

March 16, 1926.

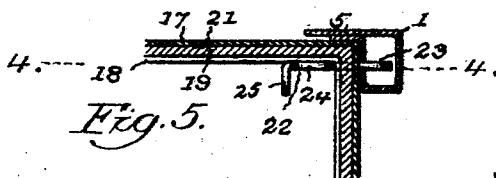
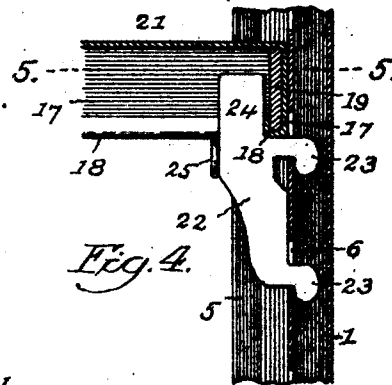
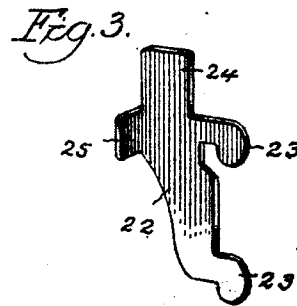
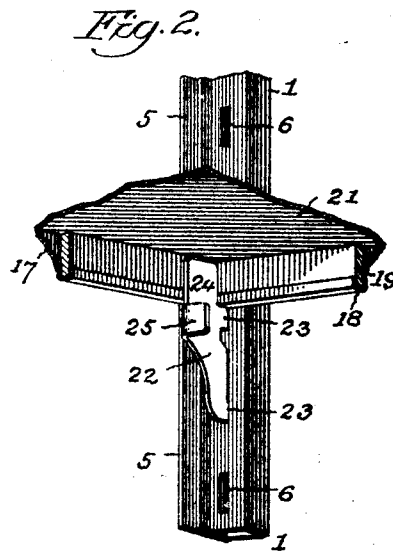
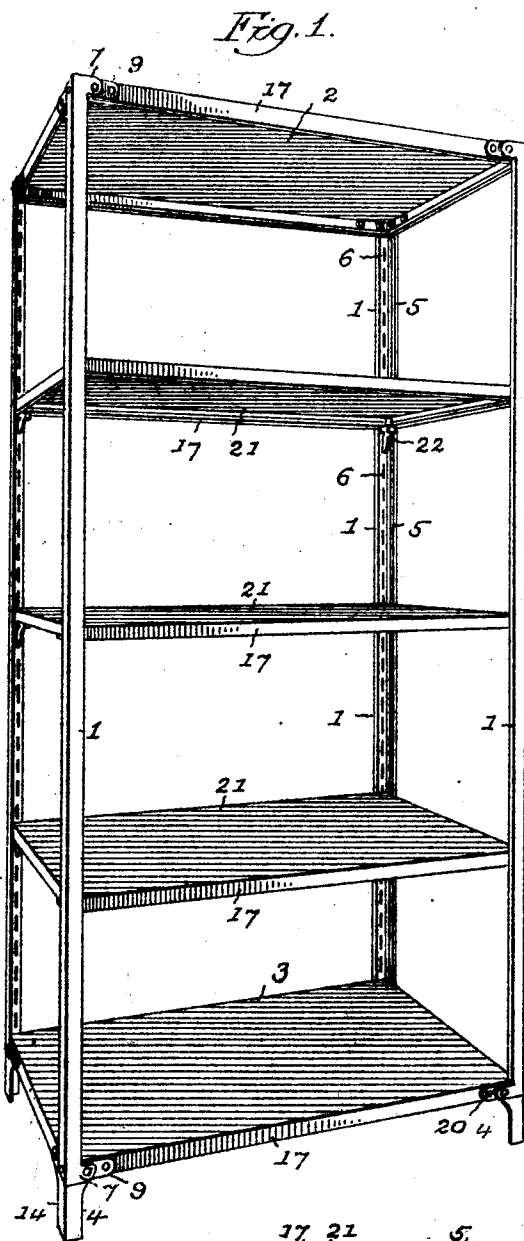
P. S. MEDART ET AL

