

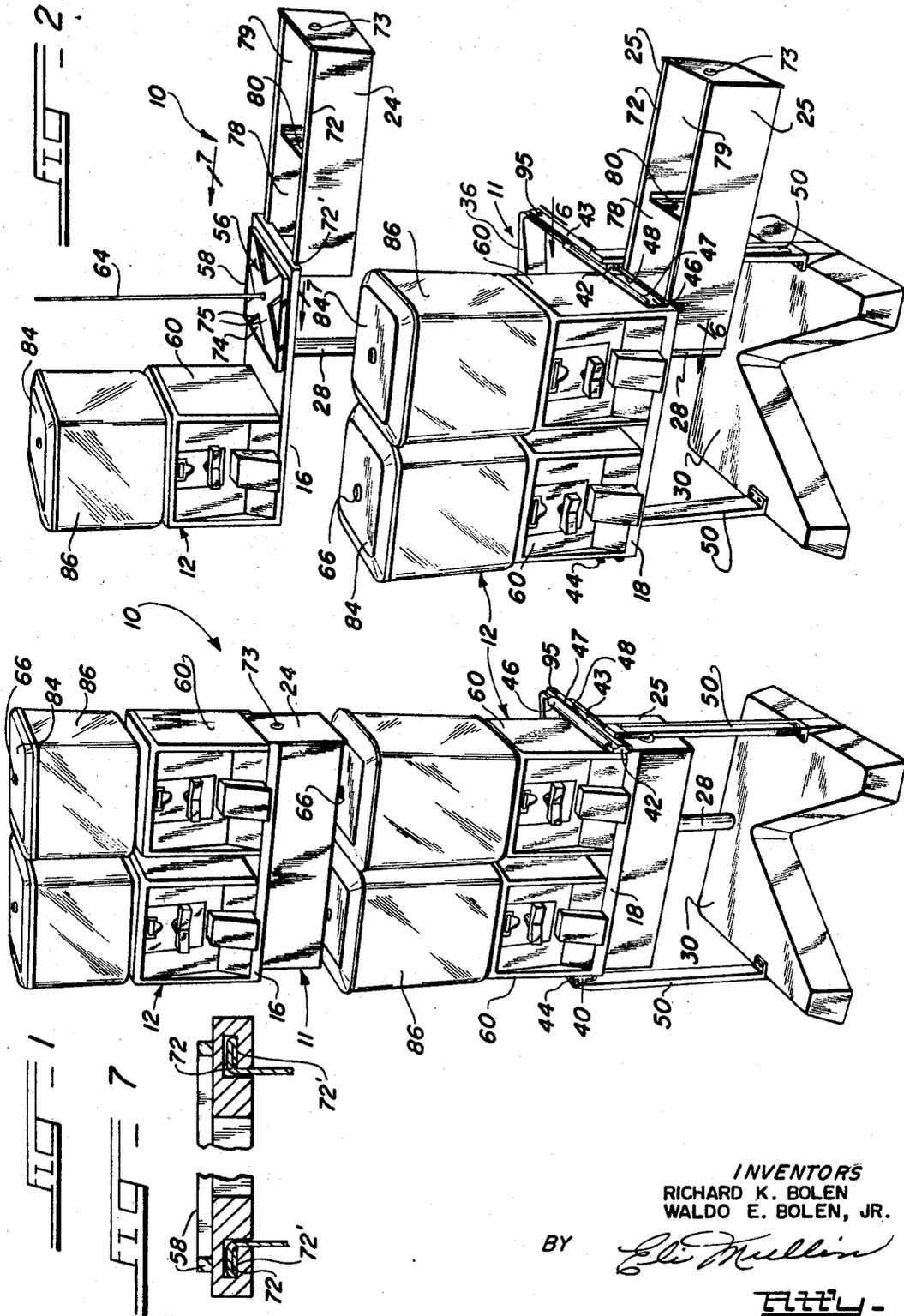
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VENDING MACHINE ASSEMBLY INCLUDING A STAND  
WITH A COIN BOX THEREIN

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**VENDING MACHINE ASSEMBLY INCLUDING A STAND WITH A COIN BOX THEREIN**

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**ABSTRACT OF THE DISCLOSURE**

A stand for coin operated merchandise vending machines has shelves on which the machines (sans cash-boxes) are positioned. Coin receiving boxes are removably positioned beneath said shelves, and means is provided in said shelves for passage of coins from the machine into said boxes.

