Feb. 5, 1929. 1,700,976

E. O. BULMAN

DISPLAY RACK

Filed Jan. 3, 1927 2 Sheets-Sheet 1

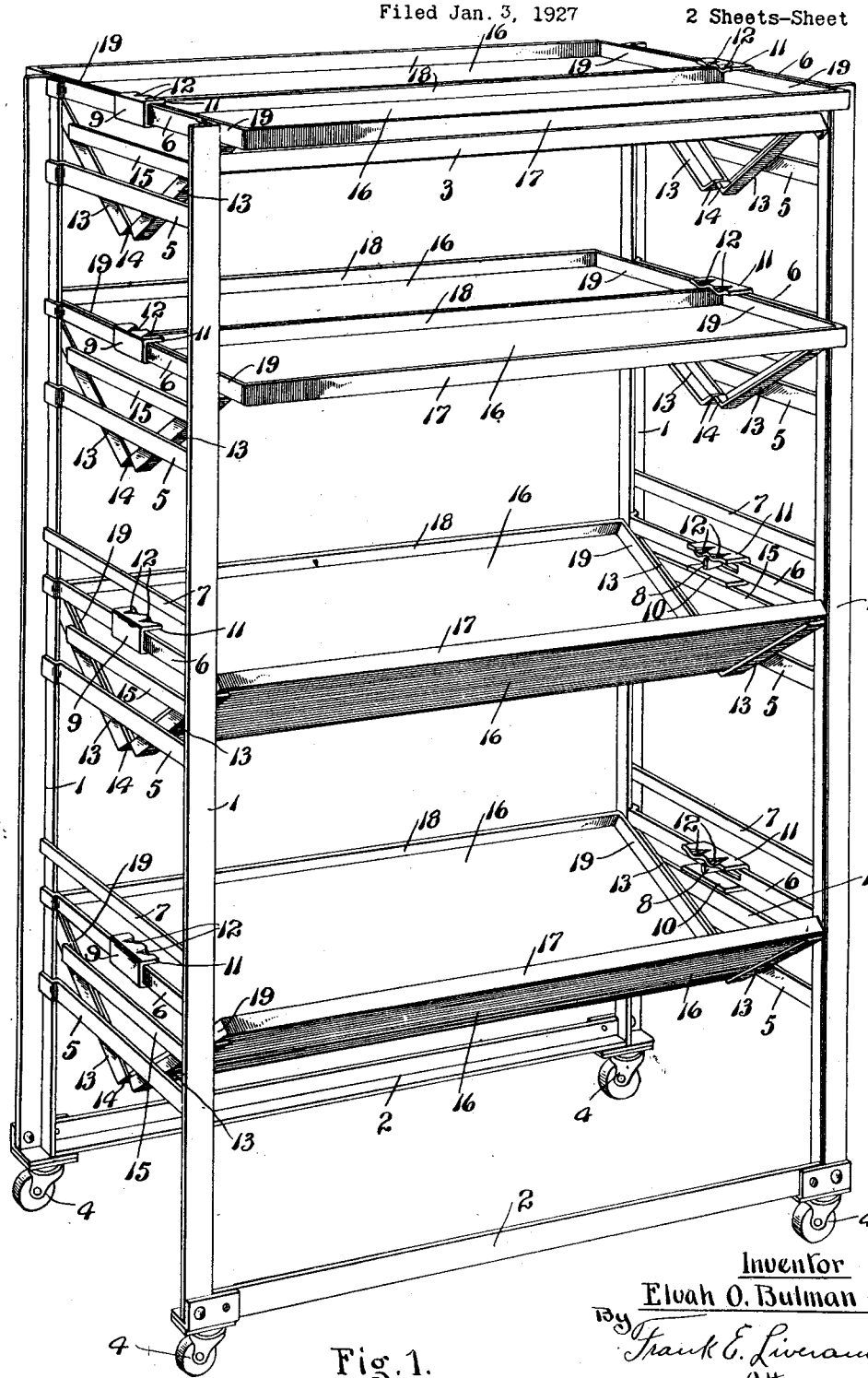


Fig. 1.

