

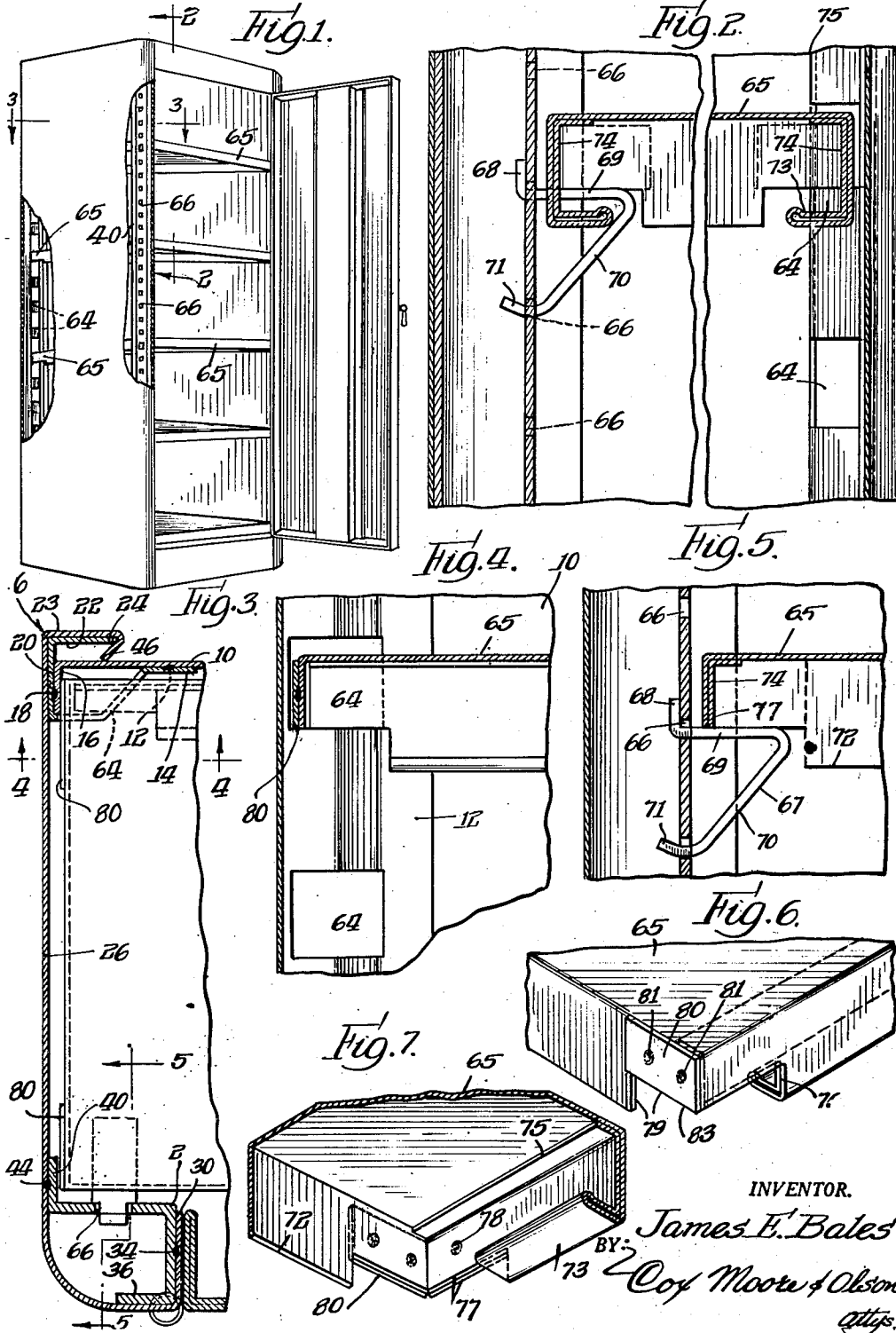
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SHELF CONSTRUCTION

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SHELF CONSTRUCTION

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5 Claims. (Cl. 211-153)

This invention relates to sheet metal shelf constructions.

