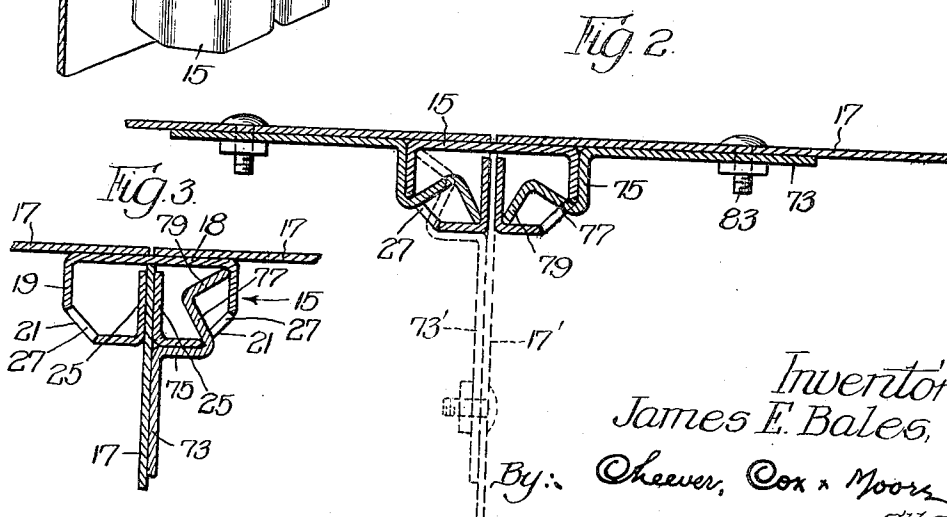
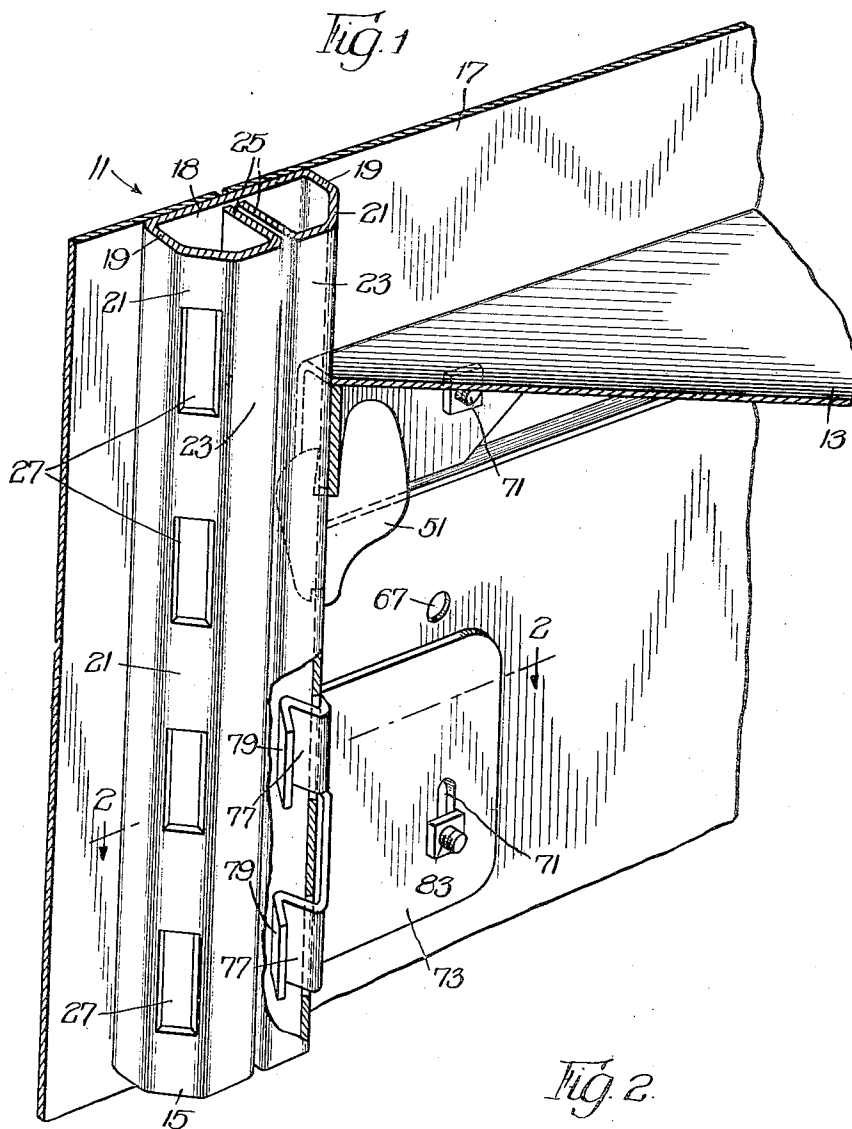


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J. E. BALES
SHELVING CONSTRUCTION
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SHELVING CONSTRUCTION

Application filed September 30, 1931. Serial No. 566,034.

