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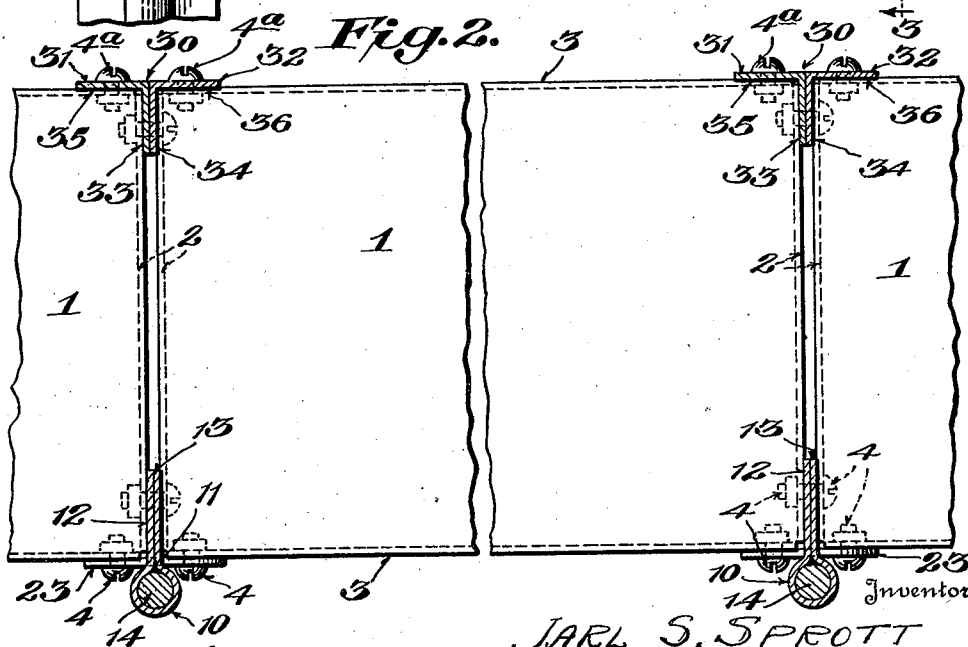
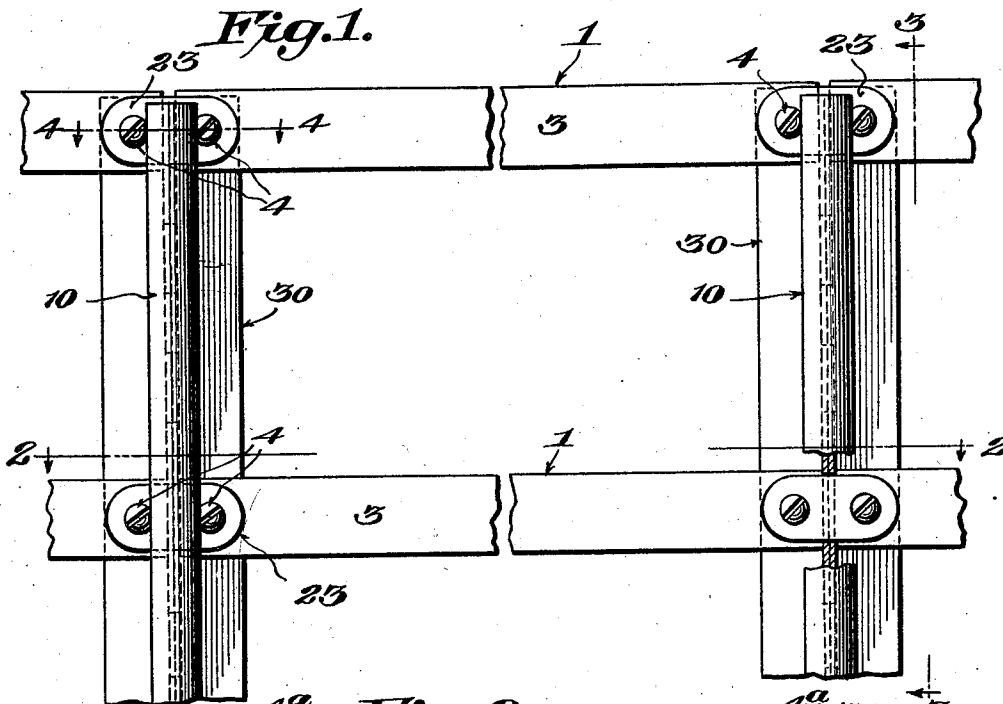
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J. S. SPROTT