Inventor
Elvah O. Bulman
By Frank E. Liverance, Jr.
Attorney

Feb. 5, 1929. 1,700,976

E. O. BULMAN

DISPLAY RACK

Filed Jan. 3, 1927 2 Sheets-Sheet 2

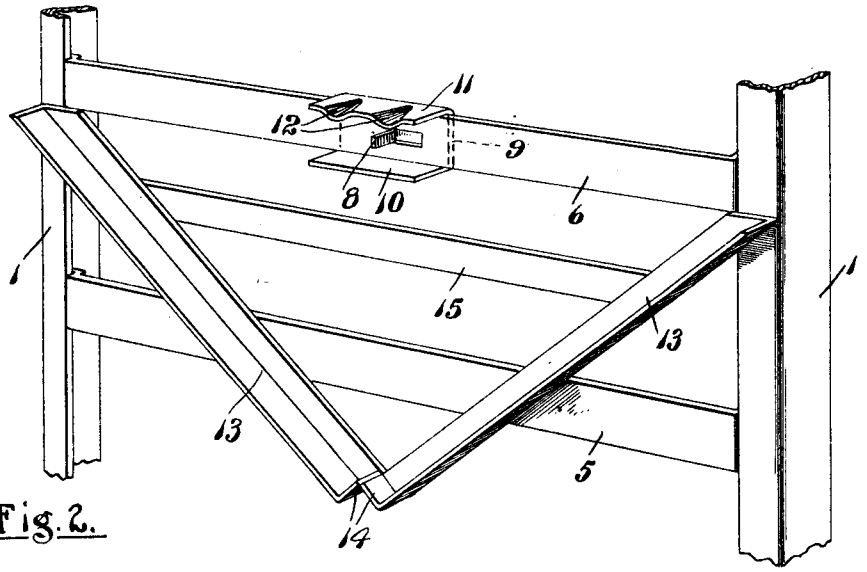


Fig. 2.

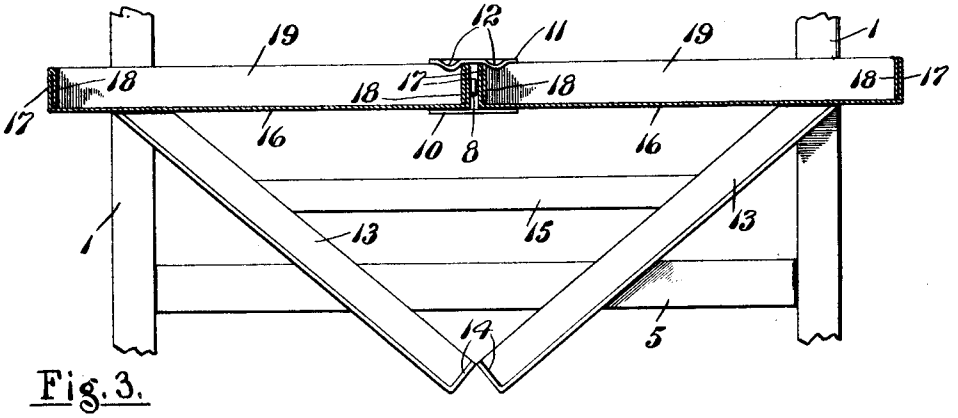


Fig. 3.

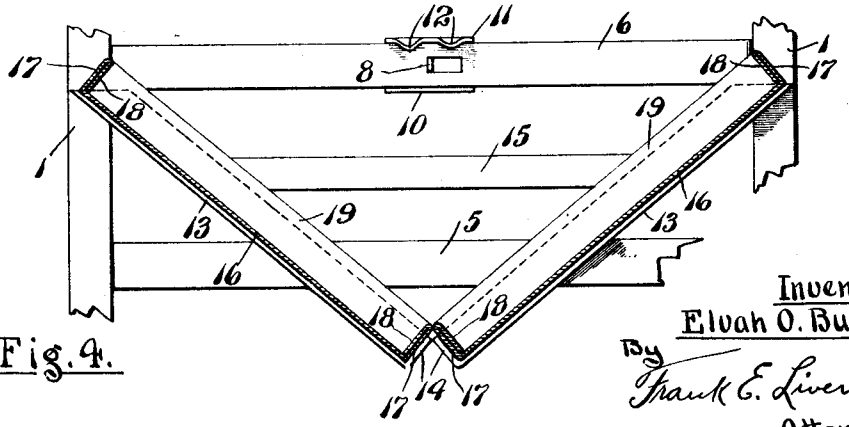


Fig. 4.

