

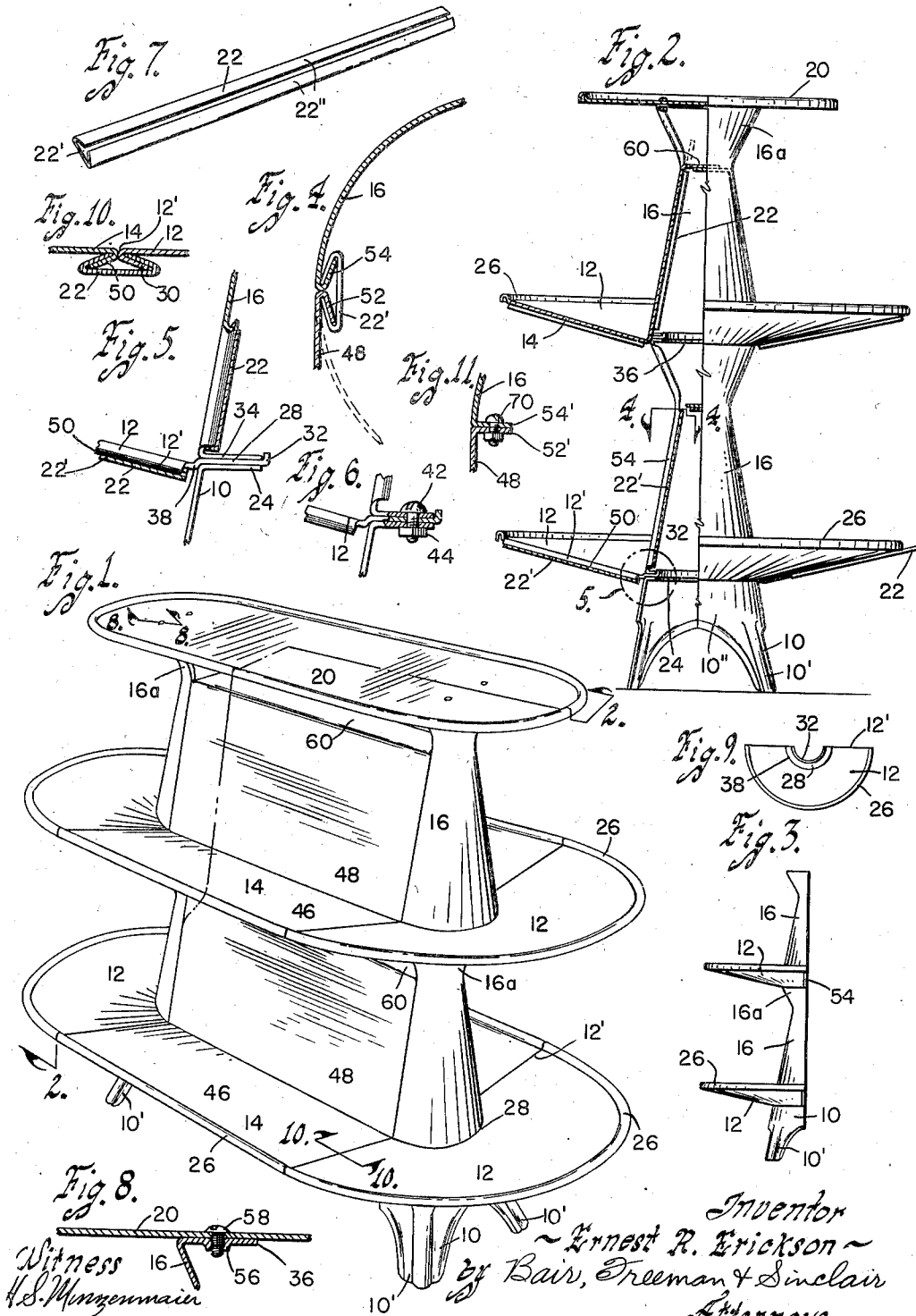
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DISPLAY RACK

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DISPLAY RACK

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The object of my invention is to provide a display rack of very simple, inexpensive and durable construction.

