Sept. 2, 1941. D. H. BITNEY 2,254,770

DISPLAY RACK

Original Filed Jan. 7, 1939 2 Sheets-Sheet 1

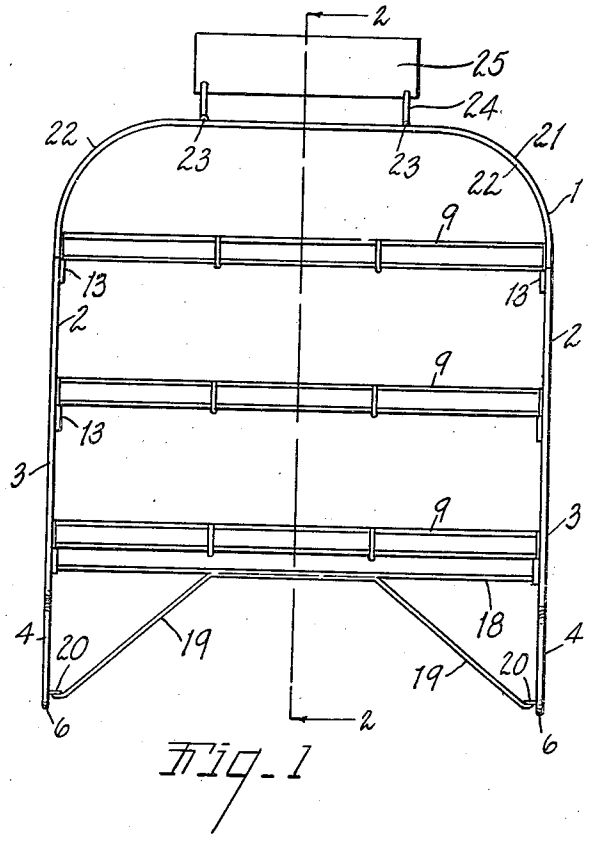


Fig. 1

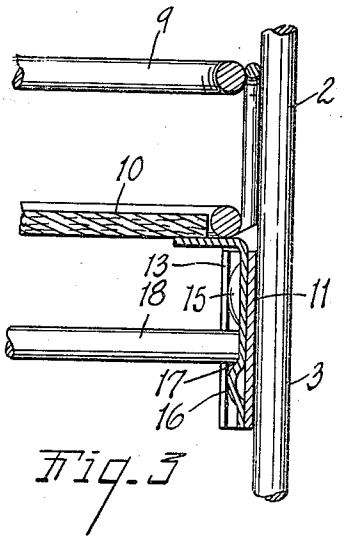


Fig. 3

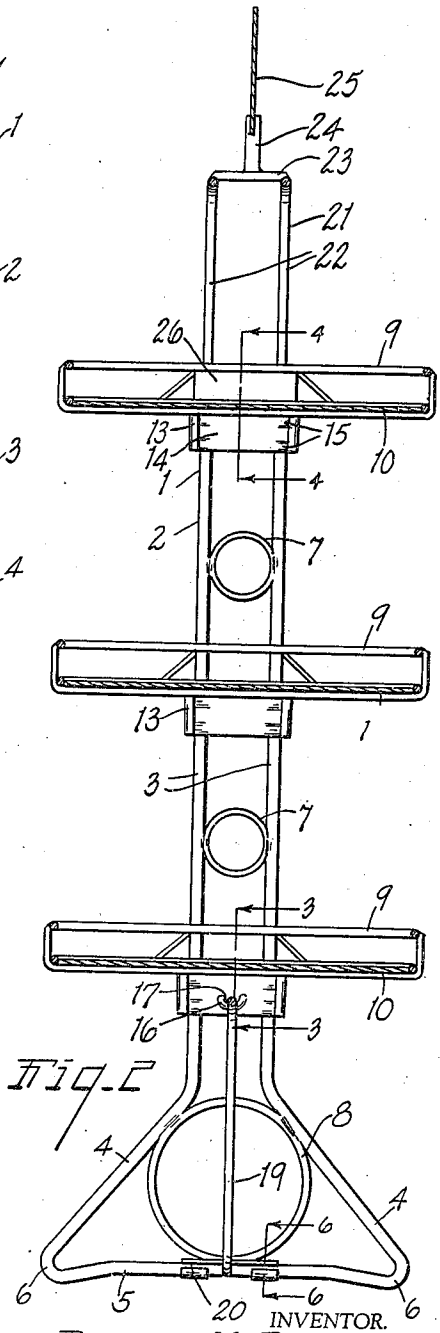


Fig. 2

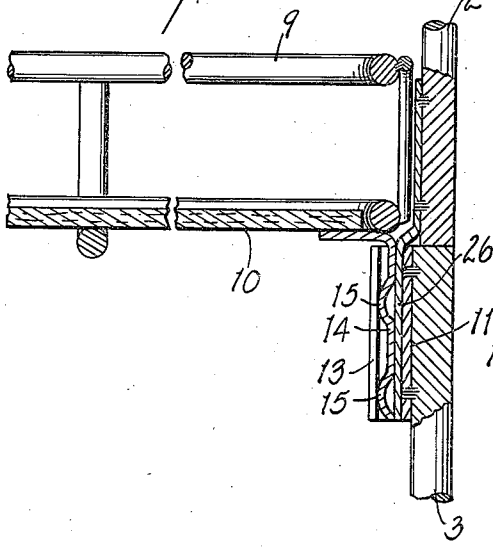
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Fig. 4



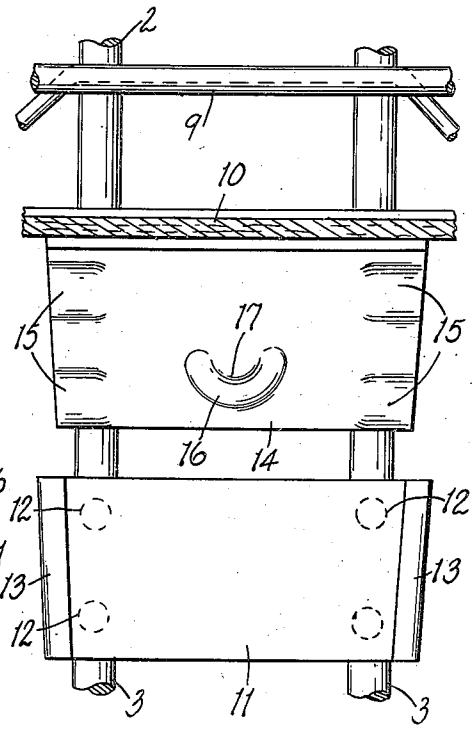


Fig. 5

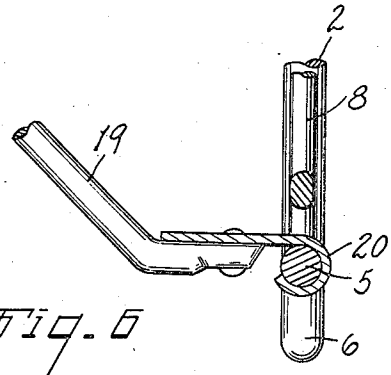


Fig. 6

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UNITED STATES PATENT OFFICE

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DISPLAY RACK

Dewey H. Bitney, Albion, Mich., assignor to Union Steel Products Company, Albion, Mich., a corporation of Michigan

Original application January 7, 1939, Serial No. 249,710. Divided and this application July 1, 1939, Serial No. 282,331

13 Claims. (Cl. 211—126)

This invention relates to improvements in display racks.

The main objects of this invention are:

First, to provide an improved display rack.

Second, to provide a display rack which may be shipped in the knock-down and set up by merchants or others without the aid of tools, and at the same time one which when set up is strong and rigid even when made of quite light material.

Third, to provide an all-metal display rack which is attractive in appearance notwithstanding the simplicity of structure thereof.

Fourth, to provide a display rack having these advantages, which when knocked down may be very compactly arranged for shipment or storage.

Further objects relating to details and economies of my invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A structure embodying the features of my invention is illustrated in the accompanying drawings, wherein:

Fig. 1 is a front elevation of the rack in accordance with my invention.

Fig. 2 is an enlarged vertical section on line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmentary view mainly in vertical section on line 3—3 of Fig. 2.

Fig. 4 is an enlarged fragmentary view mainly in vertical section on line 4—4 of Fig. 2.

Fig. 5 is a fragmentary view partially in vertical section illustrating certain steps in the assembling and also certain structural details.

Fig. 6 is an enlarged fragmentary view in section on line 6—6 of Fig. 2.

