

C. E. GERBERICH.
SHELVING.
APPLICATION FILED JAN. 22, 1917.

1,235,679.

Patented Aug. 7, 1917.
2 SHEETS—SHEET 1.

Fig. 1.

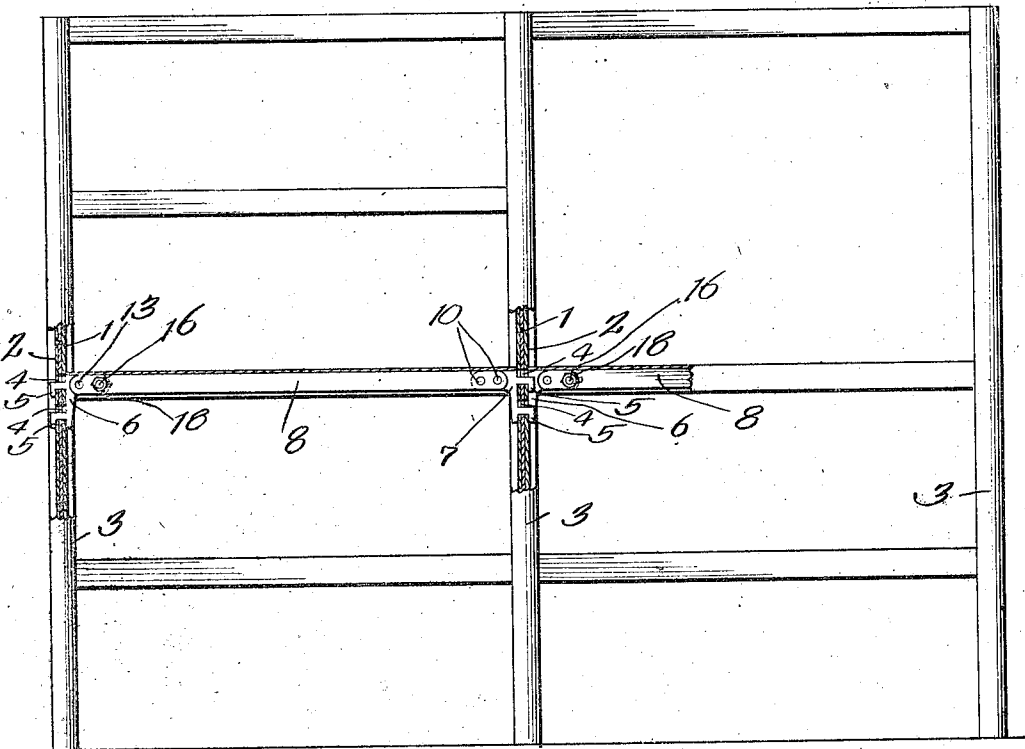
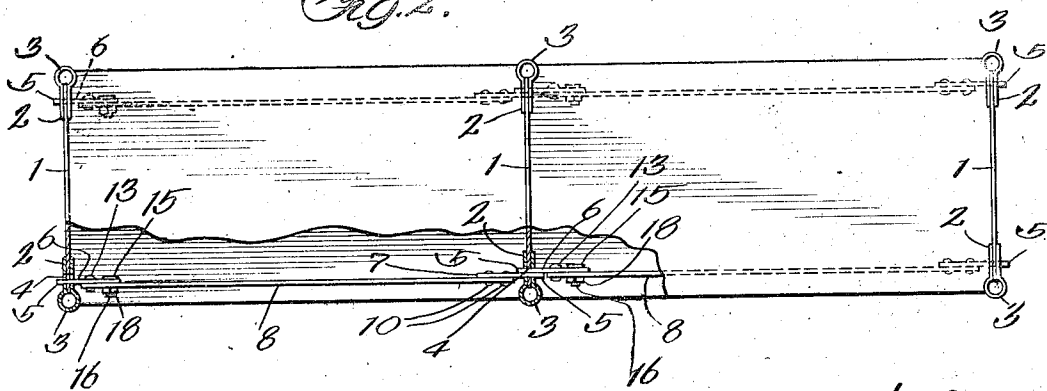


Fig. 2.