1,577,066

METALLIC SHELVING

Filed Sept. 15, 1924

4 Sheets-Sheet 1



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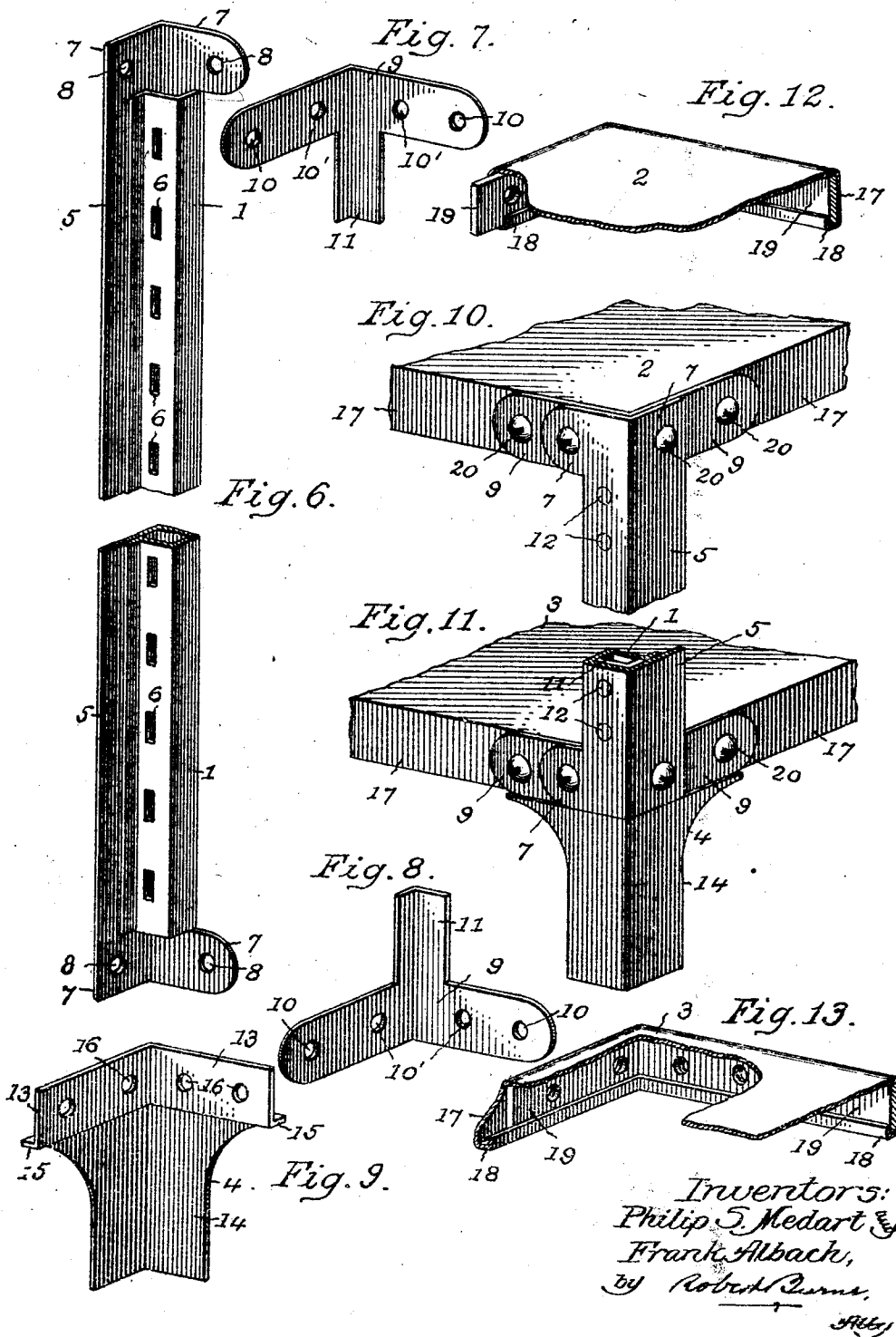
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METALLIC SHELVING

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METALLIC SHELVING

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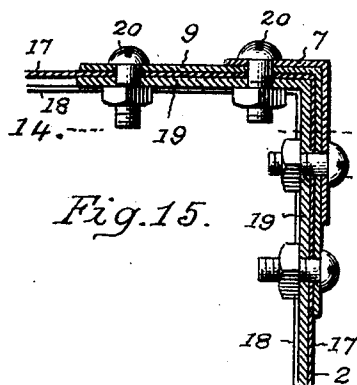


Fig. 15.

