting the position of the pawls to the new price and relocking the coin mechanism, etc. Thus, of a vendor has some 30 to 50 machines or more it is virtually impossible for that vendor to deliver the papers, change the coin mechanism and have the papers available in all the machines for the using public within the time that the papers are available and when normally wanted. Thus, a newspaper vendor taking 5 minutes to change the mechanism and relock it consumes 250 minutes of time for 50 machines, or over 4 hours just to change the coin acceptor mechanism. This, obviously, is too much time since the vendor consumes additional time for loading the vending machines with the papers, and for traveling from machine to machine. In other words, it is economically not feasible for a single operator to change the mechanism on more than a few machines.

According to the present invention I have provided a pawl for the coin acceptor mechanism of a vending machine whereby a different combination of coins of the same or different denominations producing different amounts of money for the several combinations that may be utilized to operate a vending machine.

One of the primary purposes of the multiple pointed pawl of the invention is to eliminate the need of changing or adjusting the various pawls in the coin chutes of a coin acceptor to thereby activate the mechanism with any specific combination of coins when such coins are inserted into the coin chutes. Multiple coin holding points of the pawl of the invention will permit two or more combinations of coins to activate the door latch of a vending machine without changing the adjustment of the pawl.

It is, therefore, included among the objects and advantages of the present invention a multiple coin holding pawl permitting two or more combinations of coins, of different denominations and different amounts, to activate a door latch of a vending machine without changing the coin holding pawl.

Another object of the invention is to provide multiple coin holding points on a pawl of a coin acceptor chute of a vending machine whereby various combinations of coins may be used to key a door latch of a vending machine without adjustment of the coin holding chute.

A further object of the invention is to provide a coin acceptor of a coin operated vending machine which permits a variety of combination of coins in the same coin chute to actuate or key the lock mechanism of a door of the coin mechanism.

These and other objects and advantages of the present invention may be readily ascertained by referring to the following description and appended illustrations in which:

FIG. 1 is a side elevational view, partly schematic and partly in section, of a coin chute and door latch mechanism according to the invention;

FIG. 2 is a side elevational view, partly in section and partly schematic, of the multiple point coin pawl of FIG. 1;

FIG. 3 is a side elevational view of coin acceptor slot according to the invention illustrating the action of the coin holding pawl with a single coin;

FIG. 4 is a side elevational view, in section, of the coin acceptor slot of FIG. 3, illustrating the action of the pawl with two coins in the slot; and

FIG. 5 is a side elevational view of a modified pawl showing the action of a coin holding pawl using different set of coins of different denomination according to the invention.

The illustration of FIG. 1 shows a portion of a coin acceptor mechanism, of which several types are commercially available. In the particular embodiment illustrated, a coin chute, shown generally by numeral **10**, extends from a coin slot, not shown, from the exterior of the machine to a latch mechanism shown in general by numeral **12** as a plate or strap slide, which is generally attached to a door (not shown) from the end **14** and it includes a step or shoulder portion **16** with a slot **18** therein and it extends further to the right from end **20**. As a customer pulls on the door, the slide **12** being attached to the door moves with it, and in the absence of coins, a latch **22** engages the slot **18** and prevents the door from being opened further. A spring loaded bogey **24** presses against the slide to hold it in upper position so that the latch will engage the slide by the slot **18**. The coin chute **10** includes an open slot **30** on one side with a coin pawl **32**, pivoted on pivot pin **34** extending into the slot **30** to contact coins in the chute. A pair of coin contacting points **36** and **38** are spacedly mounted on the pawl, forcing the points **36** and **38** into the slot in the coin chute. The coin holding points **36** and **38** are spaced apart a predetermined distance which is determined by the combined diameters of combinations of coins necessary to make the purchase price of the newspaper. A pair of coins **50** and **51** are shown in the slot in FIG. **1**, being held by point **38** so as to bear against the plate **12** and on movement of the plate **12** towards the left the coins will depress the plate by means of the incline

16 passing under the coins, so that the latch 22 will miss the slot 18 and the door will open.

As shown in FIG. 2, the upper point 38 contacts wall 10*a* of the chute with a point 36 spaced therefrom. The spacing of the lower point from the chute wall is necessary to insure that the upper point contacts the top of a set of coins in the chute without the lower point 36 interfering. Thus, as shown in FIG. 4, a pair of coins 50 and 51, standing end on end in the chute has the top point 38 in contact with the top of the upper coin 51, while the lower point 36 is spaced away from the coins thereby not interfering with the contact of the upper point against the top of the upper coin.