Inventor
Elvah O. Bulman
By Frank E. Liverance, Jr.
Attorney.

Patented Feb. 5, 1929. 1,700,976

UNITED STATES PATENT OFFICE.

ELVAH O. BULMAN, OF GRAND RAPIDS, MICHIGAN.

DISPLAY RACK.

Application filed January 3, 1927. Serial No. 158,515.

This invention relates to a display rack particularly adapted for use in retail stores. It is a primary object and purpose of this invention to construct a rack of simple and economical construction and in which article or merchandise holding trays may be supported either in horizontal or inclined position. In the horizontal position different articles of merchandise may be held by the trays and in the inclined position of the trays, two of the trays together provide a bin in which, as in grocery stores, many unpackaged articles of merchandise may be held such as potatoes, various grains and the like. The invention consists in many novel details of construction and arrangements and combination of parts whereby a rack of this character may be produced and one in which the change of any of the pairs of trays used thereon from horizontal to the inclined position, can be effected almost instantly and without the use of tools or skilled labor. For an understanding of the invention reference may be had to the following description taken in connection with the accompanying drawings, in which,

Fig. 1 is a perspective view of the rack, the upper trays being located in horizontal position and the lower trays in inclined position.

Fig. 2 is a fragmentary perspective view illustrating the inner end structure of the supporting frame of the rack for one of the pair of trays.

Fig. 3 is a fragmentary elevation of the structure shown in Fig. 2 but having a pair of trays applied thereto and held in horizontal position.

Fig. 4 is a view similar to Fig. 3, the trays being changed from horizontal to inclined position in which position they make a bin.

Like reference characters refer to like parts in the different figures of the drawings.

In construction, four corner posts 1, preferably of angle iron, are used and the posts at each side are connected at their lower ends by horizontal bars 2 of angle iron and at their upper ends by horizontal bars 3 which may be of any desired commercial form. The posts at each end of the frame are connected by a plurality of cross bars 5, 6 and 7 which are welded at their ends to the inturned flanges of the posts 1. The bar 5 is located below the bar 6 and bar 7 above the bar 6. In some instances the bars 7 are not used, that is, toward the upper ends of the rack as such bars are used only for additional strengthening and reinforcement. Each of the bars 6 between its ends and substantially midway between the posts 1 to which it is connected, is formed with an inwardly struck tongue 8, the purpose of which will later appear.

On each of the bars 6 a member of channel form is located and secured substantially midway between its ends. Each of said members includes a web 9, a lower inwardly extending flange 10 and an upper inwardly extending flange 11, the web 9 lying against the outer side of its bar 6 and being spot welded or otherwise permanently secured thereto. Each of the flanges 11 is formed with two spaced apart downwardly pressed ribs 12, one lying at each side of the vertical plane of the tongue 8 struck from the bar 6 and located between the two flanges 10 and 11. This is best shown in Fig. 4.

It is to be understood that there are a number of the bars 6 with associated bars 5 in the height of the rack. A pair of the bars 6 with the channel members attached thereto, serve as a support for a pair of trays located between the ends of the frame as will later appear. In addition, at the inner sides of the end posts 1, inclined ways or guides 13 of angle iron are permanently secured, the same inclining from their upper outer ends downwardly and inwardly and meeting substantially midway between the front and rear sides of the rack frame. The vertical legs of these guides 13 are secured to the bars 5 and to the posts 1 by welding and the other legs of said guides adjacent their meeting ends are turned at right angles making stops 14, the free edges of which come against each other. The vertical flanges of the guides 13 are also connected by a bar 15 welded thereto which is located between bars 5 and 6, as shown in Fig. 2.