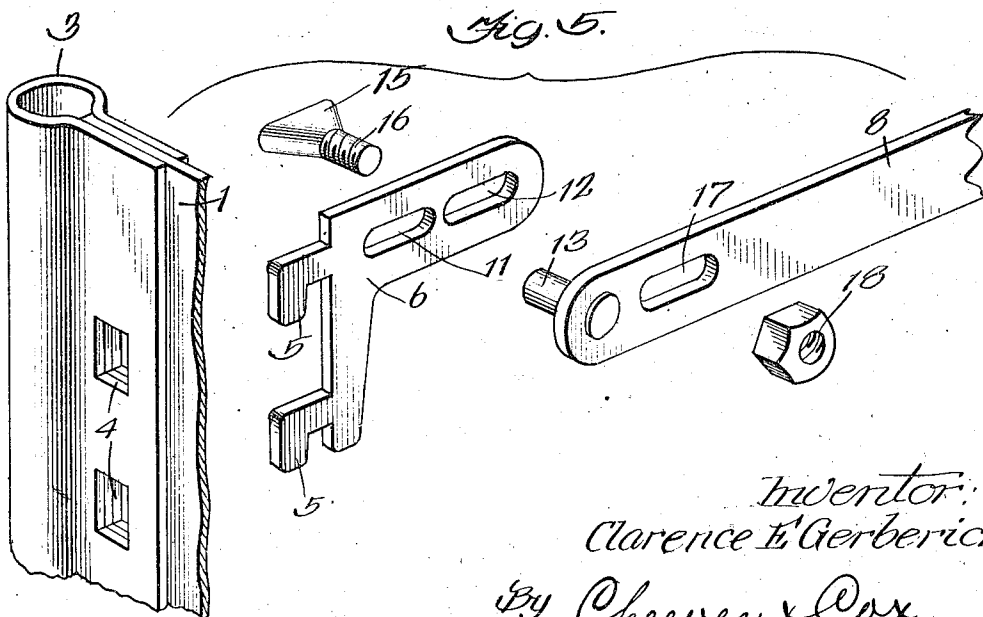
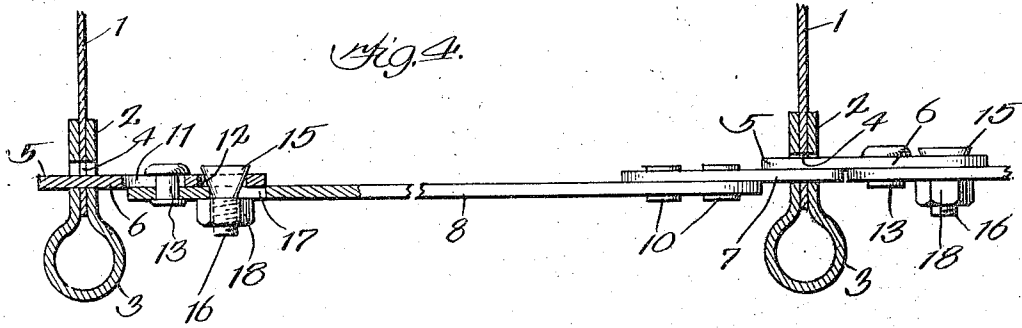
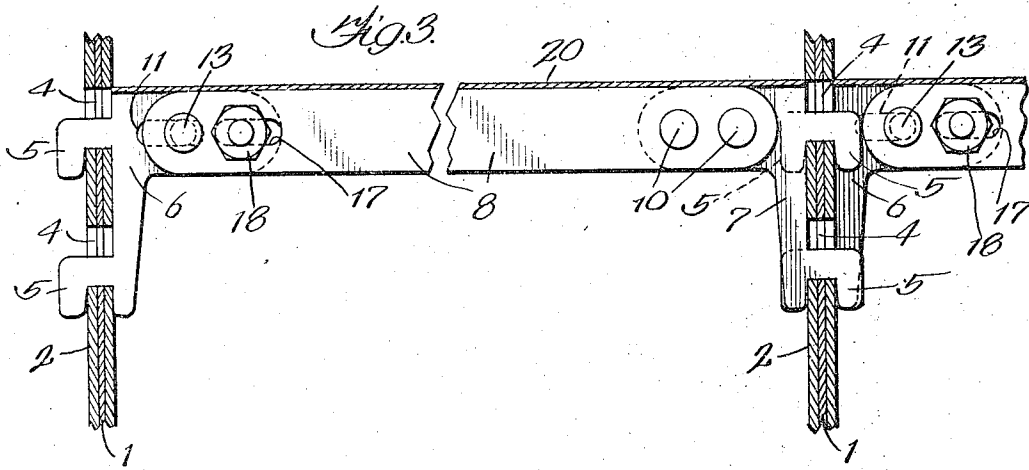


