Sept. 22, 1959 O. G. LILJA 2,905,330

DISPLAY RACK

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Fig. 1

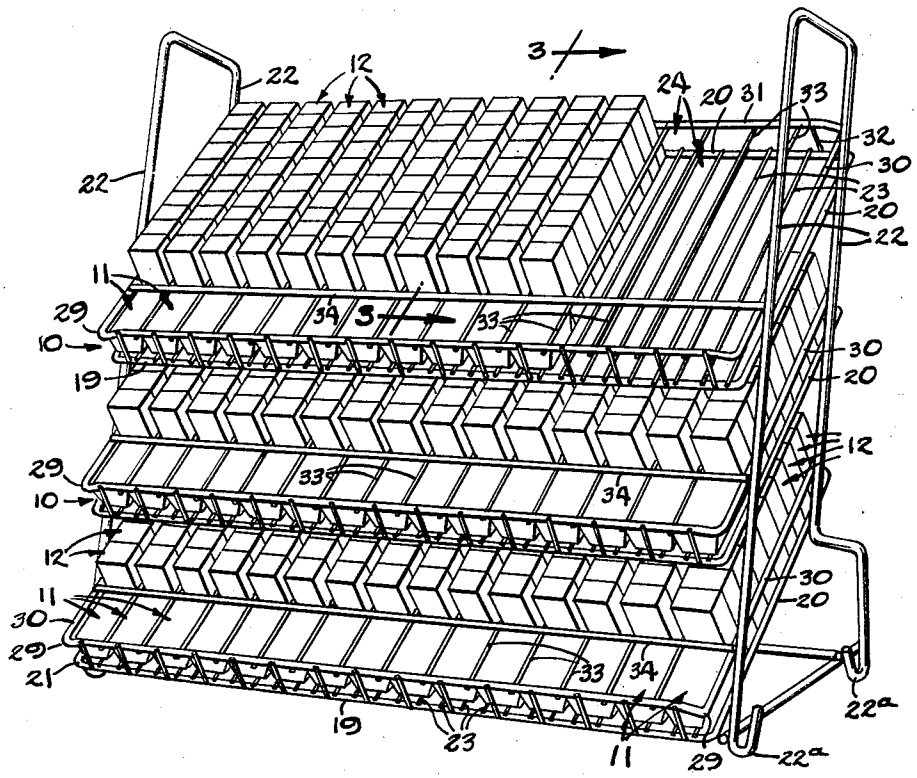
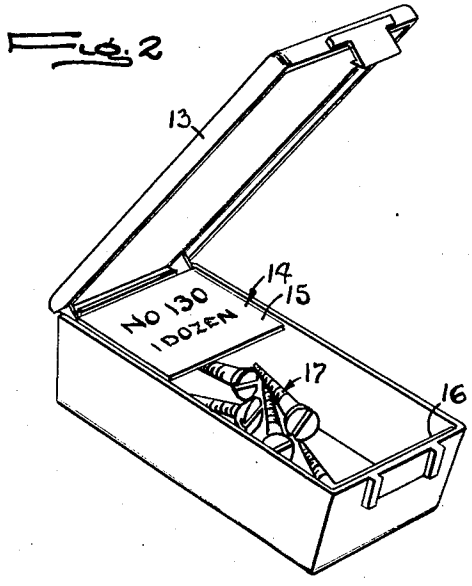


