Dec. 1, 1953 F. DRUECK, JR 2,661,176

FOLDING DISPLAY RACK

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Fig. 1.

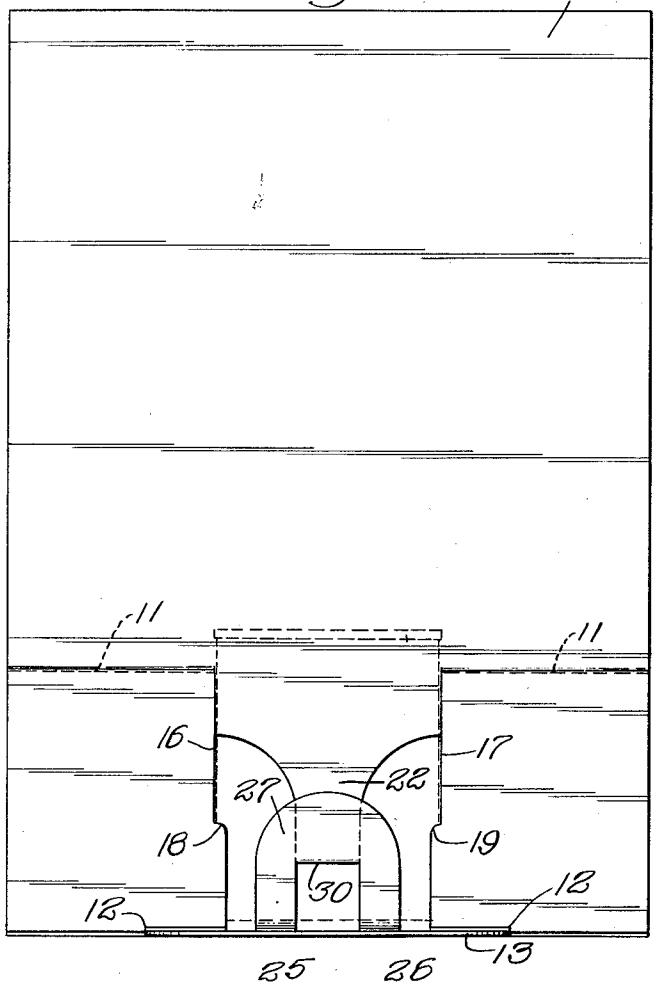
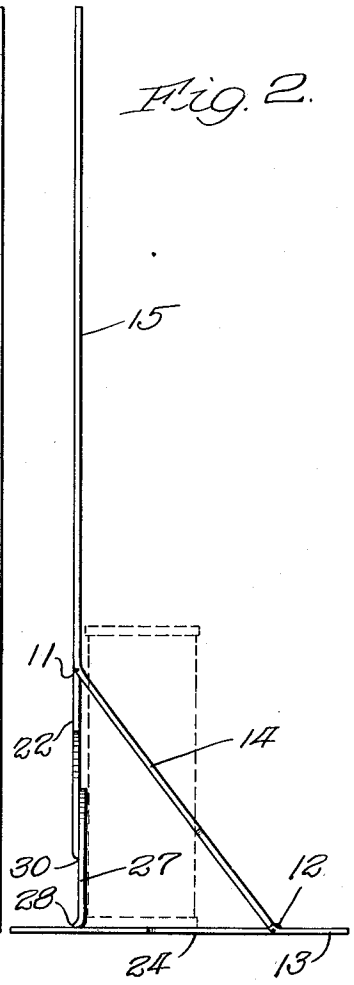


Fig. 2.



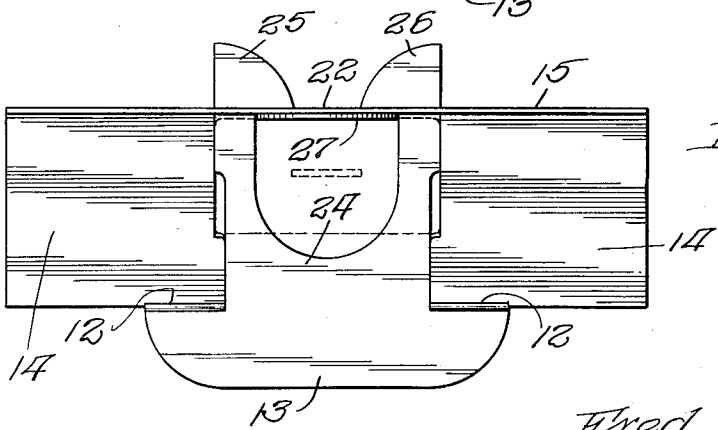


Fig. 3.