SHELVING CONSTRUCTION

Filed April 2, 1926

2 Sheets-Sheet 1



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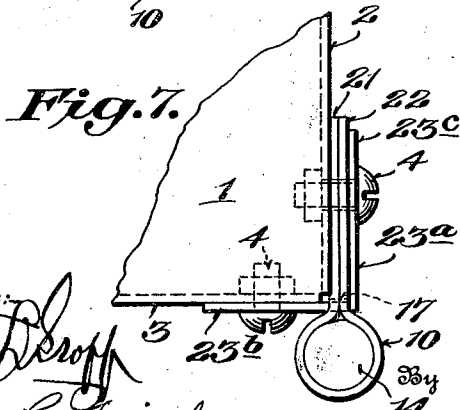
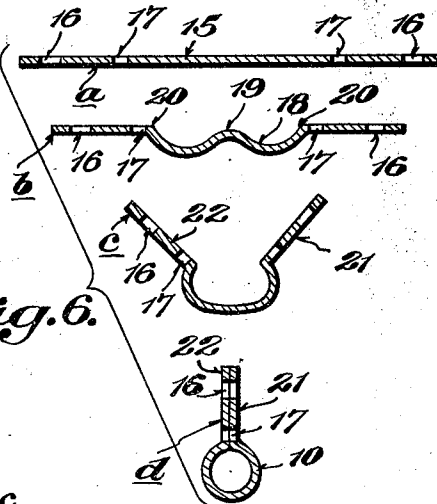
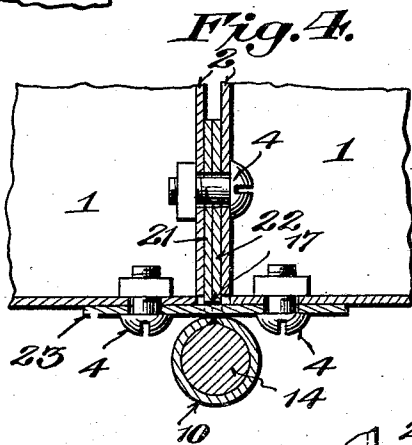
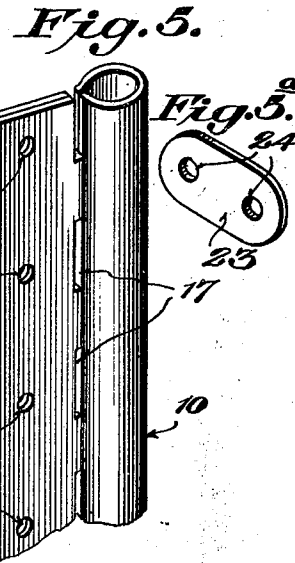
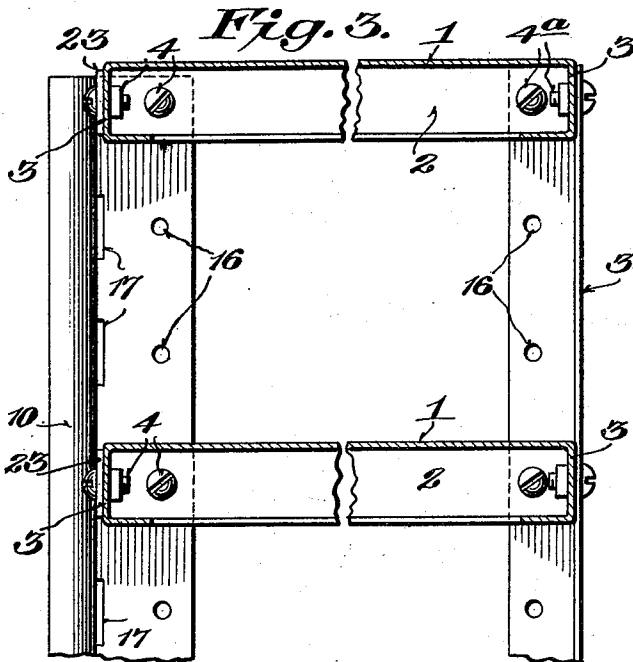
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J. S. SPROTT
SHELVING CONSTRUCTION

Filed April 2, 1926

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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SHELVING CONSTRUCTION.