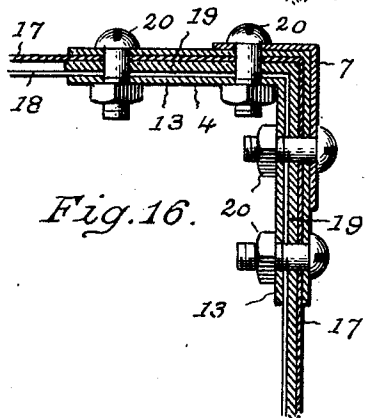


Fig. 16.

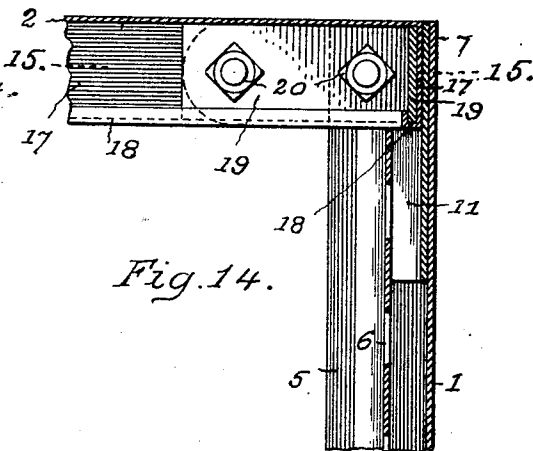


Fig. 14.

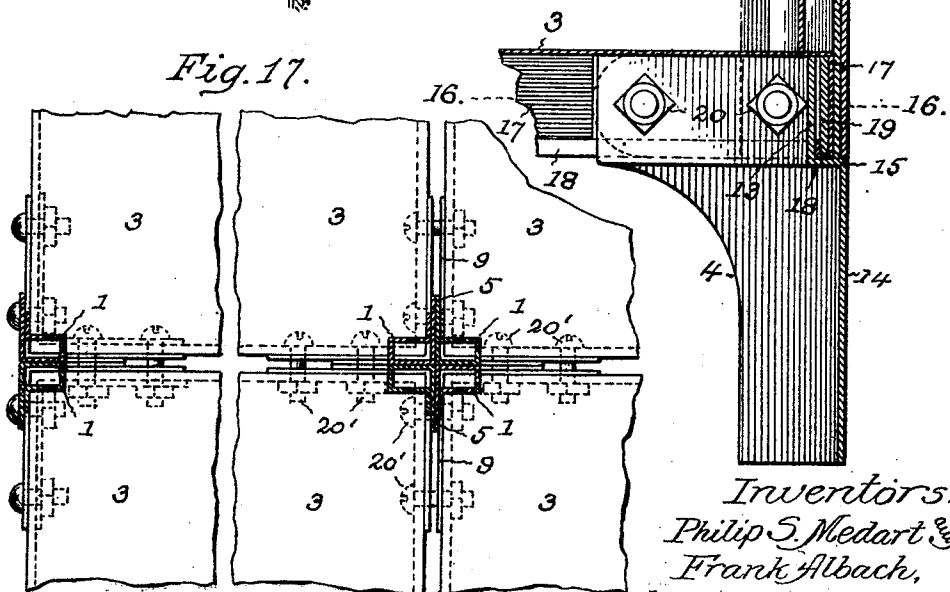


Fig. 17.