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FIG. 4.

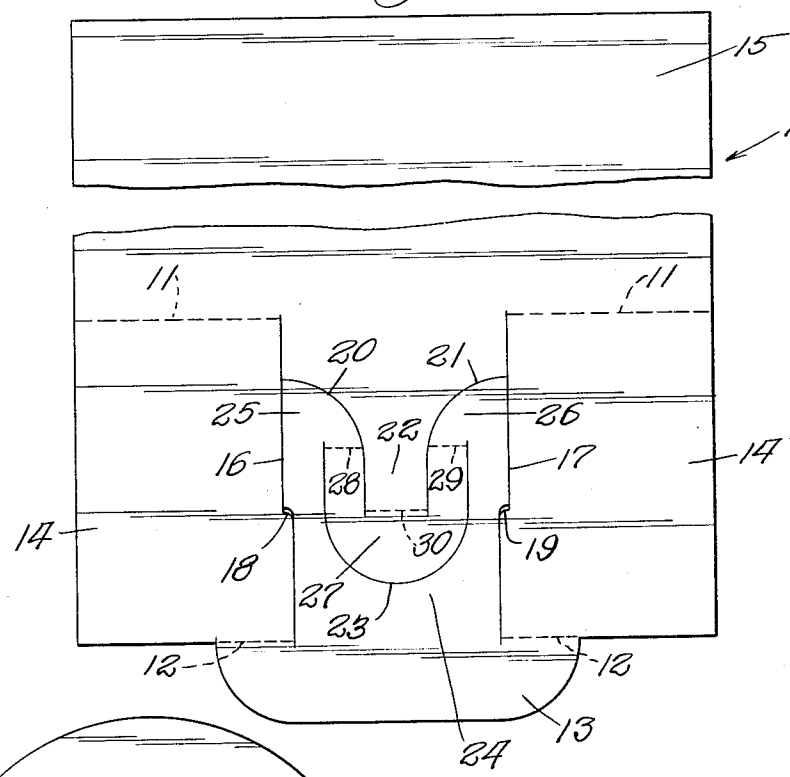
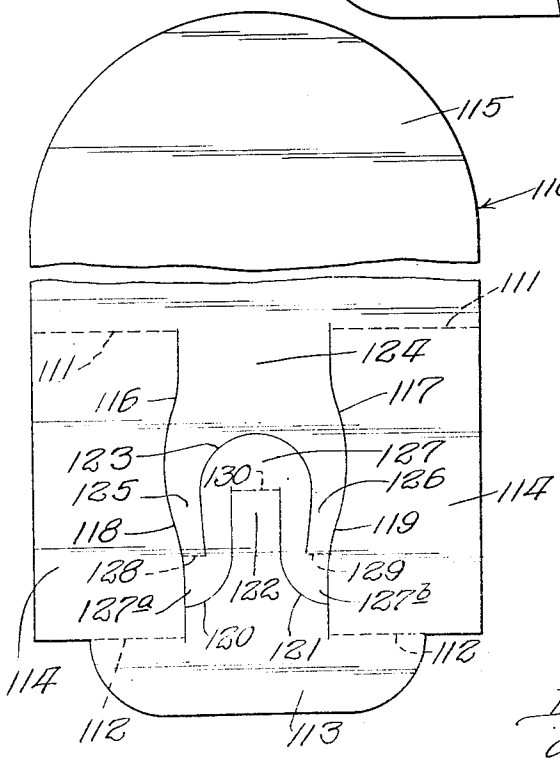


FIG. 5.



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Fig. 6.