Particularly, it is my purpose to provide such a rack, which may be used for displaying bread or a variety of other articles, and which may be made entirely of metal by the economical process of stamping, and which can be made in parts or sections, which can be assembled so as to make racks of different kinds.

Another object is to provide a rack structure involving stampings and parts, which can be assembled to different points of completion for storage or transportation.

Another object is to provide parts for such a display rack having coating portions of novel construction for the convenient and quick assembling together of the parts.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my display rack, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:

Figure 1 is a perspective view of a completed display rack embodying my invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1, parts being broken away and parts being shown in section.

Figure 3 is a side elevation of one end of the rack with the parts thereof assembled together.

Figure 4 is a detail, sectional view taken on the line 4—4 of Figure 2.

Figure 5 is an enlarged, vertical sectional view illustrating the parts in the circle marked 5 in Figure 2.

Figure 6 is a somewhat similar view to that of Figure 5 showing a slightly modified arrangement, the sliding clips being omitted.

Figure 7 is a perspective view of one of the sliding locking clips.

Figure 8 is a detail, sectional view taken on the line 8—8 of Figure 1.

Figure 9 is a small somewhat diagrammatic top view of one of the shelf end members.

Figure 10 is a reduced, detail, sectional view taken on the line 10—10 of Figure 1.

Figure 11 is a view similar to that of Figure 4 of a modified form of the invention.

In making an all-metal display rack of substantial size, such as is used for instance in the grocery store to display bread, there are involved quite a number of problems.

I have found that these problems can be

solved and that such a rack can be made by stamping the parts of the rack from relatively thin sheet metal, so that the parts can be shipped entirely knock-down or partly assembled or completely assembled as may be desired.

Furthermore the parts can be assembled by a rather simple and speedy process.

In the particular form of my invention and of the rack here shown, I provide for stamping out a pair of base members 10, four shelf end members 12, four members 14, which form side shelf members and side upright members, four upright end members 16, a top shelf member 20 and a proper number of locking clips 22.

As will be seen from the explanation as I proceed, it is not necessary to make the complete rack in the particular form selected here for purposes of illustration, but racks of various sizes, shapes and kinds can be made by utilizing the ideas and structures here involved with the proper modifications.

The base members 10 are stamped out, each with a pair of spaced feet 10' connected together at their upper parts by a web 10'', having at its upper edge an in-turned substantially horizontal flange 24.

The shelf end members 12 have an outer periphery in the form of an upstanding, downwardly opening, channel-shaped rib 26 (see Figures 1 and 2).

The shelves of my rack are preferably substantially elliptical and the shape of the shelf end member 12 is such as to form the end of the ellipse as clearly shown. The metal is cut across the inner edge of the shelf end member 12 as indicated at 12' to leave a central, curved portion 28 slightly raised as indicated best perhaps in Figure 5 and Figure 9 and forming in-curved recesses.

It will be understood that preferably the shelves instead of being flat, incline slightly downwardly toward the inside.

At each of the edges 12', the material of the shelf end member 12 is bent downwardly and back on itself as indicated at 30 in Figure 10, for a purpose which will be later explained.

The portion 28 has at its inner edge an up-turned flange 32, substantially aligned with the edges 12'.

The upright end members 16 are generally speaking channel-shaped, tapering slightly from the lower end toward the upper end, and then having at the upper end slightly flared and outwardly turned portions 16a to give the device an artistic appearance.

At its lower edge, each member 16 has an in-turned flange 34 and at its upper edge, it has an in-turned flange 36.

The parts are so arranged that the part 28 may rest on the flange 24 heretofore mentioned and the flange 34 may rest on the part 28 for assembly purposes, all as illustrated in Figure 5.

Where the portion 28 is raised, there is a shoulder 38 against which the upper part of the base member 10 can abut for convenience in getting the parts properly relatively located.

Similarly the flange 32 serves as a member against which the inner edge of the flange 34 may abut for the same purpose of convenience in assembly.

While all the parts of my improved rack may be shipped knock-down, I call attention to the fact that end assemblies may be conveniently made.

An end assembly for the form of rack here shown consists of a base member 10, a shelf end member 12, an upright end member 16, a second shelf end member 12, and a second upright end member 16, all as shown in Figures 1 and 3.