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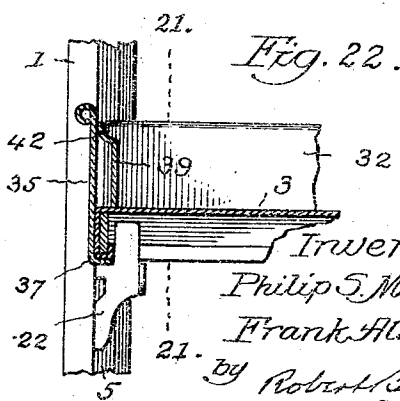
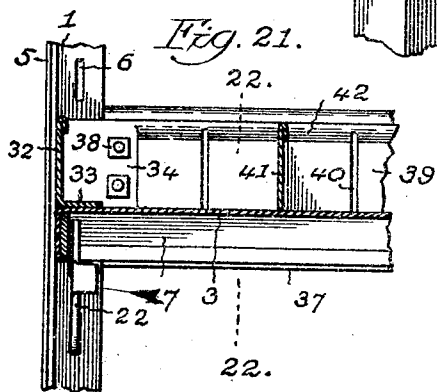
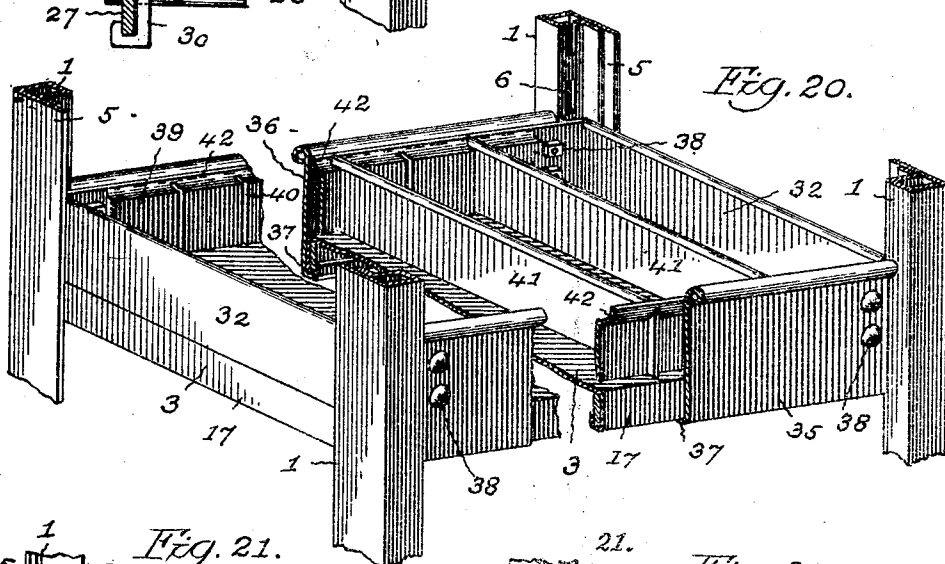
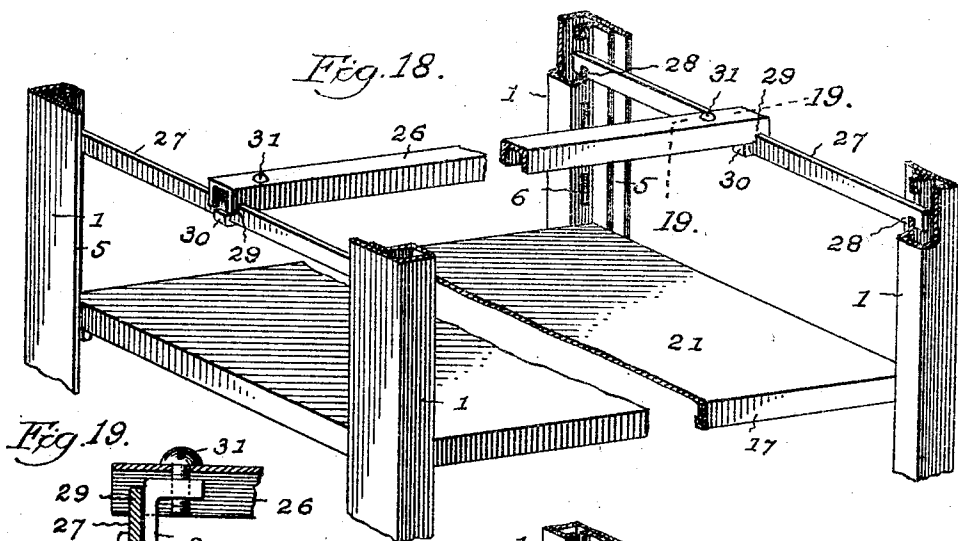
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1,577,066

METALLIC SHELVING

Filed Sept. 15, 1924

4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE.