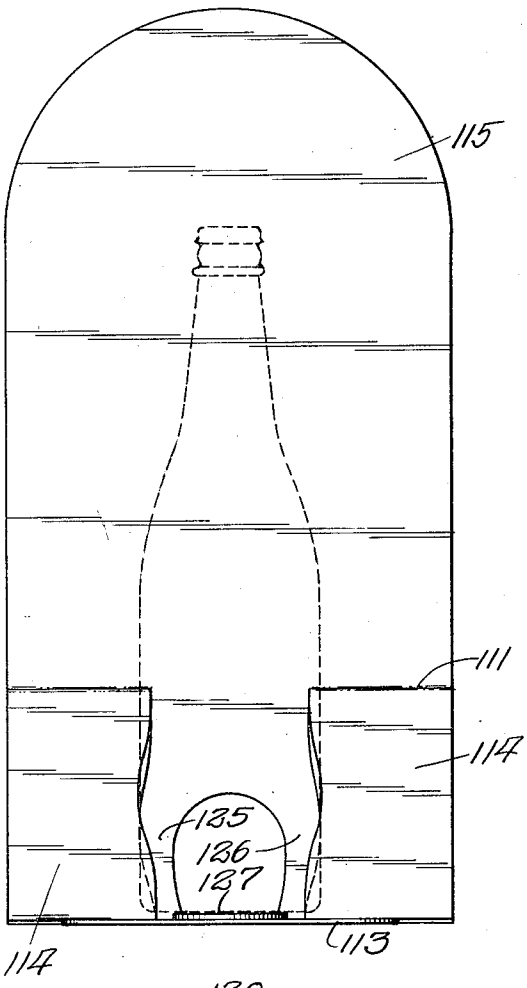
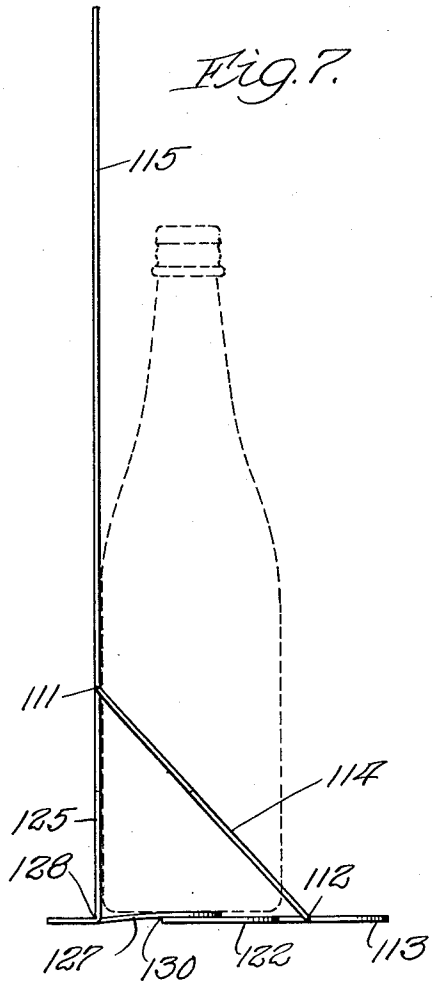


Fig. 7.



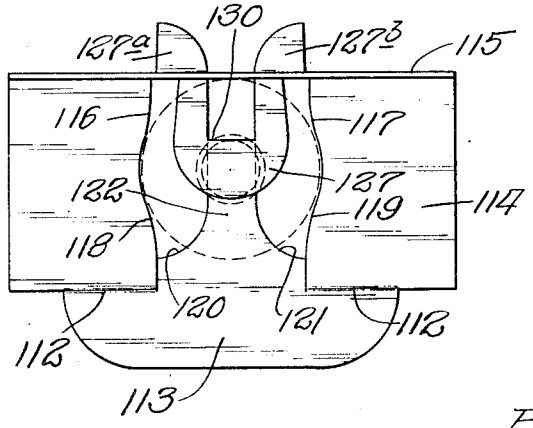


Fig. 8.

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UNITED STATES PATENT OFFICE

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FOLDING DISPLAY RACK

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Application December 10, 1948, Serial No. 64,678

4 Claims. (Cl. 248—152)

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This invention relates to a collapsible display rack, and in particular it relates to a one-piece rack which is held in assembled position by the item being displayed in it and which may be collapsed to a sheet which lies in a single plane.

Display racks of cardboard or other sheet material have commonly been made of several pieces, glued or keyed together. Consequently the manufacture of such a rack requires several steps, such as cutting, fitting and gluing; and manufacturing costs are relatively high.

The display rack disclosed herein is formed from a single piece of sheet material, such as cardboard; and may be blanked out with only cutting and scoring operations. Thus it may be produced at very high speed and low cost.

The invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a front elevation of the preferred form of display rack with a container displayed therein indicated in dot-dash lines; Fig. 2 is a side elevation of the device of Fig. 1; Fig. 3 is a plan view of the device of Fig. 1; Fig. 4 is a fragmentary plan view of the device of Fig. 1 in collapsed position; Fig. 5 is a fragmentary plan view of a modified form of rack in collapsed position; Fig. 6 is a front elevation of the modified form of rack with a bottle displayed therein indicated in dot-dash lines; Fig. 7 is a side elevation of the rack of Fig. 6; and Fig. 8 is a plan view of the device of Fig. 6.

Referring to the drawings in greater detail, the preferred form of the display rack is made from a single piece of sheet material, such as cardboard, and suitably scored and cut. As best seen in Fig. 4, a sheet of cardboard 10 is horizontally scored in the conventional manner, either by cut scoring or crease scoring, at 11 and 12. The score lines 11 and 12 are parallel to one another, and are interrupted, the interruptions in the score lines being in perpendicular alignment with one another. The score lines define a base portion 13, a gripping portion 14, and a display portion 15.

The sheet 10 is cut at 16 and 17, each cut extending substantially perpendicularly from a margin of the interruption of the score line 11, to the adjacent margins of the interruption of the score line 12. The cuts 16 and 17 include insets 18 and 19 to form shoulders whose purpose will be fully explained hereafter.

A pair of spaced, downwardly converging cuts 20 and 21 define, with the upper portions of the cuts 16 and 17, a tongue 22. A U-shaped cut 23 is spaced between the converging ends of the

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cuts 20 and 21, and the cuts 16 and 17. The cut 23, together with the cuts 16 and 17, define a bifurcated tongue 24 having arms 25 and 26 which span the narrow end of the tongue 22. The cut 23, together with the cuts 20 and 21, define a U-shaped connector piece 27. Score lines 28 and 29 provide a hinge between the extremities of the connector piece 27 and the arms 25 and 26 of the bifurcated tongue 24; and a score line 30 provides a hinge between the connector piece and the tongue 22. The score lines 28, 29 and 30 are preferably crease scores, to retain the strength of the full thickness of the sheet.

The display rack may be moved to the assembled position illustrated in Figs. 1 to 3 simply by bending it along the score lines 11 and 12. When these bends are made, the base portion 13 rests in a horizontal position, the bifurcated tongue 24 being integral therewith, and extending rearwardly therefrom. The gripping portion 14 extends upwardly and rearwardly from the base portion 13, and the display portion 15 surmounts the gripping portion 14 in an upright position. The tongue 22 forms an integral downward extension of the display portion 15, and the connector piece 27 hinges on the tongue 22 at the score line 30 so as to lie in an upright position with its arms extending downwardly to their hinged connections 28 and 29 with the arms 25 and 26 of the bifurcated tongue 24.

The motion of the tongues 22 and 24 and the connector piece 27 relative to the gripping portion 14 of the rack leaves an aperture in said gripping portion, said aperture having the tongue 24 beneath it and the tongue 22 along its back side. A display item, such as the box indicated in dot-dash lines in Figs. 1 to 3, may be inserted in the aperture with its base resting on the tongue 24 and its back surface pressed against the connector piece 27. The cuts 16 and 17 form the lateral margins of the aperture, and the insets 18 and 19 in said cuts provide shoulders which retain the display item against forward motion. It is thus noted that the engagement of the display item with the lateral margins 16 and 17 of the aperture, together with its pressure against tongues 22 and 24, retains the rack in assembled position. Upon removal of the display item from the aperture, the rack collapses into a plane sheet, with the tongues and connector piece lying in laterally overlapping relationship in the aperture as seen in Fig. 4. The display rack may be adapted to receive display items of various sorts by varying the cuts 16

and 17 so as to modify the shape and size of the aperture in the gripping portion 14. Thus, in the form of the device shown in Figs. 5 to 8 inclusive, the lateral margins of the aperture are curved so as to accommodate a bottle or other object of circular cross section. The curved cuts provide shoulders to restrain forward motion of the bottle.

In the form of the device shown in Figs. 5 to 8 inclusive, the positions of the tongues and the connector piece are reversed so that the connector piece lies in a horizontal position rather than in a vertical position when the rack is assembled. In this form of the device a sheet 110 is horizontally scored at 111 and 112. The score lines 111 and 112 are parallel to one another and are interrupted, the interruptions in the score lines being in perpendicular alignment with one another. The score lines define a base portion 113, a gripping portion 114 and a display portion 115.