This is a division of my copending application Serial No. 249,710, filed January 7, 1939, and entitled Display racks.

In the embodiment of my invention illustrated, the reference numeral 1 indicates the rack which is provided with a pair of laterally spaced uprights 2 each comprising a single piece of wire or rod stock of suitable gauge bent to provide a pair of vertical uprights or legs 3 which are positioned quite closely together and have downwardly diverging lower ends 4 connected by the upwardly offset cross pieces 5 to provide substantially spaced feet 6. This results in stability. The uprights are connected by cross pieces 7 and 8 of circular form, the cross piece 8 being disposed between the downwardly diverging parts 4 and the cross piece 5 and welded to the three parts. This provides a rigid upright or end pedestal structure.

The racks or trays 9 are of the shelf or tray type consisting of shallow wire baskets preferably having removable bottoms 10. The bottoms of course might be provided by properly spaced wires or otherwise as that forms no part of my present invention. The uprights have sheet metal socket members 11 welded thereto as indicated at 12, these socket members being downwardly tapered and having inturned socket flanges 13 at each end thereof.

The tray members are provided with downwardly tapered plate-like dowel members 14 having struck-up wedging portions 15 at the ends thereof frictionally and clampingly engageable within the socket flanges 13, thereby providing a very firm and rigid connection between the dowels and their sockets and therefore between the shelves or trays and the uprights, the shelves or trays constituting longitudinal frame members and bracing members for the uprights. The dowel plate of the bottom shelf or tray has segmental lugs 16 struck up therefrom providing seats 17 for the bracing rod 18 which is of such length that its ends are in abutting engagement with the dowel plates as best shown in Fig. 3. This rod 18 is provided with inclined braces 19 which terminate in clips 20 adapted to be bent around the bottom members 5 as shown in Figs. 2 and 6. These clips are preferably of bendable metal that can be bent with the fingers, thereby avoiding the necessity of securing tools for the assembly of the structure. The stresses on the braces are such that this type of connection is sufficient.

I preferably provide a top structure 21 which serves as a bracing and finishing member. This structure 21 comprises a pair of arched rods 22 connected by cross pieces 23 and cross pieces, preferably uprights 24, thereon adapted to receive a display card 25. This top structure 21 terminates in plate-like dowel members 26 adapted to be inserted in the top sockets of the uprights as clearly shown in Fig. 4, the upper pair of sockets on the uprights being enlarged if necessary to take in the two dowels although it will be understood that as the parts are formed of stampings and are relatively thin and springable, they can be wedged together and it is desirable to have the dowels and sockets in wedging engagement, as I have pointed out.

I have illustrated and described my improvements in an embodiment which is very practical. I have not attempted to illustrate or describe other embodiments or adaptations as it is believed this disclosure will enable those skilled in the art

to embody or adapt my improvements as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a display rack, the combination of end members comprising spaced uprights and connecting members therefor, sheet metal socket members welded on the inner sides of the uprights in opposed pairs and provided with inturned end flanges providing sockets, and rack members provided with downwardly projecting plate-like dowels having portions struck up at each end thereof providing wedging members engaged in frictional wedging engagement with said socket flanges, said rack members constituting longitudinal connecting and bracing members for said end members.

2. In a display rack, the combination of pairs of upright rod-like end members, sheet metal socket members on each pair of end members in connecting relation thereto and provided with inturned end flanges providing sockets, and rack members provided with downwardly projecting plate-like dowels having portions struck up at each end thereof providing wedging members engaged in frictional wedging engagement with said socket flanges, said rack members constituting longitudinal connecting and bracing members for said end members.

3. In a display rack, the combination of pairs of spaced parallel rod-like uprights constituting end members, socket members on each pair of uprights in connecting relation thereto, and rack members provided with downwardly projecting plate-like dowels having wedging engagement with said socket members, said rack members constituting longitudinal connecting and bracing members for said end members.

4. In a display rack, the combination of end members comprising uprights, sheet metal socket members fixed to the inner sides of the uprights in opposed pairs and provided with inturned end flanges providing downwardly tapered sockets, a rack member provided with downwardly projecting plate-like dowels having portions struck up at each end thereof for wedging engagement with said socket flanges, and bowed top members spaced to correspond to the uprights of the end members and adapted to rest thereon, said top members being provided with downwardly projecting dowel plates engageable in said sockets at the outer sides of said rack member dowels, and having connecting cross pieces.

