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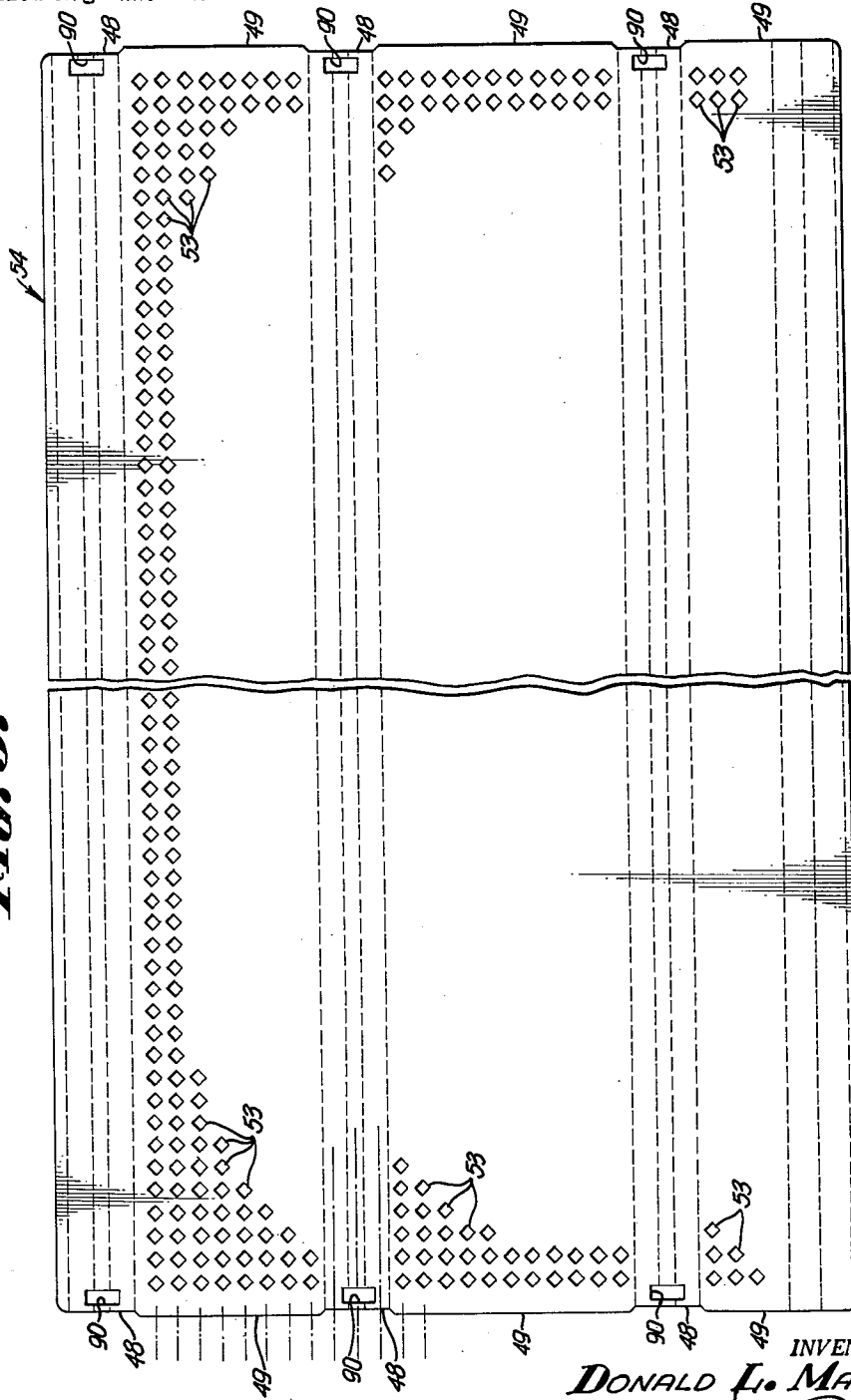
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MERCHANDISE DISPLAY SHELF

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FIG. 3.