The sheet 110 is cut at 116 and 117, each cut extending substantially perpendicularly from a margin of the interruption of the score line 111 to the adjacent margin of the interruption of the score line 112. As previously explained, the cuts 116 and 117 are curved outwardly so that the aperture in the assembled display rack will be of appropriate shape to accommodate a bottle or other object of circular cross section. The lower portions of the curves in the score lines 116 and 117 form shoulders 118 and 119.

A pair of spaced, upwardly converging cuts 120 and 121 define, with the lower portions of the cuts 116 and 117, a tongue 122. An inverted U-shaped cut 123 is placed between the converging ends of the cuts 120 and 121, and cuts 116 and 117. The cut 123, together with cuts 116 and 117, defines a bifurcated tongue 124 having arms 125 and 126 which span the narrow end of the tongue 122. The cut 123, together with cuts 120 and 121, define an inverted U-shaped connector piece 127 having outwardly flaring extremities 127*a* and 127*b*. Score lines 128 and 129 provide a hinge between the outwardly flaring extremities 127*a* and 127*b* of the connector piece and the arms 125 and 126 of the bifurcated tongue 124. A score line 130 provides a hinge between the connector piece 127 and the tongue 122. The score lines 128, 129 and 130 are preferably creased scores, to retain the strength of the full thickness of the sheet.

The display rack may be moved to the assembled position illustrated in Figs. 6 to 8 simply by bending it along the score lines 111 and 112. When these bends are made, the base portion 113 rests in a horizontal position, the tongue 122 being integral therewith and extending rearwardly therefrom. The gripping portion 114 extends upwardly and rearwardly from the base portion 113, and the display portion 115 surmounts the gripping portion 114 in an upright position, with the bifurcated tongue 124 forming an integral downward extension thereof. The connector piece 127 hinges on the tongue 122 and the scoring line 130 so as to lie in a horizontal position with its closed end overlapping said tongue and its arms extending rearwardly to their hinged connections 128 and 129, with the arms 125 and 126 of the bifurcated tongue 124.

The motion of the tongues 122 and 124 and the connector piece 127 relative to the gripping portion 114 of the rack leaves an aperture in said gripping portion, said aperture having the tongue 122 beneath it and the tongue 124 along its back side. A display item such as the bottle indicated in dot-dash lines in Figs. 6 to 8, may be inserted in the aperture with its base resting on the connector piece 127 and the tongue 122, and its upright surface braced against the tongue 124. The cuts 116 and 117 form the lateral margins of the aperture, and the shoulders 118 and 119, formed by the lower parts of the curves in said cuts, retain the bottle against forward motion. It is thus noted that the engagement of the display item with the lateral margins 116 and 117 of the aperture, together with its pressure against the tongues 122 and 124, retains the rack in assembled position. Upon removal of the display item from the aperture, the rack collapses into a plane sheet with the tongues and the connector piece lying in laterally overlapping relationship in the aperture as seen in Fig. 5.

The foregoing detailed description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, as modifications will be obvious to those skilled in the art.

I claim:

1. A one-piece folding display rack of sheet material, comprising: a horizontal, unitary base member which lies in a single plane, an upwardly and rearwardly extending gripping portion hinged to the rear margin of said base member, said gripping portion having an aperture to receive a display item, an upright display member hinged to and surmounting said gripping portion, an integral rigid tongue on each of said members and extending toward the plane of the other of said members, the first of said tongues being narrow and the second of said tongues being bifurcated and having the ends of its two arms flanking and spaced laterally from said first tongue, and a U-shaped connector piece which has its two arms hinged to said second tongue along a single transverse line and which is hinged to the end of said first tongue along a transverse line parallel to said single transverse line which lies between the arms of the U so that said connector piece lies in a plane parallel to the first tongue and has its base portion in facing contact with a portion of said first tongue, said display rack being retained in assembled position by engagement of a display item with the lateral margins of said aperture and pressure thereof against said tongues and being collapsible so as to lie in a single plane with the tongues and connector piece lying in the aperture in laterally adjacent relationship.

2. The display rack of claim 1 in which the margins of the aperture are shouldered to resist forward motion of a display item therein.

3. The display rack of claim 1 in which the bifurcated tongue is on the display member.

4. The display rack of claim 1 in which the bifurcated tongue is on the base member.

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