My invention relates to shelving, particularly of the type constructed of sheet metal. In some forms of shelving, the shelves are supported upon uprights, and the structure is left open at the back, or at the ends, or both. Such open structures are usually termed "racks". In other cases, it is desirable to close the backs or the ends, or both, and this is done by employing sheets of metal, commonly called panels. Where a panel separates one unit of the shelving from another, it is frequently termed a partition. Sometimes the partitions are termed "back walls" or "end walls" as the case may be. The term "panel", therefore, denotes the use of these closure sheets in whatever situation they may be.

One object of my invention is to provide simple, rugged, and efficient means for holding the panels firmly in position, and particularly to hold them in close contact with the uprights.

Another object is to make it possible to assemble the elements in any one of a number of different positions, by means of the same clamping member. In other words, an object is to make it possible, by employing a single form of clamping member, to cause the panel to extend from the upright in any one of three directions, i. e., to the right, to the left, or forward.

In its most complete form, it is possible, by the employment of a single form of clamping member, to clamp three panels to the upright, one extending in one direction lengthwise of the shelving, another in the opposite direction, and one at right angles thereto.

A further object is to provide a construction such that the panel will make very close contact with the upright, thereby strengthening the structure and preventing rattling where used in industrial buildings or other places where the shelving is apt to be subjected to vibration.

I accomplish these objects in the manner illustrated in the accompanying drawing, in which:

Figure 1 is a fragmentary view of a por-

tion of shelving, showing the parts assembled;

Figure 2 is a plan section of the line 2—2 of Figure 1. In this particular assembly, there is shown the various positions in which the panel may be clamped to the upright; and

Figure 3 is a plan section similar to Figure 2 but showing all three panels uniting at a single upright.

Like numerals denote like parts throughout the several views.

Referring to the drawing:

There is an upright 15 which, in the form illustrated, is, in cross section, somewhat like the letter "B". It has a back 18, two end walls 19 at right angles thereto, two oblique section 21 integral with and extending obliquely from the end walls 19, and front sections 23 integral with the oblique sections 21 and lying parallel to the back 18. There are also two parallel flanges 25 integral with the sections 23 and extending at right angles to the back 18. They are spaced apart for accommodating between them the panels 17. Thus in the form illustrated the upright has a double tubular section. It has a back 18 and two convex portions, each including a more or less flat oblique section 21.

In each oblique section 21, there are slots 27 which, in the illustrated form, are arranged vertically. They are spaced at regular intervals and are capable of serving a dual purpose, one for holding the keys 51, which support the shelves 13, and the other for co-operating with the clamping members 73. The keys and the parts co-operating therewith form the subject of a separate application filed by me on or about the 1st day of August, 1931.

The panels 17 are simply metal sheets of proper gauge to form back walls, end walls, or partitions in the shelving. They have apertures 67 spaced vertically at intervals corresponding to the spacing of the slots 27. They accommodate bolts 83 which also penetrate slots 71 in the clamping plates 73. It is these clamping plates, with their co-operating elements, which embody the invention herein claimed.

The body of the plate is planiform and adapted to lie flatwise against the panels 17. Each plate has a flange 75 adapted to engage the end walls 19 of the uprights 15. This is shown in plan section in Fig. 2. The flanges 75 are slightly shorter than the vertical dimension of the slots 27 and, by preference, the body of the clamping plate is of sufficient height to carry two of these flanges 75. Hence the flanges, with their extensions, may be regarded as tongues extending from the body of the plate.

Integral with each flange 75 is a flange 77, which is bent obliquely so as to form a channel adapted to seat on the metal at the vertical edge of the slots 27. Thus the clamping members 73 may be regarded as fulcruming upon the upright at the edge of the slots. Each tongue has an additional flange 79 at the extremity which lies within the upright, as does the flange 77, and seats in one of the internal corners of the upright, as shown in Figure 2. The parts are so proportioned that when the body of the clamping member is bolted closely to the panel 17, the extremity of flange 79 will be firmly seated against the upright, and the channel between the sections 75 and 77 will press closely against the metal at the vertical edge of the slot 27, and the panel itself will be pressed closely against the upright. It will thus be seen that the member 73 is an actual clamping member by which the panel may be clamped to the upright and firmly pressed against it. This prevents rattling and at the same time adds stiffness to the structure.

The internal rectangular corners in the upright are symmetrical with respect to the slots 27, with the result that the clamping members may be placed on the upright in any one of four positions. Two positions are illustrated in full lines in Figure 2. Another is shown in dotted lines in this figure, the panels 17' being inserted between the parallel flanges 25. Thus it will be understood that the clamping member may be inserted in either one of two positions on either side of the median plane of the upright. It will also be understood that by placing clamping members at different elevations, they may occupy all of these various positions in a single upright without interfering with each other.