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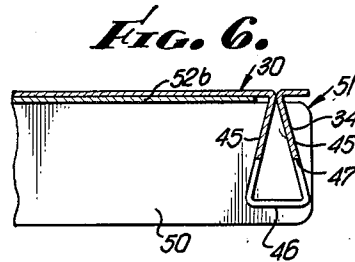
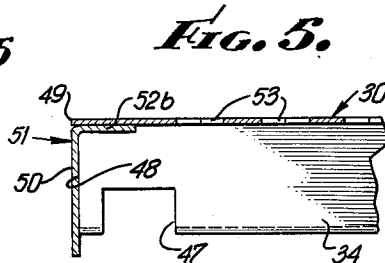
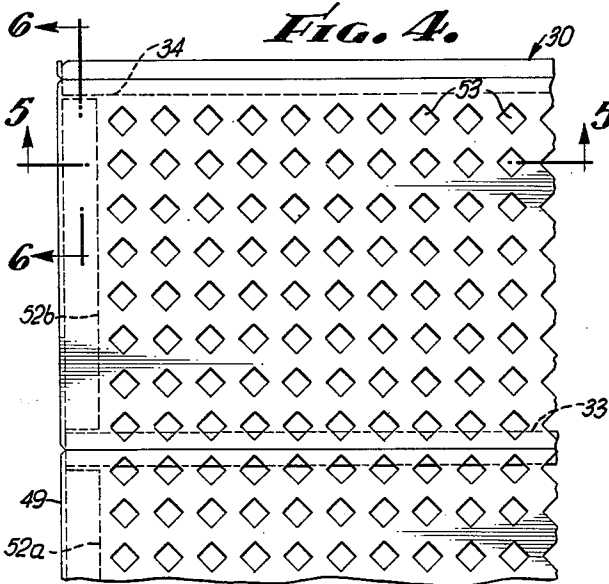
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MERCHANDISE DISPLAY SHELF

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M & D Store Fixtures, Inc., a corporation of California
Filed Aug. 22, 1960, Ser. No. 50,907
4 Claims. (Cl. 211-153)

This invention relates to store fixtures and particularly to a novel merchandise display shelf.

It has long been a common practice to make merchandise display counters and shelves of sheet metal with most of its surface occupied by an unbroken pattern of uniformly spaced holes. One purpose of these holes was to receive metal clips hooking therinto, these clips receiving the ends of low plate glass walls thus forming a complex of merchandise display bins covering the shelf.

The use of similar perforated sheet metal panels then began, these being erected vertically as by fastening to a wall, and the holes of these panels were engaged by merchandise supporting brackets on which merchandise was hung for display purposes.

The aggregate weight of merchandise often hung from a single panel rendered reinforcement of these panels advisable. Various expedients were employed for many years without any of these being wholly satisfactory until a perforated display panel with integral vertical die-formed reinforcing ribs was developed by me, this panel and the method of making the same being covered respectively by my copending applications for U.S. Letters Patent Serial No. 710,106 filed January 20, 1958, and Serial No. 792,891 filed February 12, 1959, the latter now being U.S. Patent No. 3,015,296, granted January 2, 1962.

Rib reinforcing for horizontal perforated sheet metal shelves has also been found desirable and the integral die-formed ribs originally developed for vertical wall panels were applied to horizontal sheet metal display shelves. While this was superior to types of reinforcement previously used on these shelves, the need since became apparent to me of increasing the rigidity and strength of these shelves beyond what was afforded by a reasonable number of the die-formed ribs disclosed in said copending applications.

It is an object of the present invention to provide a novel sheet metal merchandise display shelf which, without an increase in number of ribs and with very slight increase in weight will be very much stronger than shelves reinforced by the die-formed integral ribs aforesaid.

Another deficiency experienced in the use of merchandise display shelves equipped with the die-formed integral ribs used for reinforcing merchandise display shelves was that these ribs were U-shaped and presented an open channel or groove in the merchandise supporting face of the shelf. This tended to collect dirt which was difficult to remove because of the narrowness of these channels.

It is another object of the present invention to provide a novel sheet metal merchandise display shelf in which the shelf is provided with die-formed integral ribs which with a very slight increase in weight renders the shelf very much stronger than with the ribs employed prior to this invention, and which novel ribs do not form an open channel in the upper surface of the shelf as was the case with prior die-formed ribs.

Merchandise display shelves equipped with the prior type of U-shaped integral die-formed reinforcing ribs were found to lack the degree of flatness which is highly desirable in a merchandise display shelf so that goods supported thereon will rest upon a precisely level surface.

It is a further object of the invention to provide a novel sheet metal merchandise display shelf which is exceptionally strong, and one also which approaches absolute flatness with a very close tolerance.