5. In a display rack, the combination of end members comprising uprights, sheet metal socket members fixed to the inner sides of the uprights in opposed pairs and provided with inturned end flanges providing downwardly tapered sockets, a rack member provided with downwardly projecting plate-like dowels having portions struck up at each end thereof for wedging engagement with said socket flanges, and bowed top members spaced to correspond to the uprights of the end members and adapted to rest thereon, said top members being provided with downwardly projecting dowel plates engageable in said sockets at the outer sides of said rack member dowels.

6. In a display rack, the combination of end members comprising uprights, socket members secured to the inner sides of the uprights in opposed pairs, a rack member provided with downwardly projecting dowels engageable with said sockets, and bowed top members spaced to correspond to the uprights of the end members and adapted to rest thereon, said top members being provided with downwardly projecting dowels engageable in said sockets, and having connecting cross pieces.

7. In a display rack, the combination of end uprights, socket members secured to the inner sides of the uprights in opposed pairs and defining pairs of upwardly opening sockets, one adjacent each upright, a rack member provided with a pair of downwardly projecting dowels engageable with said sockets, and a top member provided with a pair of downwardly projecting dowels also engageable in said sockets.

8. In a display rack, the combination of end members each comprising a pair of laterally spaced uprights formed of a single piece of stock bent to provide substantially parallel upper portions and downwardly diverging lower portions connected by an upwardly offset cross piece portion providing substantially spaced feet, cross pieces disposed between said uprights and welded thereto, the lower cross piece being disposed between the downwardly diverging portions and welded thereto and to the cross piece portion, bowed top members spaced to correspond to the uprights of the end members and adapted to rest thereon, and socket members on the upper ends of said uprights adapted also to constitute shelf support elements, said top members being provided with dowels engageable in said socket members.

9. In a display rack, the combination of end members each comprising a pair of laterally spaced uprights formed of a single piece of stock bent to provide substantially parallel upper portions and downwardly diverging lower portions connected by a cross piece portion, cross pieces disposed between said uprights and welded thereto, the lower cross piece being disposed between the downwardly diverging portions and welded thereto and to the cross piece portion, bowed top members spaced to correspond to the uprights of the end members and adapted to rest thereon, and socket members on the upper ends of said uprights adapted also to constitute shelf support elements, said top members being provided with dowels engageable in said socket members.

10. In a display rack, the combination of end members each comprising a pair of laterally spaced uprights formed of a single piece of stock bent to provide substantially parallel upper portions and downwardly diverging lower portions provided with an upwardly offset cross piece providing substantially spaced feet, bowed top members spaced to correspond to the uprights of the end members and adapted to rest thereon, and socket members on the upper ends of said uprights adapted also to constitute shelf support elements, said top members being provided with dowels engageable in said socket members.

11. In a display rack, the combination of end members comprising parallel vertically extending wire rod elements having downwardly diverging lower portions connected by a wire cross piece portion, said elements having further elements secured thereto and extending transversely thereof, said last named elements constituting sockets for the reception of shelf supports and having inner and outer portions frictionally engageable by the shelf supports, shelves extending between said end members and having downwardly extending shelf supports frictionally engageable with said last named sockets to main-

tain the shelves in operative position, and bowed wire top members spaced to correspond to the spacing of said first named elements whereby to rest thereon, said top members having dowels engageable in said sockets of the end members.

12. In a display rack, the combination of end members comprising parallel vertically extending wire rod elements having further elements secured thereto and extending transversely thereof constituting sockets for the reception of shelf supports, said socket elements having inner and outer portions frictionally engageable by the shelf supports, shelves extending between said end members and having downwardly extending shelf supports frictionally engageable with said last named sockets to maintain the shelves in operative position, and bowed wire top members spaced to correspond to the spacing of said first named elements whereby to rest thereon.

13. In a display rack, end members comprising parallel vertically extending wire rod elements having further elements secured thereto and extending transversely thereof constituting sockets for the reception of shelf supports, said socket elements having inner and outer portions frictionally engageable by the shelf supports, and shelves extending between said end members and having downwardly extending shelf supports frictionally engageable with said last named sockets to maintain the shelves in operative position.

DEWEY H. BITNEY.