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UNITED STATES PATENT OFFICE.

CLARENCE E. GERBERICH, OF AURORA, ILLINOIS, ASSIGNOR TO LYON METALLIC MANUFACTURING COMPANY, OF AURORA, ILLINOIS, A CORPORATION OF ILLINOIS.

SHELVING.

1,235,679.

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To all whom it may concern:

Be it known that I, CLARENCE E. GERBERICH, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented a certain new and useful Improvement in Shelving, of which the following is a specification.

My invention relates to shelving of the sectional type, and an important object is to provide a simple and efficient construction by which a single shelf may be placed in or removed without disturbing the other shelves in the stack or section. Another object is to provide, in a structure having the above mentioned characteristic, means whereby a gusset effect may be produced, which will brace the shelving against racking or as it is frequently termed "weaving." Another object is to provide, in such a structure, means for putting the shelf under lengthwise compression thereby further bracing the structure and accomplishing, in a very simple manner, the securing of the shelf in place.

I accomplish my objects by the mechanism illustrated in the accompanying drawings, in which:

Figure 1 is a front elevation of two sections of shelving embodying my invention, portions being broken away to reveal the construction.

Fig. 2 is a plan view of the shelving with a portion of the shelves broken away.

Fig. 3 is a vertical sectional view taken near one of the tie rods to show the relative positions and constructions of the parts.

Fig. 4 is a plan view of the parts shown in Fig. 3, certain portions being taken in horizontal section.

Fig. 5 is a distributive view showing various constituent parts and suggesting the manner in which they are assembled.

Similar numerals refer to similar parts throughout the several views.

According to the construction selected to illustrate the invention, the uprights consist of partition plates 1 reinforced, back and front, by strips 2 having tubular portions 3 which come at the front and back of the structure. The uprights have slots 4 arranged at suitable intervals, one above the other, and these receive the hooks 5, 5 of the members 6 and 7, located at the ends of the tie rods 8. In the shape illustrated, these members 6 and 7 are in the form of angle

pieces each having a vertical and a horizontal arm. In the best form, the hooks 5 are beveled slightly on the inner side so as to tightly engage the uprights when seated thereon. The horizontal portion of the hooked member 7 is fastened to the rod by rivets 10 or other appropriate means. The horizontal portion of the hooked member 6, (see Fig. 5), has two horizontal slots 11, 12. The slot 11 receives the guide pin 13 rigidly fastened to the tie rod. Said pin is shown as having a head for preventing the tie rod from becoming separated from the hooked member. The slot 12 receives a cam or wedge shaped member 15 having a threaded shank 16 which passes through the horizontal slot 17 in the tie rod. A nut 18 screws on to a threaded shank 16 and the parts are so proportioned that when assembled, a tightening of the nut on the shank of the wedge will tend to draw the partitions toward each other.

The shelves 20 are of sheet metal extending from one partition to the other and overlying the tie rods. It is desirable that the four corners of the shelves be rounded out at the ends to accommodate and fit closely against the tubular portions 3 of the uprights. This prevents any movement of the shelf horizontally from front to rear or from rear to front.