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The manner of accomplishing the foregoing objects as well as further objects and advantages will be made manifest in the following description taken in connection with the accompanying drawings in which—

FIG. 1 is a diagrammatic perspective view of a preferred embodiment of the shelf of the invention.

FIG. 2 is an enlarged cross-sectional view taken on the line 2—2 of FIG. 1.

FIG. 3 is a diagrammatic fragmentary plan view of the substantially rectangular sheet metal blank of which the main body of the shelf shown in FIG. 1 is formed by the method of the present invention.

FIG. 4 is a fragmentary enlarged plan view of a corner portion of the shelf shown in FIGS. 1 and 2.

FIG. 5 is a fragmentary vertical detail sectional view taken on the line 5—5 of FIG. 4.

FIG. 6 is a fragmentary detail vertical sectional view taken on the line 6—6 of FIG. 4.

Referring specifically to the drawings, a preferred form of the shelf of the invention is illustrated in FIG. 1 and will be designated by the reference numeral 15. This shelf is adapted to be supported on a pair of channel posts 16 each of which has a vertical row of closely spaced lug engaging perforations 17. Lugs 18 provided on sheet metal arms 19 may optionally be inserted through any adjacent pair of the holes 17 and hook down over the lower edges of these as shown in FIG. 2 to support the arms 19 on the posts 16. Each of the arms 19 may also have a centering lug 20 which extends through the next lower hole 17 below the lugs 18. The arms 19 are preferably identical in outline as shown in FIG. 2 and include an upper edge 21 which is located horizontally when the arm is mounted on a post 16 each arm also preferably being provided with upwardly extending dogs 22 and 23 which are located respectively near the base of the arm and near the tip thereof.

The posts 16 are either mounted on a building wall or included as a part of the structure of a merchandise display island having a base resting on the floor and are properly spaced apart in vertical parallel relation so that when two of the arms 19 are mounted on the posts 16 at the same level they are adapted to readily provide horizontal support for the shelf 15. This shelf includes a flat sheet metal body 30 which is rectangular and is provided with a rigidifying vertically reinforcing price tag moulding 31 formed integrally with the body 30 along its front edge and with three reinforcing ribs 32, 33 and 34 which extend downwardly from and are also formed integrally with the body 30. Being an independent invention, the price tag moulding 31 is separately covered by my copending application for U.S. Letters Patent Serial No. 50,908 filed herewith and entitled Merchandise Display Shelf With Integral Convertible Price Tag Moulding.

This ticket strip is provided for the dual purpose of reinforcing the front edge of the body 30 structurally and constitutes also a means for supporting conventional price tags inserted therein at any desired location along the front edge of the shelf 15. The price tag moulding 31 is formed by providing an excess of metal at the front end of the blank employed for making the body 30 of the shelf 15 along the front edge of this and bending this metal downwardly, starting with a 180° bend 35, followed by a 90° bend downwardly to form a web 36, a 135° bend forwardly to form a web 37 and concluding with a 90° forward bend to form a lower price tag gripping flange 38. The horizontal upper portion 39 of the moulding 31 forms an upper tag holding flange which is in forwardly converging relation with the lower flange 38 so that price tags will readily be held in place when inserted between these two flanges.

The ribs 32, 33 and 34 are identical and a description

of one will therefore suffice for all. Taking the rib 32 for instance, this is seen to include side walls 45 and a bottom wall 46, the bottom wall being joined to the side walls by acute angles and the side walls being joined to the body 30 by acute angles so that the upper edges of said walls 45 are substantially in contact and the rib 32 has a triangular cross section. Notches 47 are provided in lower edges of the rib 32 at points adjacent its opposite ends (FIGS. 5 and 6). Opposite ends 48 of the rib 34 terminate a slight distance inwardly from adjacent end edges 49 of the shelf body 30 to provide room for receiving the outer flange 50 of end reinforcing sheet metal angles 51 this angle having upper flanges 52, 52a and 52b which underlie end marginal portions of the body 30 and are spot welded thereto so that the outer faces 50 of the angles 51 are flush with the end edges 49 of the body 30 (FIG. 5).

When the shelf 15 is laid over a pair of supporting arms 19 as shown in FIGS. 1 and 2 the upper edges 21 of said arms extend into notches 47 to support the shelf and the rib 34 is hooked over the dogs 22 to confine rib 34 between dogs 2 and posts 16 and thus properly position the shelf on said arms.

