W. K. WILLIAMS & A. VANDERVELD.

SHELVING.

APPLICATION FILED JAN. 8, 1915.

1,280,114.

Patented Sept. 24, 1918.

2 SHEETS—SHEET 1.

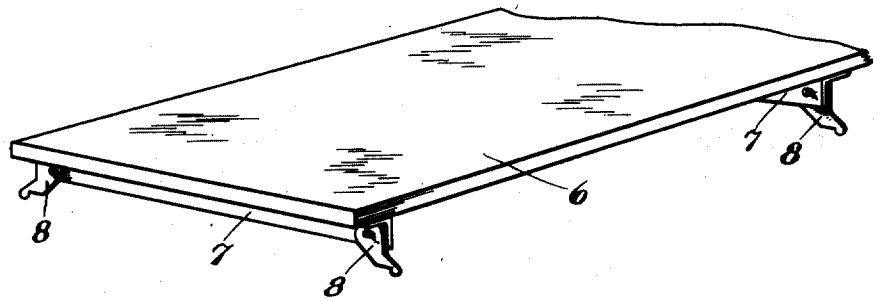

Fig. 1.

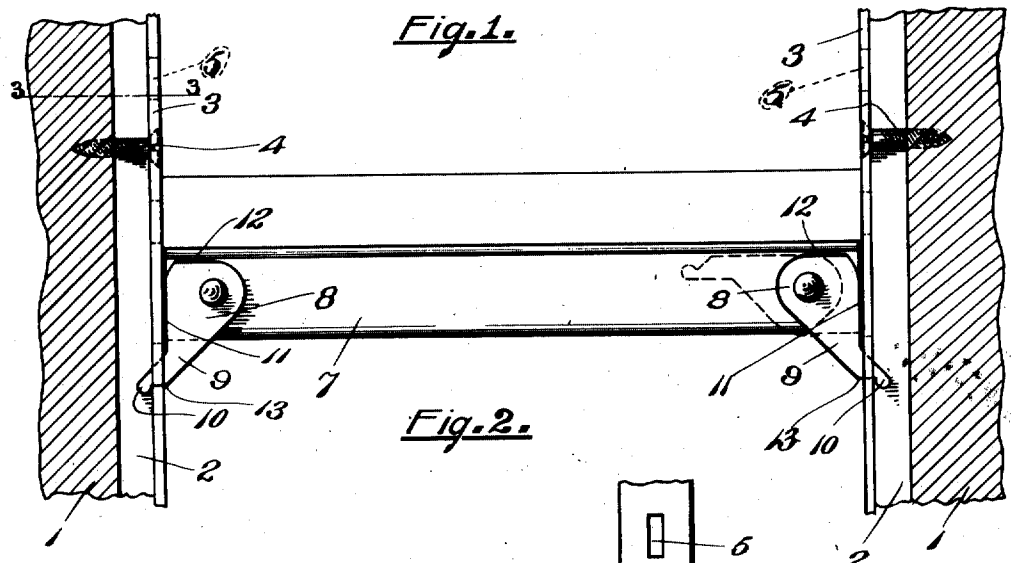

Fig. 2.

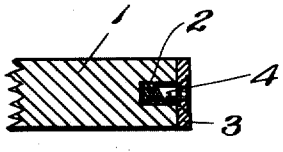

Fig. 3.

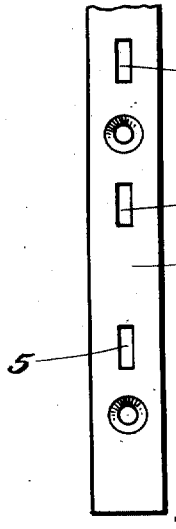

Fig. 4.

Witnesses

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2 SHEETS—SHEET 2.