Fig. 2



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Fig. 3

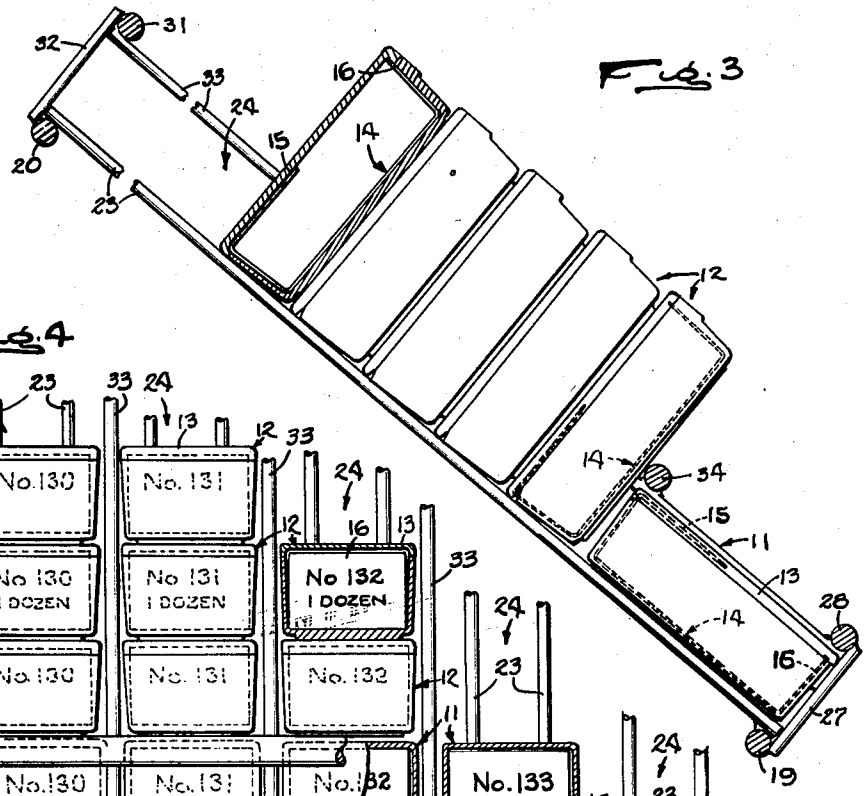
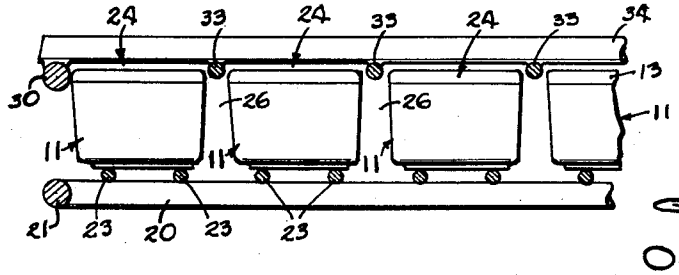


Fig. 4

Fig. 5



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DISPLAY RACK

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4 Claims. (Cl. 211—49)

This invention relates to a rack for supporting a plurality of elongated rectangular boxes in a plurality of rows in downwardly inclined chutes for feeding the boxes to a dispensing position.

The primary object is to support the terminal box of the row in each chute in a different position more advantageous for the purpose of display and to at least partially conceal the edges of the boxes so as to discourage a prospective customer from attempting to withdraw the display box from the chute.

The invention also resides in a simple and novel construction of the parts of the chutes for effecting the concealing of the display boxes.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings, in which:

Figure 1 is a fragmentary perspective view of one form of the improved display rack.

Fig. 2 is a perspective view of one of the boxes.

Fig. 3 is a fragmentary section taken along the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary plan view of the rack as shown in Fig. 3.

Fig. 5 is a fragmentary section taken along the line 5—5 of Fig. 4.

The rack shown in the drawings for purposes of illustrating the invention comprises generally a plurality of shelves 10 disposed one above the other and inclined downwardly and forwardly to support a plurality of parallel rows of boxes of the same construction but positioned differently as indicated at 11 and 12 on the shelves for advantageous display in the case of the lowermost or terminal box 11 of each row or for convenient withdrawal by a prospective customer in the case of the remaining boxes 12 of each row.

Each box is elongated and generally rectangular in shape comprising bottom, side and end walls preferably formed of transparent material and having a transparent cover 13 (Fig. 2) hinged at one end of the box to swing down onto the top. The box proper is partially lined by a label 14 which lies against the box bottom with tabs 15 and 16 at opposite ends upstanding at the ends of the box and bearing indicia visible from the exterior of the box and identifying the size or other character of the articles 17 contained in the box. The legends on the tab 15 are on an end portion of the label bent forwardly so as to underlie one end portion of the cover. With the box thus constructed and supported in a downwardly inclined position, the articles 17 therein slide along the bottom and are plainly visible through the cover between the ends of the label as shown in Fig. 4.