While the shelf 15 may be made so that its upper surface is imperforate, the shelf is preferably provided with a pattern of holes 53 which are square with the centers of adjacent holes uniformly spaced apart about 1/2 inch in both directions.

The price tag moulding 31 may be formed from the material at the front edge of the blank 54 either before or after the formation of the triangular box reinforcing ribs 32, 33 and 34. Application of the reinforcing sheet metal angles 51 to opposite ends of the shelf body 30 and spot welding flanges 52, 52a and 52b of these angles to said body now completes the construction of the shelf 15. When thus completed the shelf 15 contains only three separate parts, the body 30 and the two sheet metal angles 51 spot welded to opposite ends of said body.

The moulding 31 combines its special price tag holding function with that of a load bearing integral reinforcing rib rigidifying the front edge of the shelf 15. In a shelf not requiring such a moulding, the latter could readily be replaced by a special reinforcing rib such as one of the triangular box ribs shown.

The shelf 15 is not only superior in strength, lightness, flatness and economy of manufacture over its predecessors in this art but it sits very low over the supporting arms 19 thereby giving a pleasing, shallow silhouette to the shelf, viewed from the side, and increasing the vertical space between adjacent ends of superimposed shelves.

The claims are:

1. In a merchandise display shelf or the like, the combination of: a flat rectangular sheet of metal forming the supporting surface of said shelf; and reinforcing means for rigidifying said sheet of metal and including at least two ribs formed integrally downwardly from the material of said sheet, each of said ribs having flat side walls and a flat bottom wall which are related to give said rib a triangular cross section with said side walls uniting with marginal portions of said shelf at sharp acute angles and with upper edges of said side walls substantially in contact and with said side walls uniting with said bottom wall at relatively sharp acute angles, one of said ribs being disposed near each of two parallel edges of said shelf, there being notches approximately half the depth of said ribs formed upwardly in said ribs near their ends at the other parallel edges of said shelf; a pair of shallow sheet metal arms, the planes of said sheet metal arms being disposed vertically, upper edges of said arms being horizontal and extending upwardly into said notches and engaging the bottom thereof at the upper ends of said notches, to sup-

port said shelf with said shelf and arms having a relatively small overall depth; and means on said arms extending upwardly above the bottoms of said notches to engage at least one of said ribs in the planes of said arms to limit horizontal movement of said shelf parallel with said arms.

2. In a merchandise display shelf or the like, the combination of: a flat rectangular sheet of metal forming the supporting surface of said shelf; and reinforcing means for rigidifying said sheet of metal and including at least two ribs formed integrally downwardly from the material of said sheet, each of said ribs having flat side walls and a flat bottom wall which are related to give said rib a triangular cross section with said side walls uniting with marginal portions of said shelf at sharp acute angles and with upper edges of said side walls substantially in contact and with said side walls uniting with said bottom wall at relatively sharp acute angles, one of said ribs being disposed near each of two parallel edges of said shelf, there being notches formed upwardly in said ribs near their ends at the other parallel edges of said shelf; a pair of shallow sheet metal arms, the planes of said arms being disposed vertically, upper edges of said arms being horizontal and extending upwardly into said notches to engage the bottoms of the latter to support said shelf with said shelf and arms having a relatively small overall depth, said ribs extending from edge to edge in said shelf, yet being slightly shorter than the corresponding dimension of said shelf; and sheet metal angle shelf edge trim members having vertical and horizontal flanges, said horizontal flanges being notched to span said ribs and being spot welded flat against the bottom of said shelf whereby said vertical flanges trim the shelf edges at opposite ends of said ribs and lie flush with and extend vertically downwardly from said edges to overlie a substantial upper portion of said arms.

3. A combination as in claim 2 in which said ribs are parallel with front and rear longer edges of a rectangular shelf and in which the front rib is spaced about one-sixth of the shorter horizontal dimension of said shelf from the front edge of the shelf; and a reinforcing flange extending the entire length of said shelf and formed by bending the material from which said shelf is made, downwardly and rearwardly 180° and then in a reverse direction 90° to extend downwardly at approximately right angles to the said shelf, then obliquely forwardly and then sharply upwardly at 90°, to form a price tag holding channel integral with said shelf.

4. A combination as in claim 3 in which dog means are formed on said arms to extend upwardly therefrom into engagement with at least one of said ribs to properly position said shelf on said arms and engage said shelf to assist in supporting the same.

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