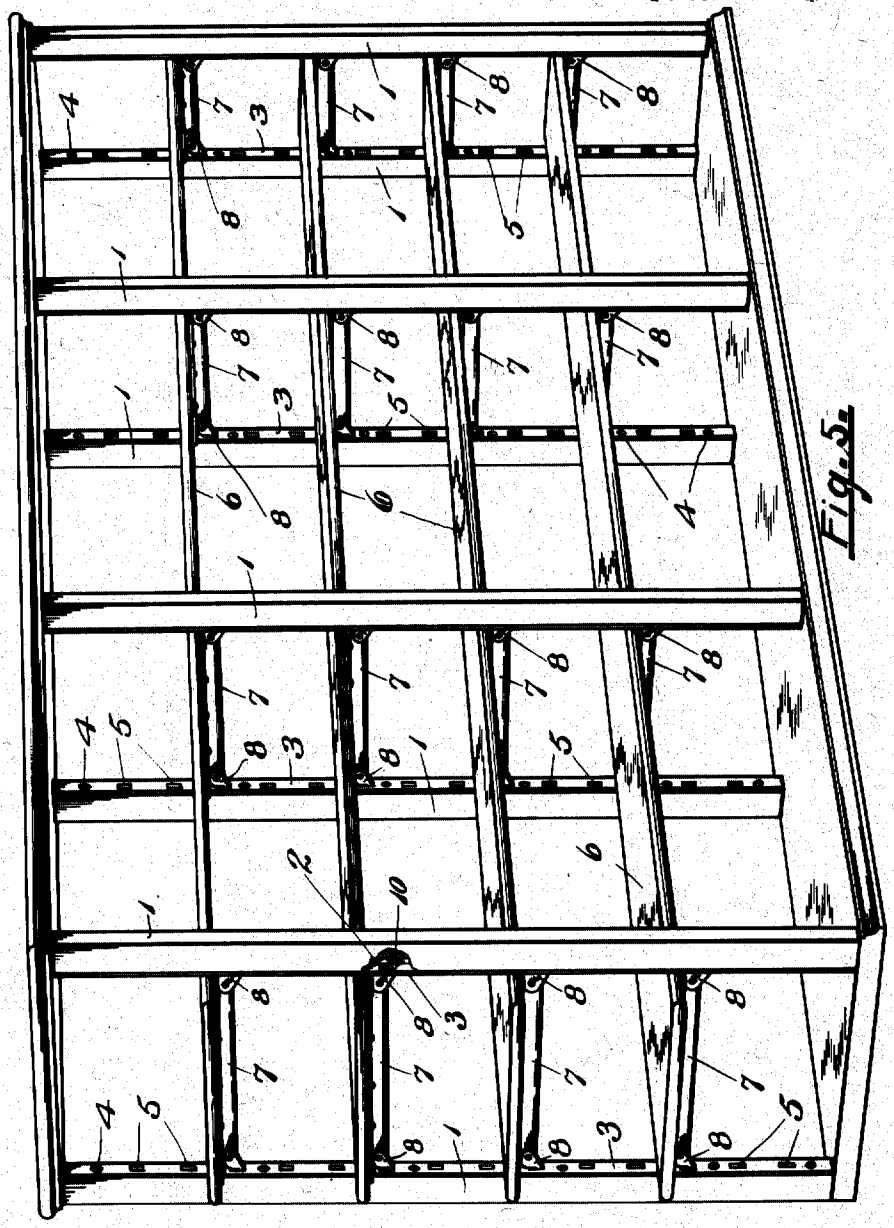

Fig. 5.

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UNITED STATES PATENT OFFICE.

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SHELVING.

1,280,114. Specification of Letters Patent. Patented Sept. 24, 1918.

Application filed January 8, 1915. Serial No. 1,144.

To all whom it may concern:

Be it known that we, WILLIAM K. WILLIAMS and ANTHONY VANDERVELD, citizens of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Shelving; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to shelving of the kind and type adjustable to various positions vertically with respect to fixed supports by which it is carried. It is the object and purpose of this invention primarily to provide shelving construction of this type which may be made of stock materials thereby reducing the cost of manufacture and which may be easily and readily adjusted to different positions in a very simple manner. It is a further object of this invention to provide construction in shelving which will serve to hold the shelf against warping, reinforcing and strengthening the shelf and holding it at all times in a rigid condition. The construction by which these ends are attained together with others not specifically enumerated but which will appear as the description progresses is shown in the accompanying drawings, in which,

Figure 1 is a perspective view of a portion of a shelf used in said shelving construction.

Fig. 2 is an end and partial sectional view of the shelving and the supports thereof.

Fig. 3 is a fragmentary sectional view taken substantially on the line 3—3 of Fig. 2.

Fig. 4 is a front elevation of a portion of the facing plates which are applied to the shelving supports; and

Fig. 5 is a perspective view of the shelving.

Like reference characters refer to like parts throughout the several views of the drawing.