This invention relates generally to a novel stand for coin-operated vending machines of the type which dispense gum, candy, toys or the like and which are commonly known as bulk vending machines. More particularly, the invention relates to the combination of a stand having coin or cash boxes positioned therein and the coin-operated vending machines mounted thereon whereby said coin boxes comprise the coin collecting and storage means of the machines themselves.

The prior vending machines generally comprised a base supporting a hollow pedestal. A transparent merchandise or product container normally rested on a ledge formed on the upper part of the pedestal. The pedestal housed a coin-operated mechanism which controlled the dispensing of the product. An elongated circular rod extended upward from the base of the vending machine and through accommodating apertures within the main component parts of the machine. A locking means which was screwed on the upper end of the circular rod secured the various parts of the vending machine together.

In these prior vending machines, the rotation of the rotary handle at the front of the pedestal would revolve the actuating coin inserted into the machine, to the inside of the pedestal for deposit on the bottom therein. The base or bottom of the pedestal then comprised the coin or cash box. To remove these coins from the vending machine, it was required to lift the cover and merchandise container out from association with the pedestal; then physically reach inside the pedestal to scoop out the coins. After the coins were removed, the vending machine was re-assembled again. Thus, the removal of coins from a plurality of these prior vending machines was an extremely time consuming operation. Moreover, the high labor cost for coin removal in many instances precluded the use of the lower value coins for the vending machines.

It is therefore a primary object of this invention to provide a vending machine which does not require the dis-assembling of the same in order to obtain access to the coins collected from the operation of the machine.

It is a primary feature of the invention to provide a removable coin box which is operatively positioned to collect the actuating coin as the same is discarded from the coin control mechanism inside the vending machine.

Another feature is to provide a removable coin box common with a plurality of vending machines whereby the coin box collects the coins dispensed from a plurality of vending machines. Thus, the coins collected from the plurality of vending machines may be removed simultaneously with the removal of the common coin box.

It is still another object to provide a vending machine assembly which comprises a stand with a coin box and a vending machine for mounting on said stand, said box collecting the coins from said vending machine and being

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removable from the stand without disturbing the vending machine mounted on the stand.

Previous to the invention herein, a plurality of vending machines was frequently mounted together on one vending machine stand which comprised a pair of vertically spaced apart shelves. These vending machines were quite an improvement space and appearance wise over the prior practice of individually mounting each vending machine on its own stand or supporting structure. However, the dual level stands nevertheless had several undesirable features which appreciably limited the effectiveness and desirability of their use. For example, it was necessary to provide ample vertical spacing between shelves in order to have sufficient room to lift out the merchandise container from association with the pedestal whenever it was necessary to do so, viz.: when emptying the cash box. Moreover, regardless of the amount of space allowed between shelves it was still an arduous task to reach inside the pedestal of the vending machines mounted on the lower shelf and scoop out the coins therein. Thus, with these stands it was usually necessary to also remove the pedestal and then spill out the coins.

In view of the foregoing, it is another primary object of this invention to provide a stand having vertically spaced apart shelves whereby a plurality of vending machines may be compactly mounted thereon.

It is another primary feature of this invention to provide a stand having vertically spaced apart shelves for mounting vending machines thereon, and including means whereby the lower shelf may be horizontally displaced from the upper shelf, thereby permitting easy and convenient access inside the machines mounted on the lower shelf.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel features of construction, arrangement and a combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of our invention we have illustrated in the accompanying drawings a preferred embodiment thereof, from an inspection of which, when considered in connection with the following description, our invention, its mode of construction, assembly and operation, and many of its advantages should be readily understood and appreciated.