Each of the shelves 10 comprises a rectangular bottom frame having front and rear side members 19 and 20 joined by end pieces 21 which are inclined upwardly as shown in Fig. 3 and welded at spaced points to side posts 22 having feet 22a that rest on the floor or other

support. Spanning and welded to the frame members 19 and 20 are bars 23 arranged in pairs which are laterally spaced to underlie the boxes of different rows and form a bottom of a chute 24 down which the boxes of the row may slide. When resting on the pairs of bars 24, the boxes of adjacent rows are disposed quite close together with comparatively narrow intervening spaces 26 between them.

To display and permit convenient inspection of the different articles 17 contained in the boxes of the different rows, the lowermost box of each row is placed in normal upright position, that is, with the cover up, in its chute 24 and allowed to slide down the latter until its lower end comes into abutment with a stop 27. While the latter may take various forms, it is shown herein as comprising a short bar welded to the outer edge and upstanding from the member 19 of the shelf frame. If desired, the upper ends of the stop bars 27 may be connected by welding the same to the front member 28 of a rectangular frame similar to the bottom frame and disposed adjacent but slightly above (see Fig. 5) the tops of the display boxes 11. The connecting member 28 thus overlies and serves the additional purpose of concealing the front end of each display box and its cover thus assists in preventing access to this portion of the box by a prospective customer.

Opposite ends of the cross member 28 are bent down slightly as shown in Fig. 1, then curved as indicated at 29 (Fig. 4) and finally extended rearwardly along the outer sides of the outermost display boxes 11, the bends 29 overlying the outer corners of these boxes. At their rear ends, the side members 30 are joined to a rear cross member 31 to which is welded upright bars 32 upstanding from the rear member 20 of the bottom frame.

Convenient access by a customer to the side edges of the display boxes 11 is precluded by providing bars 33 extending along opposite sides of each chute 24, these being welded in the present instance to the under sides of the upper frame bars 28 and 31 so as to lie along and slightly above the upper edges of the spaces 26 between the covers of the adjacent display boxes 11 (see Fig. 5). These bars, although not as wide as the spaces 26, close these spaces sufficiently to preclude access to the covers such as to permit a customer to lift the box while in the display position at the lower end of one chute. Similar concealment of the outer edges of the boxes 11 in the outermost chutes is afforded by the frame bars 30 which, as shown in Fig. 5, lie in the same plane as the bars 33.

In addition to their concealing function, the bars 33 also define the side walls of the chutes which extend all the way across each shelf of the rack. To this end in the present instance their lower edges are disposed (see Fig. 5) slightly below the plane of the box tops and thus hold each box against substantial lateral shifting.

When in the display position, the upper end of each box 11 is rendered inaccessible by a rod 34 which is disposed above and extends across the bars 30 and 33 and is welded to the upper edges of the latter. Since the cross rod lies substantially in the plane of the upper end walls of the display boxes 11 as shown in Fig. 3, the end of each display box is concealed effectually. At the same time, the cross rod is spaced above the bars 23 a distance somewhat greater than the height of a box. This permits a display box loaded into the upper end of a chute to slide down beneath the bar 34 into display position against the stop 27.

The cross rod 34 also serves as a stop for limiting the downward movement of these boxes 12 which are stood on their ends in the chutes 24 and intended to be withdrawn for sale. When so stacked, the bottom of the lowermost box 12 abuts against the cross rod 34 with

the label tab **16** plainly visible to a prospective customer through the transparent end wall of the box. At the same time, the substantial length of the box which projects above the cross rod may be grasped conveniently and withdrawn from the chute after the customer has made his selection. After the lowermost box **12** has been thus withdrawn, the rest of the boxes **12** in that chute slide down the latter until the terminal box comes against the cross rod **34**.

To load the rack initially, the display box **11** for each chute **24** is placed cover up in the chute at a point along the latter above the cross rod **34**. This box is then slid down the chute and beneath the cross rod to its display position against the chute stop **27**. Then, the boxes **12** are inserted in the chute above the cross rod **34** and slid down the chute to form a solid row with the lowermost box abutting against the cross rod.