PHILIP S. MEDART AND FRANK ALBACH, OF ST. LOUIS, MISSOURI, ASSIGNORS TO
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METALLIC SHELVING.

Application filed September 15, 1924. Serial No. 737,749.

To all whom it may concern:

Be it known that we, PHILIP S. MEDART and FRANK ALBACH, citizens of the United States of America, and residents of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Metallic Shelving, of which the following is a specification.

This invention relates to store and like shelving of the sectional metallic type, and has for its various objects:—

To provide a structural formation and combination of shelving parts, wherein a skeleton shelving unit comprising a series of corner posts, top and bottom shelves and series of supporting legs are detachably connected together in a ready and substantial manner, as a unitary structure adapted for ready combination with other similar units, and for the addition of supplementary shelves, bins, book stops and similar accessories, in accordance with the varying requirements arising from the different uses to which the shelving is applied, and with which with a minimum amount of material a maximum degree of strength and rigidity in the structure is attained.

To provide a simple and effective formation and combination of parts whereby intermediate shelves are connected and supported in a vertically adjustable manner in a skeleton shelving unit of the present type.

To provide a structural formation of the corner post of a shelving unit involving lightness, strength and adaptability for the attachment of intermediate shelves and other usual accessories.

To provide a structural formation and combination of bin parts for assemblage with a shelf of the present type of shelving units, to afford a series of cells or compartments capable of being varied in relation to each other in size or capacity to meet ordinary requirements in actual use.

To provide a simple and effective arrangement of parts wherein a stop rail for books and like articles is connected in adjustable manner in horizontal and vertical planes above an adjacent shelf, all as will herein-
after more fully appear.

In the accompanying drawings:—

Fig. 1, is a perspective view of a shelving unit formed in accordance with the present invention.

Fig. 2, is a detail perspective view of adjacent portions of a corner post, shelf and the adjustable bracket support between the parts.

Fig. 3, is a perspective view of the shelf supporting bracket in a detached condition.

Fig. 4, is a detail section on line 4—4, Fig. 5, showing the supporting bracket and associated parts of the shelving unit in assembled relation.

Fig. 5, is a horizontal section of same on line 5—5, Fig. 4.

Fig. 6, is a detail perspective view of a post member of a shelving unit.

Figs. 7 and 8, are similar views of the upper and lower clip member for said post member.

Fig. 9, is a similar view of a leg member of the shelving unit.

Fig. 10, is a detail perspective view of an upper corner portion of the shelving unit.

Fig. 11, is a similar view of a lower corner portion of said unit.

Fig. 12, is a detail sectional perspective view of a corner portion of the top shelf of the unit.

Fig. 13, is a similar view of the lower shelf of the unit.

Fig. 14, is an enlarged detail section of the shelving unit on line 14—14, Fig. 15.

Fig. 15, is a detail horizontal section on line 15—15, Fig. 14.

Fig. 16, is a similar view on line 16—16, Fig. 14.

Fig. 17, is a detail horizontal section illustrating the assembly of a series of shelving units in proper and fixed relation.

Fig. 18, is a detail perspective view of a stop rail for books, etc., and its connection with the shelving unit.

Fig. 19, is a detail section of same on line 19—19, Fig. 18.

Fig. 20, is a detail perspective view of the sectional bin structure of the invention.

Fig. 21, is a vertical section of the same on line 21—21, Fig. 22.

Fig. 22, is a similar view of same on line 22—22, Fig. 21.

Like reference numerals indicate like parts in the different views.