Referring to the drawings in which the same characters of reference are employed to indicate corresponding or similar parts throughout the several figures of the drawings:

FIG. 1 is a perspective elevational view of the combination of a stand and a plurality of coin-operated vending machines mounted thereon embodying the principles of the present invention;

FIG. 2 is a perspective view similar to FIG. 1, but illustrating the lower shelf displaced in a horizontal plane from beneath the upper shelf and showing the common coin boxes for the respective shelves in their open positions;

FIG. 3 is a top view of the stand without the vending machines mounted thereon, illustrating the lower shelf horizontally displaced from the upper shelf; only the coin receiver box for the lower shelf is shown in the open position;

FIG. 4 is a side elevational view of the stand; the vending machine being shown in phantom outline;

FIG. 5 is a view similar to FIG. 4, but showing the lower shelf horizontally displaced from the upper shelf;

FIG. 6 is an enlarged fragmentary view of the sliding channel member taken substantially on the plane of the line 6—6 in FIG. 2, viewed in the direction indicated with adjacent elements removed, and showing the position of the locking latch when the lower shelf is horizontally displaced from the upper shelf; and

FIG. 7 is an enlarged fragmentary sectional view taken on the plane of the line 7—7 in FIG. 2, viewed in the direction indicated and showing the lip of the coin box resting on the cooperating shoulder formed beneath the shelf.

Referring now particularly to FIGURES 1 and 2 of the drawings, the reference numeral 10 indicates generally a vending machine assembly comprising a stand 11 and a plurality of coin-operated vending machines 12 mounted thereon; said assembly embodying the principles of the present invention. In the embodiment selected for illustration, pairs of vending machines 12 are mounted side by side on several levels of the stand 11. Stand 11 comprises an upper shelf 16 spaced from a horizontally movable lower shelf 18. As will be more fully described hereafter each of the shelves 16, 18 includes respectively a common coin box 24, 25 for receiving the coins collected from the pairs of vending machines 12 mounted thereon.

The support structure for stand 11 comprises an elongated column 28 rigidly attached to the bottom end thereof to the rear of a main support base 30 and extends vertically upward therefrom. Main support base 30 is preferably constructed to have sufficient weight distribution to firmly support stand 11 with the vending machines 12 mounted thereon. In this manner, stand 11 may be easily moved from one place to another.

A collar 32 is formed to the rear of upper shelf 16 and is fixedly encircled around the upper part of column 28 (see FIGS. 4 and 5). Thus as shown, upper shelf 16 extends out in front of column 28.

As shown in FIG. 3, a wing type bracket 34 is fastened to column 28 at a point spaced below upper shelf 16. Bracket 34 comprises a pair of arms 35, 36 angularly disposed from each other and formed at one of their ends to a centrally positioned collar 37 (FIGS. 4 and 5) which is fixedly attached to column 28.

Side rails 40, 42 (FIG. 3) are connected respectively to the free ends of arms 35, 36. Side rails 40, 42 comprise a longitudinal center strip 43 protruding outward between the longitudinal edges thereof.

A pair of channel members 44, 46 formed to opposite sides of lower shelf 18 are slidably positioned on rails 40, 42. (FIGS. 1, 2, 4 and 5). As shown, the longitudinal free edges 48 of the channel members 44, 46 ride along the longitudinal edges of rails 40, 42.

As shown in FIGS. 1 and 2, a pair of bracing members 50 are rigidly attached at their lower ends to the main support base 30 and at their upper ends to strips 43 of rails 40, 42.

Turning now particularly to FIGS. 2 and 3, it will be seen that a base 56 is provided on stand 11 for each vending machine 12 mounted thereon. A rim 58 extends around the outer periphery of each base 56. The bottom edge of pedestal 60 of the vending machine 12 surrounds rim 58 when operatively positioned on base 56.

An elongated small diameter circular rod 64 (see FIGS. 2, 4 and 5) is fixedly attached at a substantially central point on base 56 and extends upward therefrom. Circular rod 64 is dimensioned to be operatively received within accommodating apertures formed in the vending machines 12. These apertures may be similar with regard to size and location, to the rod accommodating apertures found within the conventional vending machines previously used.

