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SHELVING ASSEMBLY

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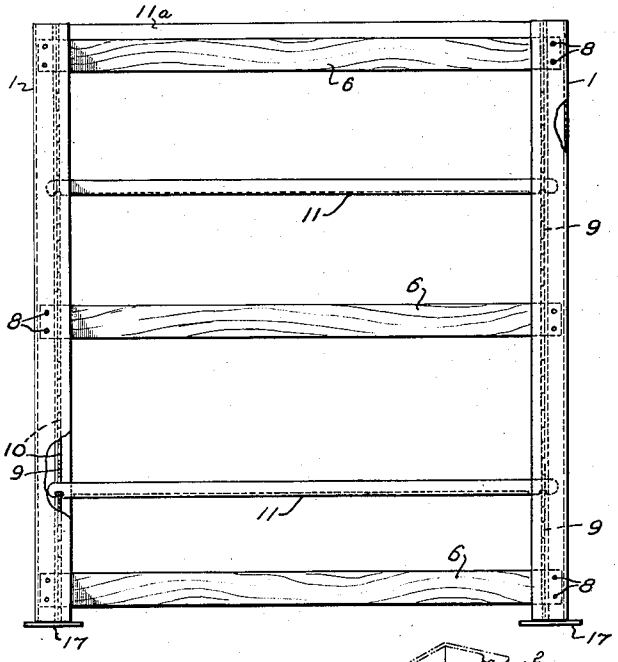


Fig. 1.

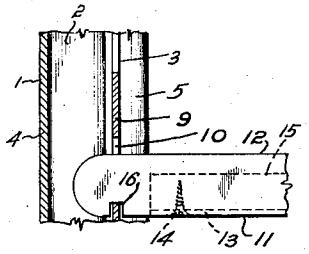


Fig. 3.

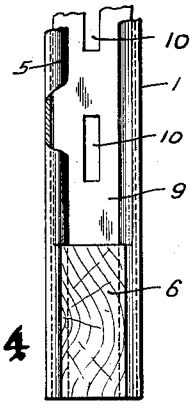


Fig. 4

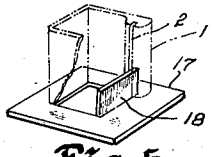


Fig. 5.

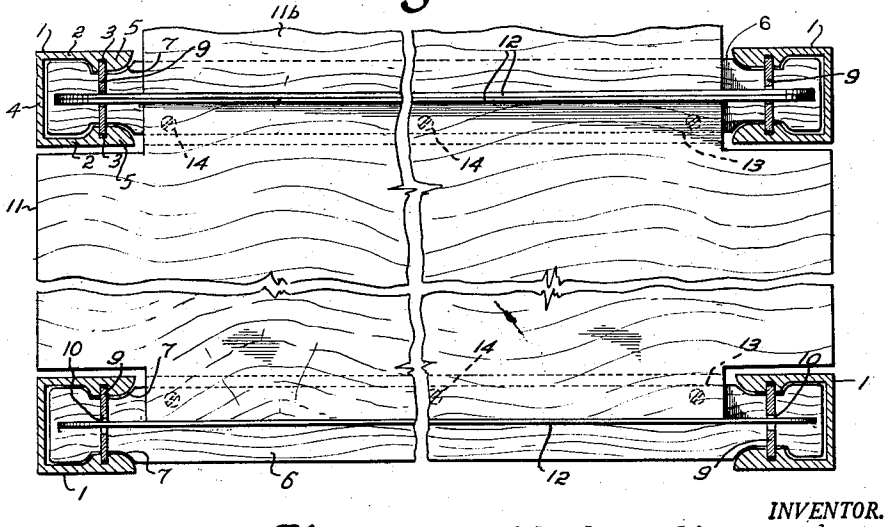


Fig. 2.

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SHELVING ASSEMBLY

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5 Claims. (Cl. 211—147)

This invention relates to shelving of readily erectable and demountable type.

An object of the invention is to provide shelving units which are capable of inexpensive and convenient manufacture, which are erectable with a minimum of tools and auxiliary fastening means, which are extremely rigid in use, and which are capable of convenient dismantling and re-assembly as required.

The invention will be described with reference to the accompanying drawing in which,

Figure 1 is a side elevation of a shelving stack in accordance with the invention,

Figure 2 is an enlarged plan view of the shelving stack, partly in section,

Figure 3 is a sectional side elevation of the shelf supporting assembly,

Figure 4 is a sectional end elevation of the shelf supporting assembly, and

Figure 5 is a perspective view of a foot member for use with the shelving stack.

Referring to the drawing, the shelving comprises at least four corner posts **1**, each of identical form. The posts may be formed of any suitable material, such as wood, plastic composition, or metal. Preferably, they are of extruded lightweight metal, such as aluminum. It will be apparent that they may be manufactured in any convenient length, and cut to desired length, as required.

Each post **1** is of channel cross section and each side wall **2** is provided with an internal groove **3**, extending longitudinally throughout its length, the groove in one side wall being in opposite relation to the groove in the other side wall. The grooves **3** are closely adjacent the open mouth of the channel and in widely spaced relation to the web **4** of the channel. Preferably, each side wall **2** is internally thickened at **5** in the area of the groove.

Each pair of front and rear posts **1** are connected together by means of a plurality of cross members **6** of any desired length, which may be formed of wood, metal or the like. The end portions of each member **6** are arranged to be received by the channels of the respective pair of posts and, as shown, each end portion is oppositely grooved at **7** to receive the thickened side wall portions **5** of the post and to prevent lateral displacement therefrom. Thus, the end portions of the members **6** may be slidingly and longitudinally moved along the respective pair of channels to desired location therein.