The trays which are used are made of sheet metal and are of rectangular form having a bottom 16 from which the metal is turned upwardly at right angles at each edge making sides 17 and the metal of each side is then bent back upon itself for reinforcement, as indicated at 18. The trays are completed by two ends 19.

A pair of trays may be disposed, as before stated, between any pair of the bars 6 which lie in the same horizontal plane and are attached to opposite ends of the supporting frame. The trays may be moved inwardly

horizontally so that their inner portions are received between upper and lower flanges 10 and 11 of the channel members, previously described, until their inner sides engage against the lugs 8 which serve as stops. Also the inner sides of the trays pass under the downwardly pressed ribs 12 so that when the outer portions of the trays are let down to horizontal position, resting upon the upper ends of the guides 13, the trays are secured against outward movement. In such position the trays are adapted to receive and hold any article of merchandise which can be conveniently placed thereon, packaged or otherwise.

The trays may also be carried in downwardly and inwardly inclined position by the guides 13. In such case they are disconnected from the channel members, drawn outwardly and then tilted so as to slide down the guides 13 until their inner sides come against the stops 14, as shown in Fig. 4. In such position the upper edges of the inner sides of the trays abut and make a closure so that articles placed loosely in the trays will not drop through any opening between the same. This in effect makes a bin which will hold large articles as the openings between the bars 5, 15 and 6 at the ends are not so large that the large articles can pass therethrough, while for smaller articles, such as grains or the like, any temporary removable end may be fitted in at each end against the bars 5, 15 and 6.

A rack of the character described is economically constructed, all of the parts being made from stock materials and easily blanked and formed with suitable dies. Part of the trays in the rack may be in horizontal position and part of them inclined to make bins as shown in Fig. 1. The trays are readily removed from the rack and are interchangeable between the two positions which they occupy in a very short time without the use of any tools. It is evident that the bars 2 and 3 may be disconnected whereby the rack can be shipped in knockdown form so as to occupy the least possible space. This rack construction is very practical and effective and has so proved in practice. The invention embodied thereby is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. A rack comprising a supporting frame, a tray associated with said frame and means on said frame for supporting said tray in either a horizontal or an inclined position comprising, an inclined guide on the frame on which the tray rests in inclined position and a support on the inner portion of the frame located horizontally with the outer end of said inclined guide whereby the tray may be supported in horizontal position by resting on said support at its inner edge and on the outer end of the inclined guide at its outer edge.

2. A rack comprising, a frame, a tray associated therewith, and means on the frame for supporting said tray in either inclined or horizontal position comprising, an inclined guide extending downwardly from the outer side to the inner side of the frame, a stop on the lower inner end of said inclined guide whereby the tray rests upon said inclined guide and stop in inclined position, and a support on the inner portion of the frame located horizontally with the upper outer end of the inclined guide whereby the tray may be supported in horizontal position by resting on said support at its inner edge and upon the upper outer end of the inclined guide at its outer edge.

3. A rack comprising, a frame, a tray associated therewith and means on the frame for supporting said tray in either inclined or horizontal position comprising, an inclined guide on the frame on which the tray rests in inclined position, a support on the inner portion of the frame located horizontally with the outer end of said inclined guide whereby the tray is supported in horizontal position with it inner edge resting upon said support and its outer edge resting upon the outer end of said inclined guide and a clip associated with said support and engageable with said tray to releasably retain the tray in position on the support.

4. A rack comprising, a frame, a tray associated therewith and means on the frame to support the tray in either horizontal or inclined position comprising, a guide extending downwardly from the outer to the inner portion of the frame, a stop at the lower inner end of the guide whereby the tray is supported in inclined position by resting on said guide and against said stop, a support on the inner portion of the frame located horizontally with the upper outer end of the inclined guide whereby said tray is supported in horizontal position by resting at its inner edge on said support and at its outer edge on the outer upper end of said inclined guide and a clip associated with said support and engageable with said tray to releasably retain the tray in position on the support.

In testimony whereof I affix my signature.

ELVAH O. BULMAN.