The vending machine 12 which is mounted on stand 11 is in substantially all respects similar to the conventional vending machines used heretofore, except that the bottom end of pedestal 60 is open and the base 56 and

circular rod 64 are integral parts of stand 11 rather than of the machine as heretofore. Thus, when vending machine 12 is placed over circular rod 64 and through the accommodating apertures therein, the open bottom end of pedestal fits around rim 58. Then vending machine 12 may be secured in place by a conventional locking means 66 (FIGS. 1 and 2) which screws on the top of the circular rod, in a manner well known in the art.

The coin boxes 24, 25 are slidably associated with suitable supporting structure formed to the underside of shelves 16, 18. In the illustrated embodiment a lip 72 is bent outward from the longitudinally opposed upper edges of the coin boxes 24, 25 to slide along cooperating projecting narrow ledges 72' (see FIG. 7) formed underneath shelves 16, 18. When the coin boxes 24, 25 are secured by their locks 73, the coin boxes are positioned directly below the bases 56 of the corresponding shelves. It will be noted that each box 24, 25 extends beneath the two machines 12, mounted thereabove.

Base 56 includes one or more openings 74 (see FIG. 3) to communicate the open bottom end of pedestal 70 of the vending machine 12 with the coin boxes 24, 25. Thus, the coins dropping from the conventional coin control mechanism inside the pedestal 70 fall through openings 74 and into the coin box.

Coin box 24 is divided into compartments 78, 79 by partition wall 80. Thus, each vending machine 12 has its own compartment inside one of the coin boxes 24, 25 for coin collection.

Directing attention now to FIG. 6, it will be noted that the bottom edge of channel member 46 and rail 43 may be formed with spaced apart notches 90, 91 to receive a locking latch 92 therein. Locking latch 92 comprises a bottom finger 93 having a greater weight than upper finger 94. When the lower shelf 18 is in the normal position (FIG. 1), the upper finger 94 lies in notch 90. To move the lower shelf 18 to the servicing position (FIGS. 2 and 5), the bottom finger 93 is rotated clockwise and shelf 18 is pulled outwardly. When the servicing position is reached, the upper finger 94 is urged into notch 91 thereby maintaining the shelf securely in place.

Apertures 95 may be formed in channel member 46 and rail 43 if it is desired to securely lock the lower shelf in its normal position (FIGS. 1 and 4). Thus, when shelf 18 is in its normal position apertures 95 are in alignment for receiving a suitable locking means.

The operation of the vending machine assembly 10 may now be described with particular reference to FIGS. 1 and 2. In FIG. 1, shelves 16, 18 are positioned one under the other in substantial vertical alignment and the vending machines 12 are mounted compactly on stand 11. The coin receiver box 24 for upper shelf 16 may be removed for access therein by unlocking the same and pulling it laterally outward from a closed position shown in FIG. 1 to an open position shown in FIG. 2. Thus, with the invention herein, it is not necessary to reach into the pedestal and scoop the coins out therefrom or completely lift away the pedestal from the vending machine base to remove coins, as was heretofore required. Furthermore, if it is desired to even further reduce the time spent in coin collection, the vending machine serviceman may merely remove the coin box and insert another but empty coin box in its place. The removed coin box could be covered and locked and the contents therein counted at a later time and in a central location.

To replenish the supply of products or articles to be dispensed from the vending machine on the upper shelf 16, the covers 84 are removed after unlocking the locking means 66 and the transparent merchandise container 86 is refilled. If it is desired to change the merchandise to be dispensed and there is still remaining some merchandise in the machine, the container 86 is merely lifted out from association with circular rod 64 and the contents removed therefrom. The container 86 is returned into place on the stand 11 for refilling. Alternatively, a new

pre-filled merchandise container 86 may merely be substituted for the old one.

Access to the vending machines 12 on the lower shelf 18 is obtained by pulling the same horizontally outward from the normal position shown in FIG. 1 to a servicing position shown in FIG. 2. In the servicing position, the coin receiver box 25 upon being unlocked is easily pulled laterally away from the lower shelf 18, whereas in the original position of shelf 18, movement was blocked by the brace members 50. As is apparent from viewing FIGS. 2 and 5, after lower shelf 18 has been horizontally displaced with respect to upper shelf 16 whereby there is complete vertical clearance between shelves, the replenishing of the merchandise for dispensing is just as easily accomplished as if the vending machine were on the upper shelf.