Among the objects of the present invention is to provide a sheet metal shelf adapted for vertically adjustable positioning within a supporting and preferably enclosing cabinet or the like, wherein the shelf is composed of sheet metal preferably formed from a single blank folded and processed so to provide a rugged, rigid shelf, peculiarly reinforced and provided with a depending peripheral flange which is peculiarly reinforced and processed, particularly at the corners, so that the shelf is rigidly adjustably supported relative to the cabinet or the like; other objects of the invention will be apparent from a perusal of the following specification when taken in connection with the accompanying drawing, wherein:

Figure 1 is a perspective view of a storage cabinet, certain of the parts being broken away, and showing the shelves adjustably disposed within the interior of the cabinet;

Figure 2 is a fragmentary sectional view taken on the line 2-2 of Figure 1;

Figure 3 is a fragmentary plan sectional view taken on the line 3-3 of Figure 1;

Figure 4 is a fragmentary vertical sectional view taken on the line 4-4 of Figure 3;

Figure 5 is a fragmentary vertical sectional view taken on the line 5-5 of Figure 3;

Figure 6 is a fragmentary perspective view of the forward shelf corner; and

Figure 7 is a fragmentary perspective view of one of the rearward shelf corners.

This invention is a division of my pending application, Serial No. 382,922, filed March 12, 1941, entitled Storage cabinets, and the invention herein claimed is confined solely to the sheet metal shelf construction, per se; claims to the combination of the shelf and the supporting mechanism of the cabinet, whereby the shelf is adjustably supported vertically of the cabinet, are contained in the parent application, Serial No. 382,922, aforesaid. Only so much of the aforesaid pending application is disclosed herein as is necessary to an understanding of the present invention.

Referring now to the drawing in detail, particularly to Figure 1, this shows a rather tall cabinet having side walls, a rear wall, a front door, a bottom, and a top portion, not shown. It is to be understood that the invention is equally adaptable to other types of supports which require shelves. In the present instance, the

cabinet shown comprises two pairs of corner supports which are substantially identical.

Figure 2 shows the front and rear corner supports; the opposite front and rear corner supports not shown are identical. The front corner members form, in combination with the sheet metal side, hollow rigid corner posts, and the rear corner members form, in combination with the rear sheet metal wall, hollow rigid corner posts. This cabinet also comprises a single panel for the rear, a single panel for each side or end, an upper panel for the top, a bottom and a top panel member for the front, and a door which when closed forms a complete front, in conjunction with the upper and lower panel members, for the cabinet. The shelves, shown in Figure 1 within the cabinet, form the subject matter of the present invention.

Referring now particularly to Figure 3, it will be noted that the storage cabinet provides at the front two spaced apart vertically disposed angle irons 2, only one being shown in detail in Figure 3, which are disposed at the front corner of the cabinet. These rails are formed of a relatively heavy angle iron stock, and preferably of the cross sectional shape shown in Figure 3. The rear corner angle iron rails 6 are likewise shown in Figure 3. These rear angle irons or corner strips may be, if desired, formed of lighter sheet metal, for instance, for purposes of illustration but not by way of limitation, the front corner rails or strips 2 may be formed of 18 gauge strip material while the rear corner rails or strips 6 may be formed of 22 gauge strip, as compared with the sides and back which may be formed of 24 gauge sheet metal. The doors may be formed of 22 gauge sheet metal if desired.

It will be seen how these front and rear angle irons or strips are combined with the front and back panels to form hollow posts or pedestals for the cabinet in a manner to eliminate unsightly joints, fastening members and structural ends.

Referring again to Figure 3, the rear panel 10 is welded, as at 12 to a short flange 14 which is disposed parallel to the back or rear panel 10. The short flange 14 is a part of the rear corner angle iron or strip 6. The rear panel 10, from the locus at which it is welded at 12, continues outwardly and is bent preferably at right angles to form a flange 16 which is welded as at 18 to an angularly disposed face 20 of the corner strip 6. This face 20 of the corner strip 6 extends rearwardly to the rear of the panel 10 and is there bent, preferably at right angles, in spaced rela-