As shown in FIG. 3, a single coin 52 in the chute bears against the point 36 which, while not touching the wall 10*a*, does contact the coin and prevents it from moving up the chute when the incline of the plate 12 is moved against it. In this connection, it is noted that the point 36 must extend into the chute a sufficient distance so that a coin can not pass between it and the wall 10*a* but rests on the top of the coin providing proper operation of the coin mechanism.

As shown in FIG. 3, a single coin 52 supported against the point 36 permits operation of the vending machine, and in FIG. 4 a pair of coins 50 and 51, likewise, permits operation of the latch on the vending machine. For example, the coin 52 might be a dime and the two coins 50 and 51 may, also, be dimes, thereby permitting the use of the vending machine with either a dime or two dimes. Thus, a newspaper vending machine could be operated for two editions with a single coin chute and merely a sign specifying that the daily paper is 10 cents and the Sunday edition is 20 cents. Either the single coin or the combination of the two coins will operate the vending machine for either the daily or the Sunday paper; the vendor obviously relying on the honesty of the public and/or lack of knowledge of the public that the machine will operate daily and Sunday with but a single dime; to obtain the proper number of coins from each of the purchasers.

The illustrations of FIGS. 3 and 4 show a combination using a single dime and a pair of dimes to operate the vending mechanism, however, where it would be desirable to provide for other combinations of coins more points could be added to the pawl, or the points spaced differently. For example, if it is desired to, also, have two nickels operate the machine for the daily edition of the paper, a point above the point 38 could be added which would correspond to the combination diameter of two nickels thereby the machine would operate with a dime, two dimes or two nickels. By adding still another point further above the point for the two nickels, a fourth combination comprising four nickels could be provided for the operation of the machine. In each instance, the position of the points on the pawl is determined by the width of the combined diameters of the desired number of coins stacked in the chute for operating the vending machine.

The addition of the weight on the pawl is necessary to maintain the pawl lightly in the coin chute, permitting the coin to pass each of the points but maintaining the points in position to have the coins bear against it on operation of the machine. The necessary amount of weight is determined in each case by the number of points and their spacing on the pawl so as to correctly counterbalance the pawl for smooth and easy operation.

As illustrated in FIG. 5, a pawl 55 pivotally mounted on a pivot pin 56 includes spaced apart points of which the lower point 57 is arranged to accept a large coin 58, for example a quarter, and the upper point 59 is arranged to accept a smaller coin 60 seated on the lower coin. For example, the lower coin may be a quarter and the upper coin a dime which would permit operation of the coin acceptor for those situations where the Sunday paper is considerably more expensive than the daily paper. In this case the lower point 57 would be arranged to actuate the slide by a dime whereas the upper slide would be arranged to activate the lock by the quarter and the dime combination thus providing a means for the actuation of the machine for the combination of coins necessary to make the correct amount of purchase of the paper.

While the invention has been illustrated by reference to particular embodiments, there is no intent to limit the spirit and scope of the invention to the precise details so set forth, except as defined in the following claims.

I claim:

1. In a coin acceptor mechanism of a coin operated vending machine having a coin chute for holding coins edgewise therein and a pivoted pawl biased into said chute against which coins in the chute can bear so as to key the opening of a slide lock, the improvement of a plurality of coin contacting points spaced a predetermined distance apart for holding plural combinations of coins totaling different amounts; the upper of said plurality of points being spaced inwardly of the point immediately therebelow, the top said point mounted so as to contact the back chute wall; and each said point extending into said chute so as to contact the top of an adjacent coin and hold said coins in position to key the opening of the slide lock.

2. The improvement of claim 1 wherein a counterbalanced weight is mounted on said pawl biasing said pawl into said chute.

3. The improvement of claim 1 wherein at least two points are mounted on said pawl.

4. The improvement of claim 1 wherein the top one of said points is mounted to contact the inside wall of said chute and each point therebelow is progressively spaced at a greater distance away from said wall.

5. The improvement of claim 1 wherein said points are arranged so that the lower point contacts the top of a single coin, and at least one point thereabove contacts the top of at least two stacked coins.