From the foregoing description and drawings, it should be apparent that we have provided a novel vending machine which accomplishes the aforesaid objects and features in a simplified and improved manner. By providing a common coin box for each shelf, the coins collected from each vending machine mounted thereon may be simultaneously removed. Moreover, since the coin box may be moved outward away from association with the vending machines, easy access is provided to the coins, and hence eliminates the time consuming effort previously required for coin removal.

Furthermore, by providing a lower shelf 18 which is movably associated within stand 11, the lower shelf may be moved to a convenient servicing position, whereby the merchandise to be dispensed may be easily replenished and the coins in the coin box 24 conveniently removed from the vending machine without disturbing the machines on the upper shelf.

Although only the lower shelf 18 is illustrated in the drawings and described in the foregoing as being capable of horizontal movement for purposes of coin removal and product replenishment, it should be apparent that by employing the principles of the invention herein, multiples of vending machines may be compactly arranged on a plurality of normally vertically aligned spaced apart shelves. Thus, when any one of the lower shelves is desired to be serviced for coin removal etc., it would be simply necessary to horizontally displace the same away from the other shelves. Moreover, the collected coins for any multiple of vending machines 12 mounted on a shelf is easily removed by simply removing the common coin box corresponding to that shelf.

It is believed that our invention, its mode of construction and assembly, and many of its advantages should be readily understood from the foregoing without further description, and it should also be manifest that while a preferred embodiment of the invention has been shown and described for illustrative purposes, the structural details are nevertheless capable of wide variation within the purview of our invention as defined in the appended claims.

What we claim and desire to secure by Letters Patent of the United States is:

1. In a merchandise vending machine assembly including a stand and a plurality of merchandise vending machines mounted on said stand, said stand comprising: a plurality of shelves including at least an upper shelf and a lower shelf spaced one above the other, each

of said shelves having at least one base to support one of said vending machines, said base including an opening therein;

retaining means on said base to permit said vending machine to be securely mounted thereto;

support means mounting said shelves in said stand; coin boxes open at the upper ends thereof and removably associated with said shelves, said coin boxes being operatively positioned beneath the openings of said bases to receive coins deposited in said vending machines after the same have passed through the opening in said base;

movable means associated with said support means to enable said lower shelf to be moved outwardly from a normal position aligned substantially vertically below said upper shelf to a servicing position horizontally displaced from said normal position, thereby providing convenient access to said vending machine mounted on said lower shelf;

said support means including a pair of spaced apart side rails adjacent opposite sides of said lower shelf; and

said movable means comprising a pair of arms slidably associated with said side rails to enable said lower shelf to be moved horizontally from said normal position to said servicing position.

2. The merchandise vending machine assembly as claimed in claim 1, wherein said coin box includes a plurality of compartments, each of said compartments receiving and storing the coins dispensed from one of said vending machines.

3. The merchandise vending machine assembly as claimed in claim 1 wherein:

a rim is integrally formed around substantially the outer border of each of said bases, the bottom edge of the pedestal of the vending machine surrounding said rim;

a rod extends upwardly from a substantially central position on each of the bases, said vending machine having a plurality of accommodating apertures, said rod cooperating with said apertures to maintain said vending machine in place on said base; and

said support means comprises a main support base for supporting said stand on a floor surface, a column extending upwardly from said main support base, said upper shelf being fixedly associated with the upper portion of said column and said lower shelf being fixedly associated with said column between said upper shelf and said main support base.

#### References Cited

##### UNITED STATES PATENTS

1,076,584	10/1913	Kohler.	
1,641,249	9/1927	Blumenthal	----- 312—333 X
2,561,295	7/1951	Stone	----- 312—333
2,828,909	4/1958	Sollenberger et al.	___ 194—1 X
3,018,148	1/1962	Probasco	----- 221—282 X
3,120,324	2/1964	Amberg et al.	----- 221—282 X
3,243,247	3/1966	Knape	----- 312—333
3,119,484	1/1964	Davis et al.	----- 194—2

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