tion to the outer wall of the panel 10, as at 22, to overlie and be spaced from one of the outer ends of the rear panel 10 whereby to provide a free edge 24. Thus the rear panel 10 when welded to the portions 14 and 20 of the strip 6 forms therewith a hollow, rigid, vertically extending corner post or pedestal which is so arranged as to hide the inwardly extending free ends of the panel 10. The opposite rear corner construction of the cabinets is identical with that just described. The two side panels 26 have their respective front ends 30 contactingly overlying the outer face of the front corner strips 2, which outer face lies parallel to the sides 26, the same being welded thereto as at 34. From this welded zone the side panels 26 are bent smoothly over a front lateral flange 36 of each corner strip and are thus bent in curved conformation and pass over an angularly disposed flange 40 of each of the respective front strips 2 and are welded thereto as at 44. Each of these side panels 26 is thence disposed rearwardly and as shown in Figure 3 the ends are bent around, as at 23, the flange portion 22 of the rear strips 6 and then are obliquely or diagonally bent around, as at 46, the free edge 24 of the spaced apart flange 22 of the rear strip 6, whereby not only lockingly to hold the rear end of each side 26 in place, but likewise to cover the free edge 24 of the rear corner strip 6. Thus these rear ends 46 of each of the sides 26 are formed as hooks which hook over the free ends 24 of the rear strips 6 it being understood that the hook portions 46 extend the entire vertical height of the sides 26. The ends of these portions 46 preferably contact the outer wall of the rear panel 10 and are thus hidden from view. Inasmuch as these hook portions 46 are preliminarily formed in the sides 26 they comprise preformed hooks which thus facilitate the assembly of the sides and rear panel. Thus it will be seen that there are provided smoothly flowing, unbroken exteriors for the sides of the cabinet extending from the inner opposed vertical walls of the front strips 2 in curvilinear fashion around the front of these strips 2 and then rearwardly, thence in angularly disposed unbroken arrangement around the rear corner strips so that in so far as the front posts are concerned there are provided two spaced apart hollow front posts completely devoid of sharp corners and which, on the contrary, provide rounded tubular posts. In short, the sides combine with the front angle irons to provide front hollow posts and the sides combine with the rear panel and the rear angle irons to provide rear hollow corner posts.

The rear corner strips 6 are provided with a series of apertures 64 disposed in vertically spaced relation, which apertures are adapted to receive shelf members. Only two of the apertures 64 are shown in Figures 2 and 4, while the entire vertically disposed series of apertures are shown in Figure 1. These apertures are adapted to receive the shelf members so that the latter may be placed in a variety of vertically adjustable spaced apart positions. In addition, as shown in the drawing, the front strips 2 are provided with vertically spaced apertures 66 which are adapted to receive shelf supporting clips 67. Each of these clips has a vertical portion 68, a horizontal portion 69, a main downwardly inclined portion 70, and a narrow lower inwardly projecting end 71. The top portion 68 enters any one of the apertures 66 while the narrow lower portion 71 enters the next lower spaced aperture 66 whereby

to hold these clips as shown in Figure 5 to receive the front end of the shelf hereinafter described.

The shelf member per se, which forms the subject matter of the present invention, is preferably formed of sheet metal. In the present instance it is shown as comprising a single sheet or stamping of sheet metal, formed with a top portion 65 and depending flanges, certain ones of which are formed and constructed to provide reinforced walls to receive the horizontal portions of supporting clips, and certain of which depending walls are folded to eliminate rough edges, to provide ruggedness and likewise to reinforce and rigidify the top portion 65 of the shelf. In general, the sheet metal blank from which each shelf is made is cut and folded to provide on two of the sides a depending flange 72 of single thickness. On the opposite walls the depending flange is formed longer so as to permit the flange to be folded back upon itself as at 73 to provide a double smooth edge. This folded back portion is then carried under and upwardly as at 74 and then is bent in parallel fashion under the front and rear edges 65 as at 75, whereby these flange portions 75 reinforce the front and back edges of the top 65.

The opposed front and rear corners of the shelf are peculiarly formed whereby the shelves may be vertically adjustably supported within vertically spaced slots on the rear corner strips and may be supported on horizontal wall portions 69 of the front clips 67. In addition these corner portions are suitably reinforced and rigidified so that the flange of the top is sufficiently rugged to support considerable weight on the shelf top without giving way.

To this end the front flanges 73 are cut away as at 76, the cuts being formed through both thicknesses, as shown in Figure 6, to provide a double thickness supporting ledge or double edge 77, the two thicknesses of the metal being preferably welded together as at 78, see Figure 7. In addition, the side walls 72 are cut away as at 79 and a sheet metal plate 80 of the same dimensions as that portion of the side above the cut-away 79 is superimposed thereon and welded thereto as at 81 to form a reinforced, rigidified wall at this point, providing a reinforcing double edge 83, see Figure 6, which is adapted to rest upon the edge of slot 64 and the edge 77 rests on the surface 69 of bracket 67. The front and rear corners are identical in construction, hence the four corners of the shelf are thus exposed at the cut-away portions and at the rear of the shelf but adapted to be supported and to rest in the cut-out slot 64 of the rear corner strips whereby these two rear corners of each shelf are detachably supported into position such that they may be readily removed therefrom when desired. The front portions of each shelf are supported by the clips 67, of which there are two at the front. Thus each shelf will be firmly supported at its front corners and also at its rear corners. By cutting away the rear corners in the manner shown in Figure 7 there is provided a reinforced double edge corner support which is adapted to lie within each one of the cut-out slots 64 of the corner strip, as shown in Figure 3, as each one of these corner strips is diagonally disposed with respect to the rear panel 10 and side panels 26. Hence no other support is necessary for the two rear corners. In addition, by providing the front corner strips with the spaced slots 66 and with the brackets 67, adjustably mounted therein, and by forming the two front corners of each shelf