As illustrated in the drawings, the unit or series of units comprising a metallic store shelving of the required capacity, will each consist in a primary form of a series of four

corner posts 1, to which are bolted or otherwise fixedly secured top and bottom shelves 2 and 3, and a series of four similarly attached supporting legs 4, with said members having a structural formation as follows:

Each corner post 1 is formed of plate metal, a blank of which of the required size, is folded upon itself to form a tubular main body, rectangular in cross section, having lateral flanges or webs 5 which extend along the seam of said post body to afford a convenient means for rigidly connecting the post body parts together by spot welds or other usual attaching means. Said flanges or webs 5 also serve as positioning abutments for the ends of the respective shelves of the structure, while a series of elongated orifices 6 formed in vertically spaced relation in the aforesaid tubular post body and in a face of the same adjacent to flanges 5, are adapted to receive the hereinafter described adjustable supporting brackets for the intermediate shelves and other accessories of the shelving unit.

At the respective upper and lower ends of a post 1, the tubular body formation above described, is omitted for a distance corresponding with the height of a shelf, and at such ends the plate metal of the post has a right angle form with the respective webs 7, 7, formed with bolt holes or orifices 8, 3, for the passage of the hereinafter described fastening bolts.

In the present construction, reinforcing angle clips or gussets 9 are associated with the above described upper and lower end formations of the post, with the clips arranged on the inside of the post ends, with each angle flange of a clip having a greater length than that of the companion flange or web 7 of the post end and with the outer and overlapping portion of each of said clip flanges provided with a bolt hole 10, supplementary to a bolt hole 10' which has aligned relation to a bolt hole 8 of the post end, as illustrated in Figs. 7, 8, 10, 11, 15 and 16. In addition the clips or gussets 9 are formed with supplementary extensions or webs 11 of a right angle form which extend into the interior of the tubular post body and are fixedly attached therein by spot welds 12, or like attaching means, see Figs. 10 and 11.

The supporting feet 4 of the shelving unit are formed of plate metal and are attached to the lower ends of the posts 1. In the present construction each foot is of a right angle formation with respective upper and lower portions 13 and 14 offset with relation one to the other to provide a resting ledge 15 for the lower end of a post 1, with the inset upper portions 13 formed with bolt holes 16, complementary to the above described bolt holes of the post end and rein-

forcing clips and like bolt holes of the top and bottom shelves now to be described.

The top and bottom shelves 2 and 3 above referred to, are of a substantially counterpart formation and each shelf comprises a main plate metal shelf body the margins of which are downturned to provide reinforcing flanges 17, which in turn are rebent at their lower edges to provide upturned lips 18, forming holding channels for a reinforcing bar 19 of metal, preferably of the approximately U form shown, with the reinforcing bar 19 and flanges 17 formed with bolt holes complementary to the bolt holes of the post, clip and feet above described.

With the above described detail construction, the posts 1, top and bottom shelves 2, 3, clip 9 and feet 13, 14, are secured together by screw bolts 20, or like fastening means, passing through the series of bolt holes above described, as shown more particularly in Figs. 15 and 16, to constitute an individual shelving unit. Whereas series of such units are required to be secured together to provide increased capacity, the adjacent corners of the plurality of such units will be secured together bolts 20' passing through the heretofore described bolt holes at the respective top and bottom portions of the units as illustrated in Fig. 17.

The series of intermediate shelves 21 are preferably of the same detail construction as the top and bottom shelves 2 and 3, before described, except as to the provision of bolt holes, and such intermediate shelves are adjustably supported within a shelving unit by supporting means as follows:—

Supporting brackets 22 of plate metal are formed at one edge with hook shaped projections or prongs 23 in spaced relation corresponding with the spaced relation of the vertical rows of elongated orifices 6 in the posts 1, with such prongs adapted to enter a pair of said orifices 6, and have interlocking engagement with the lower end of said orifices, as illustrated more particularly in Figs. 4 and 22. At its upper end and in offset relation to the prongs 23, the supporting bracket is provided with an upstanding lug 24 adapted, when the bracket is in place, to provide a receiving recess between the lug and the adjacent side of the post 1 for the reception of and holding engagement with the downturned rein of a shelf as shown. In addition, the supporting bracket 22, at its edge opposite to the prongs 23, is provided with a flange 25 for convenient manual handling in an assembly or adjustment of the parts.

