Nov. 26, 1940. A. E. WILLEY 2,222,887

AUTOMATIC DISPENSING SHELF

Filed April 28, 1939

Fig. 1.

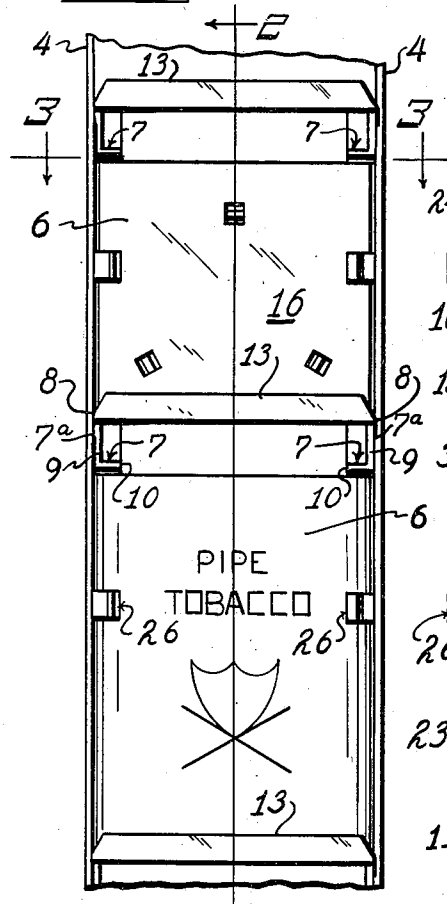
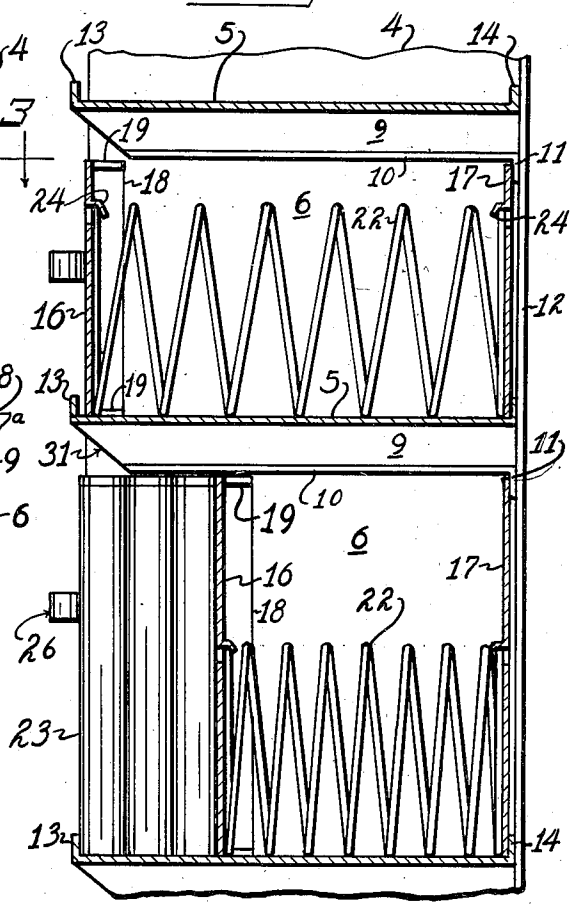


Fig. 2.



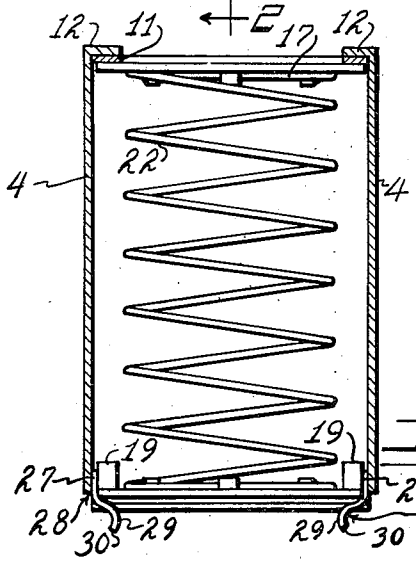


Fig. 3.