The shelving is adapted to be supported by upright standards 1 which are spaced apart the width of the shelf, each standard being grooved on its inner face as indicated at 2, the grooved face of the standard being covered by a facing plate 3 attached by means of screws or other suitable connection to the said standards. Throughout the entire length of said facing plates a series of openings 5 are made spaced apart at short intervals. The openings in the opposed facing plates 3 carried by the spaced apart uprights 1 are positioned so that each opening in a facing plate is in substantially the same horizontal plane as the opening in the opposed plate carried by the opposite upright.

The shelving carried by said standards comprises a shelf 6 to which is secured at each end and if desired, at intervals throughout the length of the shelving, an angle iron member 7, one leg of which bears against the underside of the shelf while the other leg projects downwardly. At each end of said angle members an element 8 is pivotally attached to the vertical leg thereof as shown. Each of said elements is formed with a downwardly and outwardly extending section 9 terminating at its end in a lip 10 and in the operative position as shown in Fig. 2, each of said elements has a vertical edge 11 bearing against its associated facing plate 3 and an upper horizontal edge 12 which bears against the underside of the horizontal leg of the angle iron 7 to which it is attached. Furthermore the downwardly and outwardly extending portion 8 is fashioned to provide a substantially horizontal edge 13 which bears against the lower boundary edge of the opening 5 through which the lip 10 has been inserted in the application of the shelving to the uprights 1.

In the use of this invention, it is designed that the shelf 6 shall be of a width substantially equal to the distance between the uprights 1. The uprights will be spaced apart in pairs, one being at the front and one at the rear and will be positioned along the length of the shelving with a pair of uprights at each point of attachment of an angle iron to the underside of the shelf. The shelf is secured with the elements 8 thereof extending downwardly and with the portions 9 outwardly, the extreme ends thereof passing through openings 5 in the facing plates as best shown in Fig. 2. The horizontal edges 12 of said elements 8 prevent the pivotal movement of the elements beyond certain predetermined positions and irrespective of the weight that is supported by a shelf, said elements cannot be turned outwardly beyond said positions. If at any time it is desired to adjust the shelf to a different horizontal plane, all that is required is that the shelf be elevated a short distance whereupon the lips 10 will automatically

disconnect from the facing plates 3 whereupon the shelf may be carried to any desired horizontal position and the ends of the elements 8 inserted in the desired openings. This operation is very simple and can be accomplished very quickly and easily. The openings 5 are provided at very short intervals in the length of the facing plates 3 so that a large number of adjustments for any shelf may be had.

From the foregoing it will be clear that shelving of this construction can be very cheaply manufactured. The angle iron 7 is commercial form and may be readily cut to the desired length while the pivoted elements 8 and the facing plates 4 may be cut from metal plate stock as will be readily understood. The angle irons 7 attached transversely to the underside of the shelf hold it rigid and prevents any warping or other tendency of the shelf 6 to get out of shape. When the shelf is placed in position between the uprights it is practically impossible to disengage it except by an upward movement thereof against the force of gravity. Furthermore when it is desired to knock down the shelving or to ship it, the pivoted elements 8 may be turned to the dotted line positions as indicated in Fig. 2 whereby they will be entirely out of the way and not subject to breakage.

Various modifications in minor detail may be resorted to without departing from the invention. The appended claims define the invention and all modifications in structure falling within the scope of said claims are to be considered as comprehended within said invention.

We claim:

1. Shelving comprising vertical spaced apart supports having grooved faces, plates provided with a series of spaced apart openings covering said grooved faces, a shelf having secured to the underside thereof an angle member with one leg extending downwardly and elements pivotally attached one at each end of the angle member to the vertical leg thereof, said elements having extensions seating in opposite openings in the said plates, substantially as described.

2. Shelving comprising a plurality of pairs of spaced apart uprights, a plurality of shelves located between the pairs of uprights, angle iron transverse members, one for each pair of uprights secured to the undersides of said shelves, facing plates having openings therein secured to the inner faces of the uprights and elements pivotally attached, one at each end of the vertical leg of each transverse member and extending into opposed openings in the plates on said pairs of uprights, said elements turning inwardly under the shelf when not in operative position.

3. In combination, a shelf, transverse members having depending legs secured on the under side of the shelf, a member pivotally secured at each end of each of said depending legs, said member being formed from flat metal and having an upper side adapted to lie horizontal and parallel to the under side of the shelf, an outer side at right angles thereto, an inclined inner side, an extension to the outer side substantially parallel to said inner side, and a horizontal short under side, said member terminating in a rounded lip, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

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ANTHONY VANDERVELD.

Witnesses:
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Frank E. Liverance, Jr.