In proceeding with erection of the shelving, one such member **6** is located at the bottom ends of each pair of front and rear posts, as shown in Figure 1, and fastened to the posts against longitudinal displacement therein by means of cross pins **8** extending through the side walls **2** and the member **6**.

A strip **9**, preferably of metal, is now inserted in the pair of grooves **2** of each post **1**, each strip **9** slidingly moving through the grooves until its lower end comes to rest in engagement with the bottom cross member **6**, as shown in Figure 4. Each strip **9** is provided with a plurality of spaced (preferably uniformly) apertures **10**. Each aperture **10** is of generally rectangular shape, being elongated in the longitudinal direction of the strip **9**.

Intermediate cross members **6** may now be inserted in the channels of the respective pair of posts, such intermediate members **6** resting upon the upper ends of the inserted strips **9**, and being fastened in place by cross pins **8**, as before. Additional strips **9** of desired length are now applied to the shelving stack in the manner described, and finally top cross members **6** are applied to the stack. It will be apparent that any desired number of intermediate cross-members **6** may be employed.

Any desired number of shelves **11** may be employed in the stack and, as shown, each shelf comprises a pair of bars **12**, preferably of metal and each having a right angular flange **13** on one longitudinal edge thereof, such flange **13** terminating inwardly of each end of bar **12**. Each pair of flanges **13** have mounted thereon, as by means of screws **14** or the like, a shelf member proper **15**. The lower surface of each projecting end of each bar **12** is provided with a recess **16** constituting a hook. It will be observed that the projecting ends of bars **12** of each shelf are arranged to be passed through any desired respective set of four apertures **10** in strips **9** in the shelving stack as described, and hooked therein as clearly shown in Figures 2 and 3. The end edges of bars **12** are rounded, as shown, to facilitate entry thereof into the apertures **10**.

Preferably, a foot member **17** is provided for each corner post, as shown in Figures 1 and 5. Such member **17** comprises simply a flat metal plate having a lug **18** struck out of the body thereof to provide an upstanding lug arranged to enter the lower ends of the pair of grooves **3** in each post. As shown in Figure 1, the lower end of each post rests upon the body portion of member **17** and the bottom cross member **6** may rest upon the upper edges of the respective pair of lugs **18**.

Preferably also, the top cross members **6** are slightly spaced below the upper ends of posts **1** to provide space to receive a top closure **11***a*, which may be one of the shelf members **11**.

An important feature of the present invention resides in the fact that one or more additional shelving units may be added to the initial four post stack as desired, merely by providing one additional pair of posts for each such unit. As clearly shown in Figure 2, an additional shelf member **11***b* may have one of supporting bars **12** applied to the same pair of apertures **10** in strips **9** of the initial unit, each such aperture **10** being of sufficient width to receive two of the projecting ends of bars **12**. The other bar **12** of the shelf member **11***b* is supported in the apertured strips **9** of an additional pair of posts **1**.

It will be apparent that the shelving stack, as described, may be erected with a minimum of effort and expense. The strips **9** require no specific fastening means and since they derive substantial support from the channel posts **1**, they may be of very light structure while providing rigid support for the shelves.

We claim:

1. A shelving stack comprising at least four substantially identical upright metal corner posts, each post being of channel cross section and having side walls, each said side wall having an internal groove therein extending from end to end thereof, the groove of one side wall being opposite to the groove of the other side wall, a plurality of substantially identical cross members each having end portions disposed between the side walls of separate pairs of said posts and fixed thereto to connect each said pair of posts together, said posts being otherwise free of fixed connecting means, a plurality of metal strips each having a plurality of longitudinally spaced apertures therein and edge portions disposed in

said grooves of the side walls of one of said posts, each end of each said strip being in substantial abutment with one of said cross members, and a plurality of shelves each comprising a pair of metal bars having a shelf member carried thereby, each said bar having a recessed portion at each end thereof projecting beyond said shelf member, each said recessed portion being in supporting engagement with a respective one of said strips through one of said apertures, said shelves constituting the sole means connecting together said separate pairs of posts.

2. A shelving stack as defined in claim 1, one of said cross members of each separate pair of said posts being in adjacent spaced relation to the lower ends of said posts, and a plurality of unitary metal foot members each having a plate engaging the lower end of one of said posts and an upright lug struck out from said plate and disposed in the pair of grooves of said one post.

3. A shelving stack as defined in claim 1, one of said cross members of each separate pair of said posts being in adjacent spaced relation to the upper ends of said posts, and a top closure member freely seated on said last-mentioned cross members.

4. A shelving stack comprising at least four substantially identical upright metal corner posts, each post being of channel cross section and having side walls, each said side wall having an internal groove therein extending from end to end thereof, the groove of one side wall being opposite to the groove of the other side wall, a plurality of substantially identical cross members each having end portions disposed between the side walls of separate pairs of said posts and fixed thereto to connect each said pair of posts together, said posts being otherwise free of fixed connecting means, a plurality of metal strips each having a plurality of longitudinally spaced

apertures therein and edge portions disposed in said grooves of the side walls of one of said posts, each end of each said strip being in substantial abutment with one of said cross members, and a plurality of shelves each comprising a pair of metal bars having a shelf member carried thereby, each said bar having a vertical flange and a horizontal flange, said shelf member being fixed to said horizontal flange, said vertical flange having end portions projecting beyond said shelf member, each said projecting end portion having a recess therein receiving an edge of one of said apertures to support said shelves on said strips, said shelves constituting the sole means connecting together said separate pairs of posts.

5. A shelving stack as defined in claim 4, at least two of said shelves being disposed in substantially the same horizontal plane, one of the vertical flanges of one of said last mentioned shelves being in substantial abutment with one of the vertical flanges of the other of said last-mentioned shelves, each pair of abutting projecting end portions of said vertical flanges being disposed in the same aperture of said strip.

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