In operation, the shelving is erected by placing two uprights parallel to each other and then dropping the hooked members 6 and 7 into place with the hooks 5 passing through the slots 4. Said slots are wide enough to receive two of these hooked members, side by side, one hooked member being for the tie rod on one side and the other for the tie rod on the other side, as will be clearly seen at the right end of Figs. 3 and 4. After the tie rods are applied, the shelves are placed over them when in position, the nuts 18 are tightened on the shanks 16, thus drawing in the wedges 15 and shortening up the respective lengths of the rods sufficiently to draw the uprights firmly against the ends of the shelves. This puts the tie rods under tension and the shelves under compression. The result is that the structure, as a whole, is tightly bound together and becomes very rigid, which is a most desirable feature in shelving.

According to my construction, in which the hooked members are in the form of angle

pieces, the structure is doubly rigid for these hooked members act as gussets or braces and prevent the structure as a whole from racking or "weaving". My construction has another advantage in addition to rigidity, for it makes it possible to remove a single shelf in a stack without disturbing any of the others. If it is desired to remove a single shelf, the nut 18 is taken off and the wedge 15 removed, thus permitting the hooked member 6 to slide inward along the tie rod. This releases the pressure of the partitions against the ends of the shelves sufficiently to permit one end of the shelf to be raised and then withdrawn from the stack. After it has been lifted off, the tie rods at the back and front may be lifted off, the hooked member 6 sliding longitudinally of the rod. By reversing the process, a shelf may be added at any point in the stack without disturbing the shelves already in place.

Another advantage in this construction lies in the fact that with the exception of the wedge 15 and nut 18, all parts of the tie rod are permanently fastened together and hence are not liable to become lost.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. Shelving having uprights, a shelf extending from one upright to the other, and a multi-part tie rod having one part engaging one upright and another engaging the other, and a threaded take-up device passing through said tie rod parts and located entirely beneath the top surface of the shelf and having a horizontal axis at right angles to the tie rod for drawing the uprights against the ends of the shelf.

2. In shelving, the combination of uprights, a shelf extending between them, a multi-part tie rod having two hooked members engaging the respective uprights, and a wedge shaped member engaging two parts of the tie rod for drawing the hooked members toward each other to thereby draw the uprights against the ends of the shelf.

3. In shelving, the combination of uprights, a shelf extending from one to the other, a multi-part tie rod having hooked members each engaging an upright at two remote points, one above the other, and means whereby said hooked members may be drawn toward each other and at the same time be prevented from changing their angular relationship to each other.

4. In shelving, a shelf, uprights at the ends thereof, said uprights having apertures beneath the shelf, two hooked members each engaging the respective uprights at two points vertically remote, and means for drawing said hooked members toward each other.

5. In shelving, a shelf, uprights at the ends of the shelf, said uprights having apertures beneath the shelf, two hooked members each passing into the respective uprights and engaging them at two points vertically remote, and means for drawing said hooked members toward each other.

6. In shelving, a shelf, uprights at the ends of the shelf, each upright having two apertures one above the other, two members each having two hooks passing into said apertures and engaging the upright at two points vertically remote, and means for drawing said hooked members toward each other.

7. In shelving, a shelf, uprights at the ends thereof, a tie rod attached to one of said uprights, a hook capable of engaging the other upright, a cam for drawing the hook along the rod toward the opposite upright and guiding means for preventing the hook from changing its angular relationship to the rod.

8. In combination, a shelf, uprights at the ends thereof, a tie rod fastened to one of said uprights, a brace attachable to the remaining upright at two different points, one above the other, said brace having an arm adjacent to said tie rod, means for guiding said arm lengthwise of said rod, and a cam for drawing said brace to tighten said tie rod.

9. In combination, a shelf, uprights at the ends thereof, a tie rod attached to one of said uprights, a brace hooking into the remaining upright, a slot and pin connection between said brace and tie rod, and a wedge for drawing up said brace along said tie rod.

10. In shelving, a shelf, uprights at the two ends of the shelf, a tie rod connected to one upright, the other upright being slotted, a multi-hooked element hooking into the slotted upright at two points, one above the other, and means movable bodily in a direction transverse to the tie rod for adjusting said hooked element lengthwise of said rod.

In witness whereof, I have hereunto subscribed my name.

CLARENCE E. GERBERICH.