Another part of the present improvement embraces the combination with the posts 1 and the vertical series of orifices 6 therein, of a stop rail 26 for books, etc., arranged intermediate the width of and height between

the shelves, and extending the length of such shelves. In this a pair of bridge bars 27, having notches 28 near their respective ends have interlocking engagement in orifices 6 of opposed pairs of posts 1, to afford a supporting means for the stop rail 26 aforesaid, and which rail, in the present construction, is formed of structural metal of the channel shape, the opposed flanges of which are formed with notches 29 near the respective ends of the rail, for engagement with the upper edges of the bridge bars 27 and are secured thereon by Z shaped clips 30, and tightening bolts 31, as illustrated in Figs. 18 and 19.

Still another part of the present improvement embraces the combination with the sectional unit and a shelf thereof, of a sectional bin formation as follows:—

A pair of end walls 32 of plate metal, each formed with a rolled top edge, with a bottom flange 33 to rest upon the top surface of a shelf, and with orificed end flanges 34 for attachment to the front and rear walls of the bin structure with such walls formed as follows:—

The front and rear walls 35 and 36 above referred to, are formed of sections of plate metal, each section being formed with a rolled top edge, and with a lower return bend 37 so formed as to engage beneath the heretofore described downturned flange 17 of a shelf, and in addition each section is provided with bolt holes registering with the aforesaid bolt holes of the end walls or sections, for the passage of a series of attaching bolts 38, by which the series of wall sections are attached together and in assembled relation with a shelf of the structure.

To the opposed faces of the aforesaid front and rear walls 35, 36, a pair of positioning plates 39 are secured, each provided with a series of vertical slots or grooves 40 for the reception of a series of partition plates 41, by which the interior of the bin structure may be divided to provide a series of chambers of the desired size. In the present construction the positioning plates 39 are formed of plate metal, each having an offset flange 42 at top which is continuous the length of the plate, while the main body and the intermediate web connecting said body with the flange 42, are formed with the series of partition receiving slots 40, as shown in Figs. 20, 21 and 22.

Having thus fully described our invention, what we claim and desire to secure by Letters Patent, is:—

1. A post for shelving units formed of a plate metal blank bent into a tubular body portion, rectangular in cross section, provided with lateral contacting webs along the seam of the body portion, and with orificed right angle plate portions at one end

for fixed attachment to a shelf of the unit, each right angle plate portion having aligned relation to a web of the tubular body portion, and a clip member of a right angle plate metal formation fitting the interior of the post end and having an extension of like right angle formation extending into and secured in the interior of the body portion.

2. A post for shelving units formed of a plate metal blank bent into a tubular body portion, rectangular in cross section, provided with lateral contacting webs along the seam of the body portion, and with orificed right angle plate portions at one end for fixed attachment to a shelf of the unit, each right angle plate portion having aligned relation to a web of the tubular body portion, and a clip member of a right angle plate metal formation fitting the interior of the post end and having an extension of like right angle formation extending into and secured in the interior of the body portion, the respective flanges of the clip member extending beyond the angular end portions of the post and provided with bolt orifices in the extended portions.

3. A post for shelving units formed of a plate metal blank bent into a tubular body portion, rectangular in cross-section, provided with lateral contacting webs along the seam of the body portion, and with orificed right angle plate portions at one end for fixed attachment to a shelf of the unit, and a plate metal supporting leg of a right angle shape and comprising upper and lower portions in offset relation to provide a rest for the lower end of the post and its accessories.

4. A post for shelving units formed of a plate metal blank bent into a tubular body portion, rectangular in cross section provided with lateral contacting webs along the seam of the body portion, and with orificed right angle plate portions at one end for fixed attachment to a shelf of the unit, a clip member of a right angle plate metal formation fitting the interior of the post end and having an extension of like right angle formation extending into and secured in the interior of said body portion, and a plate metal supporting leg of a right angle shape and comprising upper and lower portions in offset relation to provide a rest for the lower ends of the aforesaid post and clip member.