It will be observed that the clamping member hooks into the upright and yet does not extend through it as a whole. This avoids projecting ends, which are not only unsightly, but have a tendency to abrade the contents of the shelving. Viewed from the front, the upright presents a smooth surface, except for the slots formed therein. It will also be observed that so long as the clamping member remains fastened to the panel, there is no way that the elements can be taken apart, that is, no way that the panel can be removed from the upright. Furthermore, it will be

observed that the flanges on the clamping member interlock with the upright in such manner as to prevent shifting of the panel in any direction. Notwithstanding this, the clamping member may be removed and the panel be removed from the upright upon the removal of a single fastening device, such as the bolt 83.

From the foregoing, it will be evident that as a result of my invention, the user has a full choice as to the number and position of panels which he may employ, and this by the use of a single form of clamping member. The symmetry exhibited by the upright, and the shape of the clamping member relatively thereto, makes it possible to use a single form of plate and yet to place it in any one of four positions in the upright. Furthermore, as the clamping member fulcrums upon the upright and bears closely thereon, and is capable of drawing the panel closely against the upright, there is no danger of rattling, and the structure is held firm and rigid.

What I claim as new and desire to secure by Letters Patent is:

1. Shelving having a slotted, tubular upright, a panel adapted to abut an external surface of the upright, and a clamping member having a body adapted to be attached to the panel, said clamping member having a channeled flange forming a seat for the metal at one side of the slot in the upright.

2. In shelving, the combination with a shelf, of a slotted, tubular upright, a panel for forming a closure for the shelving, a member for clamping the panel to the upright, said clamping member having a body having a channeled portion fulcrumed upon the material at the vertical edge of a slot in the upright, a projection extending beyond the channeled portion of the clamping member, bearing against the internal surface of the upright, and means for drawing the body of the clamping member toward the panel for holding the parts closely together.

3. In a structure of the class described, the combination of a tubular, slotted upright, a panel, and a clamping member for fastening the parts together, the clamping member having a body having a tongue projecting therefrom, the tongue being channeled for seating upon the material at the edge of a slot in the upright, the tongue projecting through a slot into the interior of the upright and the outer edge of the tongue bearing against the internal surface of the upright, the panel bearing against an external surface of the upright, and the body of the clamping member being fastened to the panel for holding it in place.

4. Metallic shelving having a tubular upright having a slot therein, an approximately flat back, and a corner spaced from said back, a panel contacting the back of the upright, and a clamping member having a tongue

hooked into the upright through the slot therein, the extremity of the tongue abutting the inner surface of the upright at said corner therein, and means for fastening the body of the clamping member to the panel for holding it in place.

5. In a structure of the class described, the combination of a metallic upright bent to form a back, a first flange at right angles to the back, a second flange integral with the first, oblique to the back and having a plurality of slots arranged vertically therein, a third flange, integral with the second and approximately parallel to the back, and a fourth flange integral with the third and arranged at right angles to said back, panels adapted to contact either the back or the fourth flange of the upright on the the outer surface thereof, and a clamping member having a planiform body for attachment to the panels for holding them in place, said clamping member having a tongue for projecting into the upright through a slot therein, the extremity of the tongue bearing against the internal surface of one of the corners of the upright and having a channel seating upon the material at one side of the slot in the upright, two corners of the upright being symmetrical with respect to the material at the vertical edges of the slots, whereby the clamping member may be reversed to thereby hold the panel in contact with either the back or the fourth flange of the upright.

6. A knock-down sheet metal construction comprising an upright, a panel carried on said upright and a fitting for connecting the panel to the upright, said fitting and said upright having co-operating means for connecting the fitting to the upright in any de-

sired one of a plurality of points in the length thereof and said panel being formed at similarly spaced intervals with means for connecting the panel and said fitting together.

7. In combination, a tubular shelf member having a perforation, a panel lapping upon the surface of said tubular member at a point spaced from said perforation, and a clamping member having a tongue entering said perforation and resiliently engaging the inner surface of the upright, said clamping member having an intermediate portion formed to engage the tubular member when the bracket is positioned with the tongue in contact with the inner surface thereof whereby to stress the tongue and resiliently press it upon the inner surface of the tubular member, said clamping member having a remote portion extending to and engaging the panel whereby the resiliency of the part maintains the panel in a tight lapping engagement upon the tubular member.

8. The combination with an upright having a slot therein, diagonal angular surfaces and a panel adapted to be fastened to the upright, of a fastening member for fastening a panel to the upright and comprising a portion adapted to lie flush with a surface of the panel, a deformed portion on the member impinging the upright at a surface adjoining a slot, an extension on said member engaging an angular surface of the upright, and means for fastening the member to a panel, said member when fastened to a panel creating a tension on the panel, member and upright to hold the parts together.

In witness whereof, I have hereunto subscribed my name.

JAMES E. BALES.