With each chute thus loaded, the edges of the cover **13** of each display box **11** will be sufficiently well concealed by the bars **28**, **34**, and **33** to discourage a prospective customer in any attempt to remove this box by tilting or lifting the same out of its chute. At the same time, the articles **17** in the box slide down to the lower end portion and remain plainly visible through the unobstructed part of the transparent cover.

If it is desired to remove one or more of the display boxes **11**, this may be accomplished by first sliding the entire group of boxes up the chute **24** and away from the stops **27**. Then, the display box may be slid up the chute beneath and then above the cross rod **34** far enough to expose both ends and enable the box to be grasped and lifted out of the chute. It will be obvious that a customer would not resort to this more complicated procedure in order to withdraw a box of the articles he has selected.

It will be observed from Fig. 1 that each shell **10** is spaced forwardly from the one above so as to render the display boxes **11** plainly visible and several of the boxes **12** readily accessible for convenient removal by the customer. In addition, a substantial number of additional boxes **12** may be stored in each lower chute and concealed by the shelf above such chute.

I claim as my invention:

1. The combination of, a plurality of elongated generally rectangular transparent boxes, means defining a plurality of downwardly inclined chutes for receiving rows of said boxes with narrow spaces between the adjacent rows, each chute being substantially longer than the length of each box, a stop at the lower end of each chute engageable with the end of a terminal box therein when the latter is bottomed in the chute with the longer dimension thereof extending longitudinally of the chute, parallel cross bars disposed immediately above and extending across the ends of said terminal boxes and overlying and at least partially concealing such ends, and side bars spanning said cross bars and overlying said spaces so as to prevent convenient access to the tops of said boxes for lifting the same manually out of the chutes, and other similar boxes stacked on end in each chute with one against the next and the bottom of the lowermost box abutting the upper one of said cross bars.

2. The combination of, a plurality of elongated generally rectangular transparent boxes, means defining a plurality of downwardly inclined chutes for receiving rows of said boxes, each chute being substantially longer than the length of each box and having a stop for engaging the leading end and thereby limiting the downward sliding of a box placed therein with the cover facing upwardly and the longer dimension of the box extending longitudinally of the chute, said box when abutting said stop being in a display position, and parallel cross bars disposed immediately above and extending across the ends of said display boxes and overlying and at least partially concealing such ends whereby to preclude access to the box ends for attempted tilting of the box and removal from its chute, the upper one of said cross bars forming a stop for limiting downward sliding of other similar boxes stacked on end in each chute whereby to permit the lowermost of the latter boxes to be withdrawn upwardly from the chute past said upper crossbar and thereby allow the row of boxes to slide downwardly against said bar.

3. The combination with a plurality of elongated generally rectangular transparent boxes means defining a plurality of downwardly inclined chutes longer than said boxes for receiving rows of the boxes with the bottom of the lowermost box of each row resting on the bottom of the chute, the other boxes standing on end and being stacked one above the other along the chute, and a cross bar overlying the upper edges of said lowermost boxes and forming a stop for limiting downward sliding of said other boxes, each chute having side members extending along and overlying the spaces between the adjacent lowermost boxes whereby to cooperate with said cross bar in precluding access to the lowermost boxes for manual lifting of the same.

4. The combination with a plurality of elongated generally rectangular transparent boxes, means defining a plurality of downwardly inclined chutes substantially longer than said boxes and having parallel rows of said boxes disposed therein with the bottom of the lowermost terminal box of each row resting on the bottom of the chute, and having its longer dimension extending longitudinally of the chute the other boxes standing on end and being stacked one above the other along the chute, stops at the lower ends of said chutes limiting downward sliding of said terminal boxes by engagement with the leading ends thereof, and a crossbar overlying the upper edges of said terminal boxes and formnig a stop for limiting downward sliding of said other boxes, each chute having side members extending along and overlying the spaces between the adjacent terminal boxes whereby to cooperate wtih said crossbar in precluding access to the terminal boxes for manual lifting thereof out of said chutes.

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