Application filed April 2, 1926. Serial No. 99,386.

This invention relates to metal shelving and more particularly to supporting means therefor.

One of the primary objects of the invention is to so form a shelf structure that the available length, that is, readily accessible storage surface will be increased in a given distance from center to center of the posts without increasing the actual length of the shelf itself, thereby affording increased shelf capacity. In shelving heretofore generally in use the front supports for the shelves were made from two angle irons arranged side-by-side to form a post for use between two sets of shelves and this arrangement reduced the size of the front opening to the shelving so that in stacking boxes on the shelves a space was necessarily left at the end of each shelf. This invention is designed to overcome this objectionable waste and provides a maximum clearance at the front of the shelf to permit the shelves to be completely filled.

Another object is to provide a shelving wherein the posts or supports are of novel formation and constructed to avoid sharp angles or edges, thereby not only enhancing the ornamental appearance of the structure but also providing a post constructed so that the paint is not liable to chip off.

A further object is to so support the shelving at the front that one shelf balances the adjacent shelf, a single element being employed to connect two shelves.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 represents a front elevation of the shelving constructed in accordance with this invention with parts broken out and in section.

Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1.

Fig. 3 is a vertical section taken on the line 3—3 of Fig. 1.

Fig. 4 is a detail horizontal section taken on the line 4—4 of Fig. 1.

Fig. 5 is a perspective view of a portion

of one of the posts constituting a part of the invention.

Fig. 5^a is a similar view of one of the clips used in connection with the posts shown in Fig. 5.

Fig. 6 represents longitudinal sections showing the successive steps in the manufacture of one of the posts.

Fig. 7 is a detail plan view of one corner of the shelving.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

As previously indicated, a distinctive feature of the present invention resides in the provision of a shelving construction wherein the full length of the shelving may be available for storage space. To that end the present invention contemplates the construction of novel supporting members, particularly for the front edges of the shelving, which permit of maximum accessibility to the shelf surface, thereby permitting the full use of the shelving area from one partition to the other or from the end of one shelf to the end of the other. For example, in the installation of shelves for the packing of shoe-boxes the present construction has made it possible to add an extra box to each shelf thereby effectively increasing the storage capacity of the shelves.

In attaining the foregoing object the present invention contemplates the use of a shelf supporting element having not only the advantages above pointed out over the angle-iron type of support, but also provides a support of greater stiffness and strength, while at the same time offering no sharp edges or obstructions to interfere with the sliding in and out of boxes or the like stored on the shelves.

In its general organization the invention contemplates a shelving support including a front member or upright which includes two thicknesses of metal formed as wing members projecting radially from a tubular reinforcing part which stiffens the member and enhances the ornamental appearance thereof, together with a shelf supporting and connecting clip which is disposed horizontally and lies within the plane of the front edges of the shelves, thereby offering no obstructions or hinderance above and below the surface of the shelf to the storage of articles between the shelves.

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Referring to the details shown in the accompanying drawings, it will be observed that the invention contemplates the provision of a shelving structure which includes shelves 1 preferably constructed of metal and having sides and end flanges 2 and 3 apertured adjacent the corners thereof to receive the securing bolts 4 which connect the shelves with their supporting posts and with each other. These shelves 1 are supported by front posts 10 and rear posts 30, said shelves being arranged end to end in alinement and bolted to the posts and to each other as is shown clearly in Fig. 2.

The posts 10 are made in the form of sheet metal hollow tubes with a longitudinal seam 11 bordered by two contacting flanges 12 and 13, said contacting flanges being arranged in parallelism and provided with registering bolt-holes to receive the bolts 4 which not only secure the flanges together but connect them with the flanges 2 of the shelves 1. The tubular body portion of the posts 10 may be reinforced by a wooden rod 14 encased within the posts as is shown clearly in Figs. 2 and 4. These posts 10 are made from metal sheets 15 shown at the top of Fig. 6 and are provided adjacent the side edges thereof with a plurality of longitudinally spaced apertures 16 and at points spaced inwardly from said apertures with elongated slots 17. The punching of the slots and bolt-holes in the blank 15 constitutes the main step of making the posts. The sheet is then grooved longitudinally as shown at 18 using the slots 17 as points of registration to insure that the slots and holes 16 coincide on the completion of the posts, as is shown in Fig. 6 at the bottom thereof. The next step is to partially remove the crown 19 from between the grooves 18 and to bend the grooved portions into the position shown at C in Fig. 6. The next step in the manufacture of the posts provides in closing the two flanges 21 and 22 so that they contact throughout their length as shown in Figs. 5 and 6 with their slots 17 and apertures 16 registering.