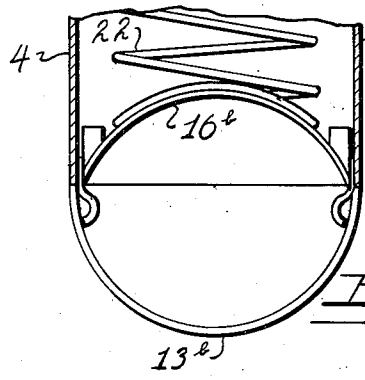


Fig. 4.

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AUTOMATIC DISPENSING SHELF

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1 Claim. (Cl. 312—71)

This invention relates to automatic dispensing shelves, or "self feeding shelves," for use in selling can and package goods in stores.

As is well known, it is essential that the retail merchant have his wares prominently displayed in order to sell them, especially in the increasingly popular self-service stores such as we have today.

It is, therefore, the purpose of this invention to present a system of shelving for prominently displaying the merchant's wares, and wherein the items on hand will always be displayed at the front thereof.

Another object of this invention is to provide a system of shelving comprising a number of compartments preferably rectangular in cross section, for the display of canned or packaged merchandise, the compartments being formed by a plurality of vertically spaced partitions or side walls having a plurality of shelves secured therebetween, front and rear vertically positioned plates slidably mounted within the aforementioned compartments and expansion coil springs mounted between the plates for forcing the front plates and the items in front thereof outwardly against stops located at the front of the shelves, there being leaf spring clips secured laterally to the partitions at the front thereof between the shelves for releasably holding the merchandise on the shelves.

With the foregoing objects in view together with such other objects as will become apparent from the specification reference will be had to the accompanying drawing forming a part of this specification and in which:

Figure 1 is a fragmental front plan view of a single tier of shelving as constructed in accordance with this invention.

Figure 2 is a sectional view of Figure 1 on the line 2—2.

Figure 3 is a sectional view of Figure 1 on the line 3—3.

Figure 4 is a sectional view, similar to Figure 3, of a modified form of shelving.

In carrying out this invention and describing the construction of a unit thereof, a pair of side walls or partitions 4 are provided and are secured to one another in a vertically spaced relationship by means of spaced shelves 5, thereby forming bins or compartments 6 therebetween rectangular in cross section. These shelves have integrally depended guides 7 extended along the sides thereof and by means of which the shelves are secured to the partitions as indicated at 7a in any desired manner, as by welding or the like. The above guides 7, the specific use of which will be later described, are formed by bending the shelving perpendicularly downwardly at the sides 8 thereby forming the horizontal strips 9, by which the shelves are secured to the partitions, and by then bending the lower margins 10 of these horizontal strips inwardly at right angles to the horizontal strips 9. These margins 10 constitute the guides proper. The guide strips 10 are cut somewhat longer than the horizontal strips 9, at the rearward ends 11 thereof, and these ends are bent downwardly and secured to flanges 12 integrally formed and turned inwardly at right angles from the partitions at the rear sides thereof, thereby strengthening the structure. The forward and rear ends 13 and 14 of the shelving proper are bent upwardly as shown in Figure 2, the rear ends of which are secured to the inwardly turned flanges 12 thereby serving to strengthen the structure as stated above, and the forward upwardly turned ends serving as stops for the merchandise as will be later explained.

A pair of vertically positioned front and rear feed plates 16 and 17 are freely mounted within each of the aforementioned compartments 6 between the shelves and guide strips 10, the front plates being designed for slidable movement therein. For this purpose the front or sliding plates 16 have their sides 18 bent inwardly at right angles thereto, said sides functioning as vertical guide flanges. The upper and lower ends 19 of the inwardly turned sides or guide flanges 18, are cut to a greater length than the plates 16, and are turned inwardly towards one another as shown in Figure 3 thereby forming horizontal guide flanges adapted to co-act with the guides 10. These inturned horizontal and vertical guide flanges on the front feed plates thus serve to hold the plates 16 in a vertical slidable position within the bins or compartments 6. The rear or stationary feed plates 17 are plain and have no guide flanges thereon as they are supported at the back of the shelving by the rearward ends 11 of the guide strips 10 and the upwardly turned rear ends 14 of the shelving proper.