with the double vertical flanges reinforced for rigidity and cut away at their bottoms, the front corners of each shelf are rigidly and ruggedly supported on the horizontal portions of the brackets 67 at the corners thereof, and in addition each shelf, while formed of a single sheet metal stamping, is likewise provided with depending marginal flanges, the front and rear walls of which are folded backwardly upon themselves within the underside of each shelf to provide front and rear horizontal flanges, providing smooth inner edges for these flanges and are thence folded upwardly in parallelism with the outer wall of each depending flange and thence inwardly at the top to reinforce the top at the front and rear marginal edges thereof. With such a construction, so rigidified, it is not necessary to provide the side flanges of each top with double portions except at the cutaway corners which are reinforced by the plate-like members 80 welded to the correspondingly shaped corner portions of the side walls 72. If desired, the side flange walls 72 at the front and for an area corresponding to the width of the plates 80 may be formed of double vertical height and folded back upon themselves in the manner that the front reinforced walls are, and welded thereto and thence cut out along the line 79 to form the double thickness of the side at the front and also at the rear portions of these side walls.

When it is desired to place a shelf in any vertically adjusted position, the shelf is raised, the brackets 67 are placed in the desired vertically spaced slot 66 and the shelf is then shifted, the rear corners projecting into the corresponding slots 64 which are located in a common horizontal plane of the front edges, lying upon the horizontal portions 69 of the two spaced brackets 67. It is understood, of course, that there may be provided a plurality of shelves, each being supported by the two brackets at the two front corners and each having its two rear corners supported in corresponding rear slots.

It is thought that the invention and numerous of its attendant advantages will be understood from the foregoing illustrative description and it is obvious that numerous changes may be made in the form, construction and arrangement of the several parts without departing from the spirit or scope of the invention or sacrificing any of its attendant advantages, the form herein described being a preferred embodiment for the purpose of illustrating the invention.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A shelf construction for a storage cabinet comprising a sheet of metal having a top of rectangular formation, two of the opposed sides of said top depending therefrom and being folded upon themselves to provide a double flange, the metal of the flange portions at the corners thereof being cut away and the flange normal to and adjoining the end portion of the double flange being reinforced to provide a portion of double thickness at the cut away edge to provide a reinforced shelf supporting edge of double thickness

located in a plane above the lowermost plane of said flange, the remaining opposed sides of the top being of a single thickness of metal except at the ends adjacent the junction with the first mentioned sides.

2. A shelf construction for a storage cabinet comprising a sheet of metal having a top of rectangular formation, the sides of said top depending therefrom and certain of said sides being folded flat upon and in contact with themselves to provide a double flange, the flanged portions at the corners being cut away to provide angularly disposed double edges at the corners located above the adjacent edges of the respective angularly disposed flanges, one of said double edges being adapted to support said shelf.

3. A shelf construction for a storage cabinet comprising a sheet of metal having a top of rectangular formation and integral sides depending from the top, certain of said sides being folded upon themselves to provide opposed flanges of double thickness, the flanged portions at the four corners being cut away to provide angularly disposed double edges at the corners located above the adjacent edges of the respective angularly disposed flanges, one of said double edges being adapted to support said shelf.

4. A shelf construction for storage cabinets comprising a sheet of metal having a top of rectangular formation, the top having four integral sides depending therefrom to form opposed sides, having extensions projecting inwardly, said extensions having portions folding upon themselves providing reinforced horizontal flanges and said extensions extending upwardly parallel to the vertical side walls of the flanges and in contact therewith and thence extending inwardly parallel to and in contact with the top to reinforce the side walls of the flanges and to reinforce the top at its periphery, the portions of such reinforced vertical side walls and said horizontal flanges being cut away adjacent the corners to provide a double walled edge disposed above the plane of the inwardly extending flange and the reinforced wall portions immediately above said cut away edge being welded together for rigidity, and the adjacent angularly disposed side walls of the two opposed side walls being of double thickness welded together with their bottom edges cut away to provide additional edges lying in the same planes as the first-mentioned double edges.

5. A shelf construction for a storage cabinet comprising a sheet metal top of rectangular formation having a top and four depending sides providing vertical side flanges, all four corner portions of the flanges having wall portions of double thickness, and by which said top rests for support, said double wall portions being interwelded for rigidity, one of such wall portions of double thickness lying inside of one of the vertical flanges and the adjacent wall portion of double thickness being disposed exteriorly of the adjacent vertical depending wall of the top.

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