The clips 23 shown in detail in Fig. 5^a are designed to be introduced in the slots 17 of the posts 10 and bolts to the flanges 2 and 3 of the shelves 1. These shelving ties or clips 23 as shown clearly in Figs. 1, 2 and 4 span the space between two adjacent shelves 1 and have the ends thereof bolted to said shelves so that at the front end of the shelving one shelf balances the adjacent shelf, clip 23 operating as a support for the two shelves and providing in effect a continuous front flange for adjacent shelves. These clip or tie connected shelves 1 are also further connected by means of the bolts 4 passing through the end flanges 2 of the shelves and through the flanges 21 and 22 of the posts as is shown clearly in Fig. 4.

The purpose of the ties or clips 23 is to

connect the shelves so that the load on adjacent shelves will be balanced by transmitting some of the load on one shelf to the next, thereby relieving the front posts of part of the load. These front posts have only the bead 10 to act as a stiffener in order to get as much front clearance as possible while the rear supporting members are angle irons and have inherent stiffness but are not desirable for use at the front because they have the disadvantage of taking up too much access space to the shelf. By passing the ties or clips 23 through the posts and connecting adjoining shelves independently of the posts it will be apparent that additional strength is provided.

At the last post of a line of shelving as shown in Fig. 7 a right angular clip 23^a is shown one leg 23^b of which extends through the slot 17 of post 10 and is bolted to the end flange 3 of the shelf 1. The other leg 23^b overlies the flanged portion of the post 10 and is bolted to said post portion and to the flange 2 of shelf 1.

The rear posts 30 are of the usual construction and composed of two angle bars 31 and 32 with their flanges 33 and 34 contacting and located between the ends of the shelves 1 and bolted to the flanges 3 thereof. The flanges 35 and 36 of these bars aline with each other and are arranged outside the flanges 3 at the ends of the shelves and are bolted to said flanges by the bolts 4^a.

It will be observed by an inspection of Fig. 2 that the front posts 10 are considerably narrower than the rear posts so that the distance between posts 10 is considerably greater than that between posts 30 thereby increasing the size of the front opening to the shelving. The flanges 21 and 22 of the front posts 10 may be of any desired width to render the posts sufficiently strong to support the required weight.

From the foregoing it will be seen that the front posts 10 and their construction constitute one of the important and distinctive features of the invention one post serving to support two sets of shelving and yet provide maximum clearance between the posts.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention and scope of the appended claims.

I claim:

1. A shelving construction including the shelves, front and rear supporting members for said shelves, means for securing the ends of adjacent shelves to said front and rear supporting members, and means for connecting the front edges of adjacent shelf members,

said means passing through the front supporting members and connecting the shelves independently of the said supporting members.

5 2. A shelving construction including the shelf, side forming flanges depending from the body of each shelf, front and rear shelf supporting members, said members each including a portion adapted to be disposed between the adjacent end flanges of adjoining
10 shelves in the same plane, and the front supporting members having slots, fastenings for connecting the flanges with the front and rear shelf supporting members, and a shelf tie
15 passing through said slots for connecting the front exposed edges of said shelving independently of said front supporting members.

3. A shelving construction including front and rear shelf supporting members, shelves
20 lying in the same horizontal plane and connected to opposite sides of said front and rear shelf supporting members, and means for connecting said shelves independently of

either of said supporting members thereby to tie adjoining shelves in balanced load sustaining relation. 25

4. A shelving construction including front and rear shelf supporting members, said front shelf supporting member comprising a member doubled upon itself to provide a
30 relatively small stiffening bead and a shelf supporting portion, and said rear shelf supporting member comprising angle members arranged with two of their flanges in meeting
35 relation and adapted to lie between adjacent shelves, flanged shelves arranged between said front and rear supporting members, fastenings for securing the flanges of said shelves to said front and rear shelf supporting members, and shelf ties connected to adjoining
40 shelves to unite the same independently of the shelf supporting members.

In testimony whereof I hereunto affix my signature.

JARL S. SPOTT.