Thus the portion 28 of the lower shelf end member 12 rests on the flange 24 of the base member 10 and the flange 34 of the first end upright member 16 rests on the portion 28, all as shown in Figure 5.

These portions 24, 28 and 34 may be spot-welded in the ordinary way, or if desired to retain the knockdown feature, they may be fastened together by bolts 42 and nuts 44, as illustrated in Figure 6.

In completing the end assembly, the portion 28 of the upper shelf end member 12 is rested on the in-turned flange 36 at the top of the lower upright end member 16 and the flange 34 of the upper upright end member 16 rests upon the portion 28 last referred to.

The parts may be spot-welded or bolted together as already mentioned.

This end assembly as shown in Figure 3 can be stored or shipped as may be desired.

It may be mentioned that a complete rack can be erected by connecting together two end assemblies of the kind just mentioned, and that such a rack will have substantially circular form. For such a round rack, I provide a round top member, not here shown, but which except for its shape would be substantially similar to the top member 20.

Assuming, however, that it is desired to make an elliptical rack, as shown in Figure 1, it will be understood that two end assemblies are completed.

For such a completed rack, I provide the members 14. Each of these comprises a side shelf portion 46 designed to connect two of the shelf end members 12 at the sides of the rack as shown in Figure 1. These side shelf portions 46 of the members 14 have at their outer edges the ribs 26, corresponding to and adapted to align with the ribs 26 of the shelf end members 12.

At their inner edges, the members 14 have up-turned parts inclined slightly inwardly and indicated at 48.

At their ends, the material of the portions 46 is bent under and back as indicated at 50 in Figure 10. At their ends, the material of the portions 48 is bent inwardly and backward as shown at 52 in Figure 4. At their upright side edges, the members 16 have their edges bent inwardly and back as shown at 54 in Figure 4.

The portions 48 terminate short of the upper ends of the members 16.

For interlocking the flanges 30 and 50 and the

flanges 52 and 54, I provide the channel-shaped clips 22 already described, each having a main strap-like portion 22' and a pair of over-turned inclined flanges 22''. These clips are arranged so that they may be slid over the flanges 30, 50 as shown in Figure 10 or over the flanges 52, 54 as shown in Figure 7.

Thus assuming that two of the end assemblies such as are shown in Figure 3 have been set up in the proper positions, then one of the members 14 is placed between them, as shown in Figure 1, until the parts are substantially adjusted in alignment, and then the clips 22 are slipped over the flanges 30, 50 from the outside edge.

One reason for the raising of the rib 26 is to allow for the assembling of the clips 22. Then from above, the clips 22 are slipped over the flanges 52, 54 as shown in Figure 4.

The same process is gone through for assembling the member 14 on the other side.

Thereupon the two upper members 14 are similarly assembled. This leaves the rack complete except for the top 20. The top 20 is then rested on the in-turned flanges 36 of the upper end uprights 16. The top may be spot-welded to the flanges or if desired these flanges may be provided as shown in Figure 8 with threaded openings 56 to receive short bolts 58.

At the top edges of the portions 48, they have for appearance sake in-turned flanges 60, which are short enough so that they do not interfere with the installation of the clips 22.

It should perhaps here be mentioned that at the points where the members 16 start to flare outwardly near their upper ends, the flanges 54 are so bent or cut as to permit the application of the clips 22, beginning at the tops of the members 48 as indicated by dotted lines in the upper left-hand part of Figure 2.

As has already been suggested, the separate parts may be packed for storage or shipment or the racks may be partially assembled as for example by assembling the members 10, 12 and 16 into an end assembly as illustrated in Figure 3.

It is obvious also that other possible partial assemblies could be made.

The simplicity of the structure here explained and the cheapness with which it can be built are very important. Added to these advantages is the fact that the arrangement shown lends itself to a good deal of flexibility in building racks of different kinds. For instance, if one wanted an extra long rack, all that is necessary is to make longer members corresponding to the members 14. The end assemblies could be used just as they are shown here.

Many other modifications are possible by rather simple changes.

As here shown, the upper and lower members 16 are alike.

