

Oct. 13, 1959

L. W. PATTERSON

2,908,397

DISPLAY STAND WITH FOLDING TRAYS

Filed Nov. 23, 1956

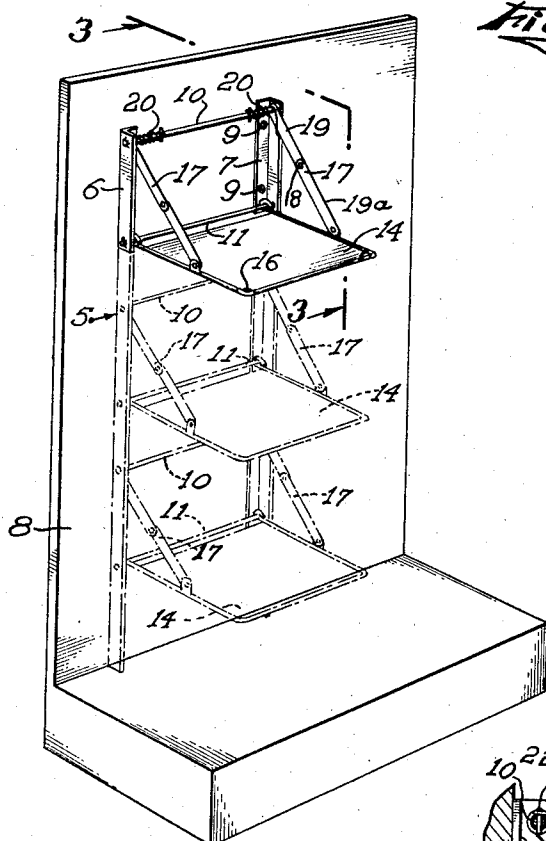


Fig. 1.

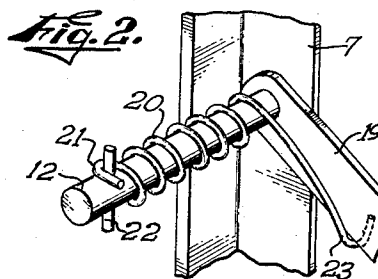


Fig. 2.

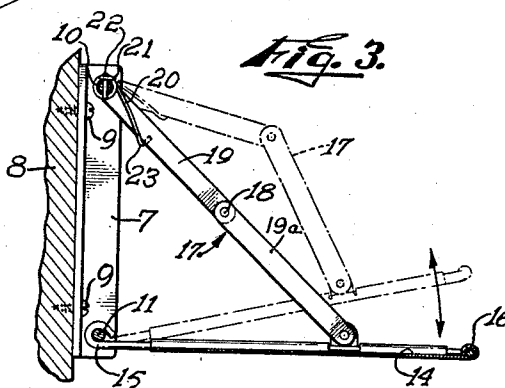


Fig. 3.

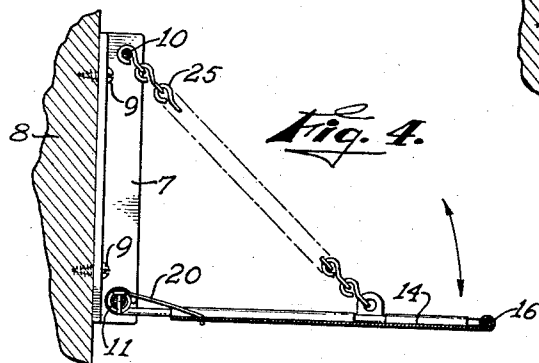


Fig. 4.

LAWRENCE W. PATTERSON
INVENTOR.

BY *Stidman B. Hoar*

AGENT

1

2,908,397

DISPLAY STAND WITH FOLDING TRAYS

Lawrence Willard Patterson, Santa Ana, Calif., assignor to Spring-A-Way Displays of California, Inc., Santa Ana, Calif., a corporation of California

Application November 23, 1956, Serial No. 624,088

1 Claim. (Cl. 211—93)

This invention relates to display stands for merchandise, and more particularly relates to stands of the self-service type, from which a customer may take the desired article.

Stands of the self-service type are being increasingly used in retail stores such as markets and drug stores, where the cost of adequate help to dispense the great variety of merchandise would be excessive. Reference is made to the stand disclosed in my Patent No. 2,637,445 as an example of a stand designed to hold merchandise of uniform height and considerable rigidity, in which trays for the displayed goods automatically swing up when the last of their contents is removed, to uncover the contents of lower trays.

However, much merchandise is of a character not suitable for use with the stand described in my aforesaid patent, often having insufficient rigidity to sustain the weight of other tiers of merchandise placed above it. Often, also, it is desirable to place goods of a variety of heights upon one stand, for example, cellophane sacks of carrots on one level and of celery on another level—these being examples of non-rigid goods not uniform in height. In all cases, it is desirable to have all mechanism related to the support and to the swinging-up of the trays or racks, confined to the rearward part of the stand, so as not to interfere with full view and availability of the merchandise on sale.

It is accordingly an object of this invention to provide a display stand having merchandise trays which automatically swing upwardly when empty but which do not swing below the horizontal and are therefore not dependent upon lower tiers of merchandise for their support.

Another object of this invention is to provide a display stand having its tray-supporting mechanism at the rear of the trays so that the merchandise is at all times fully visible and the merchandise on the uppermost loaded tray is fully available.

A further object of the invention is to provide a display stand having mechanism for preventing trays from swinging downward below the horizontal, which when the trays are in merchandise-holding position supports the trays outwardly sufficiently to minimize strain but which when folded lies in the plane of the rear of the trays, extending neither forwardly nor rearwardly thereof.