5. A post for shelving units formed of a plate metal blank bent into a tubular body portion, rectangular in cross section, provided with lateral contacting webs along the seam of the body portion, and with orificed right angle plate portions at one end for fixed attachment to a shelf of the unit, a clip member of a right angle plate metal formation fitting the interior of the post end and having an extension of like right angle formation extending into and secured in the

interior of said body portion, and a plate metal supporting leg of a right angle shape and comprising upper and lower portions in offset relation to provide a rest for the lower ends of the aforesaid post and clip member, the respective flanges of the clip member extending beyond the angular end portions of the post and provided with bolt orifices in the extended portions.

6. In a shelving unit, the combination of a plurality of end posts, each formed with a tubular body portion provided with a vertical series of elongated orifices, a shelf having a downturned margin and means for adjustably attaching the shelf to the posts, the same comprising metal bracket member having a pair of hooks on one edge and an upstanding lug at another edge in offset relation to said hooks and adapted to engage the under margin of the shelf, said hooks having engagement with a pair of the vertical orifices in a post.

7. In a shelving unit, the combination of a plurality of end posts, each formed with a tubular body portion provided with a vertical series of elongated orifices, a shelf having a downturned margin and means for adjustably attaching the shelf to the posts, the same comprising a plate metal bracket member having a pair of hooks on one edge, a lateral lug on an edge opposite to the edge carrying said hooks, and an upstanding lug at another edge in offset relation to said hooks and adapted to engage the under margin of the shelf, said hooks having engagement with a pair of vertical orifices of the post.

8. In a shelving unit, the combination of a plurality of end posts, each formed of a plate metal blank bent into a tubular body portion, rectangular in cross section, and provided with lateral contacting webs along the seam of the body portion on a plane with the side thereof, a shelf, and means for adjustably attaching the shelf to the post, the same comprising a plate bracket member having a pair of hooks on one edge and an upstanding lug at another edge in offset relation to said hooks and adapted to engage the under margin of the shelf, said hooks having engagement with a pair of the vertical orifices of the post.

9. In a shelving unit, the combination of a plurality of end posts, each having a tubular body portion provided with a vertical

series of elongated orifices, a shelf secured in said posts, bridge bars having notches at their respective ends for engagement in opposed pairs of the post orifices, a stop rail formed with notches at its respective ends for engagement with said bridge bars, Z shaped clip members between the bridge bars and stop rail, and fastening bolts between the stop rail and the clip members.

10. In a shelving unit, the combination of a shelf, end bin sections of plate metal having bottom flanges bearing on the top surface of the shelf, front and rear bin sections of plate metal having inturned flanges at their lower ends for engagement beneath the shelf, the front, rear and end bin sections having overlapping flanges, and fastening means passing through said flanges to secure said sections in place, slotted positioning plates secured to the front and rear bin sections, and partition plates fitting the slots in the positioning plates.

11. In a shelving unit, the combination of a shelf, end bin sections of plate metal having bottom flanges bearing on the top surface of the shelf, front and rear bin sections of plate metal having inturned flanges at their lower ends for engagement beneath the shelf, the front, rear and end bin sections having overlapping flanges, and fastening means passing through said flanges to secure said sections in place, slotted positioning plates secured to the front and rear bin sections, and partition plates fitting the slots in the positioning plates, each of said positioning plates consisting of a plate of metal provided with an offset portion at its upper edge extending the length of the plate and with positioning slots formed wholly in the lower portion of the plate.

12. In a shelving unit, the combination of a shelf, end bin sections of plate metal having bottom flanges bearing on the top surface of the shelf, front and rear bin sections of plate metal having inturned flanges at their lower ends for engagement beneath the shelf, said sections having overlapping ends and means passing through the overlapping parts for securing the bin sections in place.

Signed at Saint Louis, Missouri, this 11th day of September, 1924.

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