It is obvious that it would be possible to give the rack the appearance of tapering upwardly by making the upper members 12 and 14 as here shown a little smaller than the lower members 12 and 14, and by making the upper members 16 a little smaller than the lower members 16 as here illustrated.

It is also obvious that instead of using the clips as a means for fastening the parts together, they could be spot-welded, bolted or otherwise connected.

In Figure 11 I have shown members 16 and 48 with right angle flanges 54' and 52' instead of the backturned flanges 54 and 52. The flanges 54' 75

and 52' are bolted together by bolts 70 as shown. This is a form which may sometimes seem desirable.

It is my purpose to cover by the claims of the patent to be issued hereon any modifications of structure or use of mechanical equivalents which may be reasonably included within the scope of such claims and within the spirit of my invention.

I claim as my invention:

1. In a partial assembly for a rack, a supporting member, a shelf member and an upright member having adjacent coacting, successively overlying flanges and means for securing the flanges together, a second similar partial assembly, the edges of the shelf and upright members being backturned, spaced combined shelf and upright members interposed between the partial members, having backturned flanges at their ends and channel shaped clips receiving the backturned flanges for locking together the partial assemblies and the combined shelf and upright members.

2. In a sheet metal rack, an end assembly having shelf and upright portions with backturned flanges, a second similar assembly, a pair of spaced combination shelf and upright members interposed between the end assemblies and combination members having backturned flanges adjacent the respective first-named back-turned flanges, and channel shaped locking clips for engaging the members of the respective adjacent pairs of flanges for locking the parts together.

3. In a rack structure, a shelf member having a curved outer edge and a transverse edge with a central recess, the material adjacent the recess being offset and terminating in an upturned flange, and a channel shaped upright member having a flange fitting and lying on the raised part and means for fastening the raised part and the last flange together.

4. In a partial assembly for a rack, a metal shelf member, an upright member thereabove, a second shelf member having an upturned portion, said shelf members having coacting adjacent flanges secured together, said upright member and upturned portion having coacting adjacent flanges secured together.

5. In combination in a metal display rack, a pair of end assemblies each having a pair of vertically spaced shelf members, an intermediate channel shaped upright member, said upright and shelf members having coacting connecting flanges, a pair of intermediate shelf members, each having at its inner end an upright portion, each of the first named members and each shelf having coacting flanges, and means for connecting the coacting flanges together.

6. In a rack structure, a shelf having an elongated central opening and having spaced end members and spaced side members extending upwardly from its inner edge, each upstanding edge of the end members being adjacent an upstanding edge of one of the side members, and means for locking the adjacent pairs of upstanding edges together to form a partial shelf assembly.

7. In a rack structure, a shelf having an elongated central opening and having spaced end members and spaced side members extending upwardly from its inner edge, each upstanding edge of the end members being adjacent an upstanding edge of one of the side members, and means for locking the adjacent pairs of upstanding edges together, supporting means for the shelf, and a shelf structure at the top of said end members.

8. In a rack structure, a shelf having an elongated central opening, and having spaced end members and spaced side members extending upwardly from its inner edge, each upstanding edge of the end members being adjacent an upstanding edge of one of the side members, the members of each pair of adjacent edges being formed with back-turned flanges, and channel-shaped locking clips receiving the back-turned flanges of the respective pairs of adjacent edges, supporting means for the shelf, and a shelf structure at the top of said end members.

9. In a rack structure, vertically spaced shelves having elongated central openings, spaced channel-shaped substantially upright end members connecting the shelves at their inner edges at the ends of the openings, spaced side members extending upwardly from the lower shelf from its inner edge, the ends of the side members being connected with the respective end members to form a continuous wall and means for supporting the lower shelf.

10. In a display rack, a plurality of sheet metal parts including spaced supporting members having at their upper ends, inturned flanges, a shelf having coacting flanges immediately overlying the respective in-turned flanges of the supporting members, upright members having coacting flanges overlying the respective flanges of the shelf, members extending upwardly from the shelf intermediate said first upright members, means for locking the first-named members to the second-named members at their respective adjacent upstanding edges, and a shelf-like element supported on the first-named upright members, and means for holding the supporting members and the last-named shelf-like element in assembled position in the device.

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