Still another object of this invention is to provide a display stand having swinging trays which may hold merchandise of various bulk and heights.

In the accompanying drawing, illustrative of presently preferred embodiments of my invention,

Fig. 1 is a perspective view of my improved display stand, the stand being shown mounted on a grocery-store "gondola."

Fig. 2 is a fragmentary view on an enlarged scale of a spring and mounting therefor for swinging the trays upwardly, the mounting for the spring being a modification of the mounting shown in Fig. 1.

Fig. 3 is a view on an intermediate scale showing a

2

preferred embodiment of the tray-holding mechanism and the connection of the spring thereto; and

Fig. 4 is a view on the same scale as Fig. 3, showing a modified embodiment of the tray-holding mechanism and spring-connection.

Having reference now to the details of the drawing, I have shown in Fig. 1 an upright support 5 comprising a pair of spaced vertical angle irons 6 and 7. As illustrated, the angle irons 6 and 7 are shown mounted on a grocery store gondola 8 by screws 9, but obviously they may equally well have a base independent of a gondola, on which they will constitute a self-supporting mechanism.

The angle irons 6 and 7 support at spaced positions horizontal bars 10 and 11 which may extend in repetitive series from top to bottom of the angle irons 6 and 7. If the display stand is intended to stand independently of a gondola upon its own base, the bars 10 and 11 may connect the angle irons 6 and 7 and thus brace the display stand; on the other hand, where the angle irons are otherwise secured in spaced positions, as by being secured to a gondola back, the horizontal bars need only extend a few inches from the angle irons, as shown at 12 in Fig. 2 in order to fulfill their functions. The bars 12 should be tightly fastened to the uprights 6 and 7 to avoid turning.

To the lower horizontal bar 11 of each series of bars 10 and 11 there is hingedly connected a tray 14. The hinge connection may be a simple loop 15 formed in the ends of a wire 16 reinforcing the edges of the tray 14.

The tray 14 may be of wire mesh or wire grid or may be a solid tray, plain or corrugated for rigidity, and if solid may be embossed, painted, plated, lithographed, or printed with advertising matter. To prevent the trays 14 from swinging below the horizontal, while permitting them to swing upward to the vertical, braces 17 connect the trays 14 at positions outward from the loop 15 to the bars 10, the braces 17 being pivotally connected to both the trays 14 and the bars 10 and being foldable at median points 18. In order to insure that the braces 17 will "break" and permit the trays 14 to swing upward, springs 20 are coiled around the horizontal bars 10 and exert an upward force upon the end 19 of the braces nearest the bars 10, forcing the end 19 to "break" with respect to the other end 19a. The end 21 of the spring coil around the bar 10 may be looped around a pin 22 held in the bar 10, while the other end 23 of the spring is looped under the brace-end 19, the arrangement being best illustrated in Fig. 2 in connection with the modified bar 12.

In Fig. 4, I have shown a modification in which flexible ties 25, which may be chains or cables, are connected to the supports 6 and 7, as by bars 10 or 12 and to outward points upon the trays 14. The ties 25 are just long enough to permit the trays 14 to swing downward to the horizontal. In this modification, the springs 20 are connected directly to the trays 14 and have their coiled ends looped around the lower bars 11, exerting an upward force upon the racks 14.

It will be seen that the trays 14 cannot swing below the horizontal. They may therefore be loaded with merchandise, which they will support and display until the last merchandise upon a particular tray is removed. At that time the springs 20, which are of sufficient strength to lift a tray but only if the tray is empty, swing the tray vertically. This action will ordinarily take place from the top tray downward in succession, but the trays may be spaced sufficiently vertically so that a lower tray may be swung upward without interfering with the tray above it. The springs 20 cause the braces 17 to "break" and to fold neatly into the angle irons behind the raised trays, the lifting braces in turn lifting the trays. Or in the modification shown in Fig. 4, the springs 20 act directly upon the trays, and the flexible ties 25 merely fold

3

into the angle of the angle irons. In either case the tray-supporting mechanism is all in one vertical plane at the back of the trays when the trays are lifted, and therefore greater vertical flatness can be achieved, with much improved appearance, and the device may be fastened to a gondola back or other flat back board and lie parallel thereto.

I claim:

In a display stand, a support member having spaced vertical elements and horizontal bars supported by said elements at spaced positions; trays for holding merchandise having pivotal connections to said bars and swingable between horizontal and vertical positions; braces for said trays made in two pieces pivotally connected together at adjacent ends of said pieces, the other ends of said pieces being respectively connected to a tray and to said support member above the pivotal connection of said tray thereto, said braces being foldable into the plane of said support when said trays are swung to the vertical

4

and limiting the downward swing of said trays to the horizontal; and springs connected to said support adjacent the ends of said braces connected thereto and to those portions of said braces connected to said support and exerting a folding force directly on said braces for lifting said trays to the vertical when said trays are empty of merchandise.

References Cited in the file of this patent

UNITED STATES PATENTS

511,668	Weymouth	Dec. 26, 1893
1,217,414	Collins	Feb. 27, 1917
1,453,598	Obele	May 1, 1923
1,836,013	Carlson	Dec. 15, 1931
2,205,193	Goldman	June 18, 1940
2,494,798	Dobkin	Jan. 17, 1950
2,637,445	Patterson	May 5, 1953
2,716,459	Prevette et al.	Aug. 30, 1955
2,769,213	Stetson	Nov. 6, 1956