Coiled expansion springs 22 are inserted in each of the compartments 6 between the front and rear plates 16 and 17 for the purpose of forcing the plates apart and for resiliently urging the front plate forwardly. These springs are braced at their rear ends against the stationary plates 17 backwardly against the rear ends of the compartments as shown in Figure 2, while the

front plates 16 in turn resiliently press the merchandise forwardly against the upturned frontal stops 13 on the shelving. The aforementioned expansion springs are removably secured to the plates by means of tabs 24 stamped therefrom and turned inwardly and downwardly over the ends of the springs.

Spring clips 26 are secured to the side walls at the front of each compartment for releasably holding the cans 23 or the like therein. These clips, positioned slightly above the center of each compartment, are reversely curved at their ends and somewhat S-shaped, as viewed from the top, see Figure 3, and are secured by their inner ends 27 to the side walls or partitions 4 upon the inner sides thereof as shown at 28. The outwardly extended arcuate ends 29 are turned inwardly, the outer extremities 30 of the clips being directed again outwardly, so as to grip or hold the upper portion of the cans 23.

The upwardly turned front ends or margins 13 of the aforementioned shelves protrude somewhat from the forward ends of the compartments so as to permit a person to easily grasp and remove the cans or packages therefrom. The guides 7, integrally depended from the shelves, prevent the contents of the compartments, such as the cans 23, falling or binding in the compartments. The forward extended ends of these guide strips are preferably cut away angularly at 31 to the approximate depth of a single article as assembled therein, as shown in Figure 2, so as to permit the cans or contents of the compartments to be raised or tilted outwardly over the upwardly turned stops 13 when removing same therefrom.

A modified form of construction is shown in Figure 4 wherein the front feed plate 16*b* and upwardly turned stop 13*b* are of a semi-circular appearance, as viewed from the top. This modified form of construction is designed for the handling and dispensing of round cans or the like, while the aforementioned structure is better suited for flat or rectangular packaged items.

Although only a single tier shelf arrangement has herein been described, it is obvious that a plurality of tiers could be unitarily constructed as well.

In use this type of shelving is filled or "stocked" by pressing the cans or packages one at a time into the compartments to be filled, thereby forcing the front feed plate backwards, compressing the coiled expansion spring at the back thereof. After the article has been forced inwardly of the stop on the front of the shelf the article may be pressed downwardly onto the shelf, the spring clips together with the stop serving to hold the can or the like therein. This procedure is repeated until the compartment has been filled.

To remove an article, such as a can of pipe tobacco, as shown in the drawing, it is only necessary to place the finger tips on the top of the can and pull the can outwardly and downwardly past the spring clips, another can being then automatically forced to the front of the shelf.

The shelves and compartments are to be constructed to accommodate the species of merchandise to be dispensed therein, and so that the uniform packages of merchandise will nicely yet freely slide into the compartments underneath the upper guide strips, as described.

While I have here shown and described a particular embodiment of the invention, it is understood that changes may be made therein, within the scope of the appended claim.

I claim:

In a device of the kind described, comprising a compartment rectangular in cross-section, the compartment having parallel sides and top and bottom, the top having integrally connected, downwardly and inwardly turned marginal portions, said sides being secured to the down-turned portions and the inturned portions forming guide strips for confining packages of merchandise of uniform size to slide within the compartment beneath the guide strips, the space above the guide strips and inserted packages providing finger room for engaging and removing the packages as they are pushed forwardly to the front of the compartment, the forward end of the bottom of the compartment being up-turned to form a stop for the packages as they are pushed forwardly, spring clips on the sides spaced above the bottom as auxiliary and releasable retainers for the packages, and means for automatically urging the packages forwardly.

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