

E. ALLEN.  
ADJUSTABLE SHELVING.  
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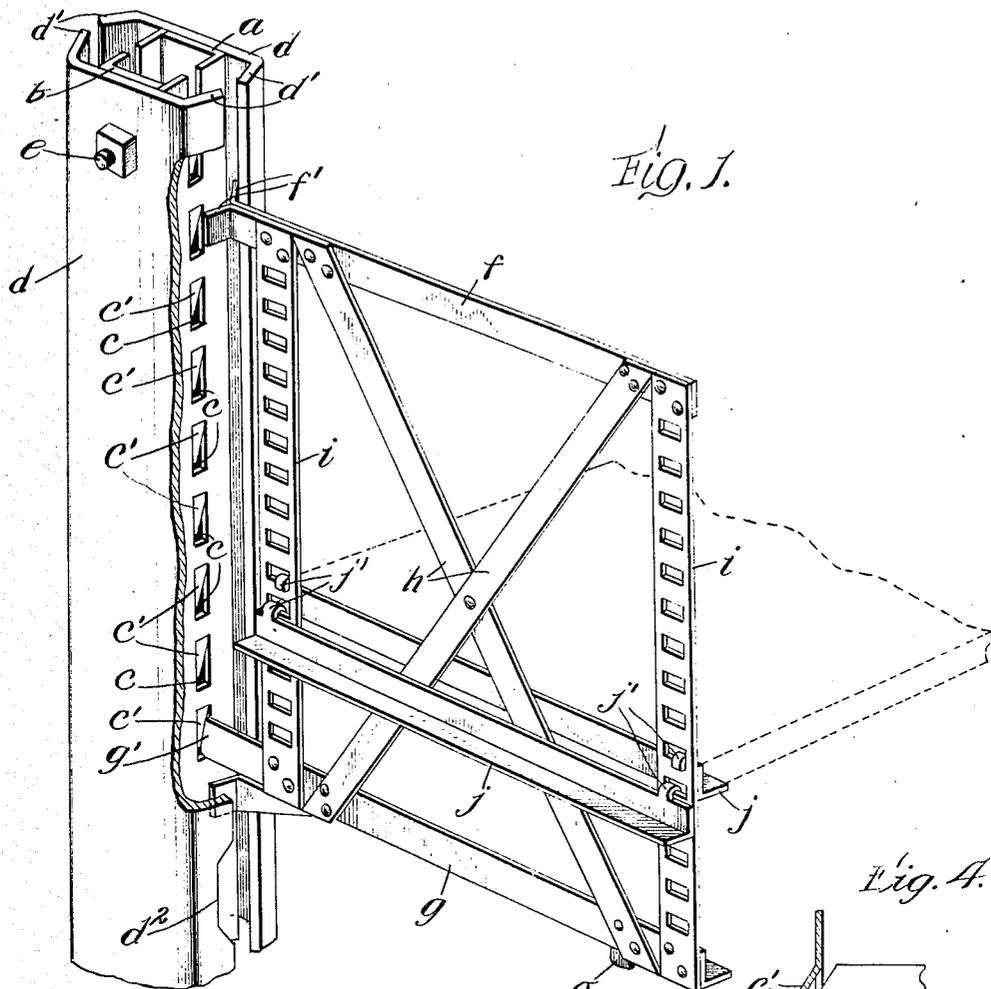


FIG. 1.

Fig. 4.

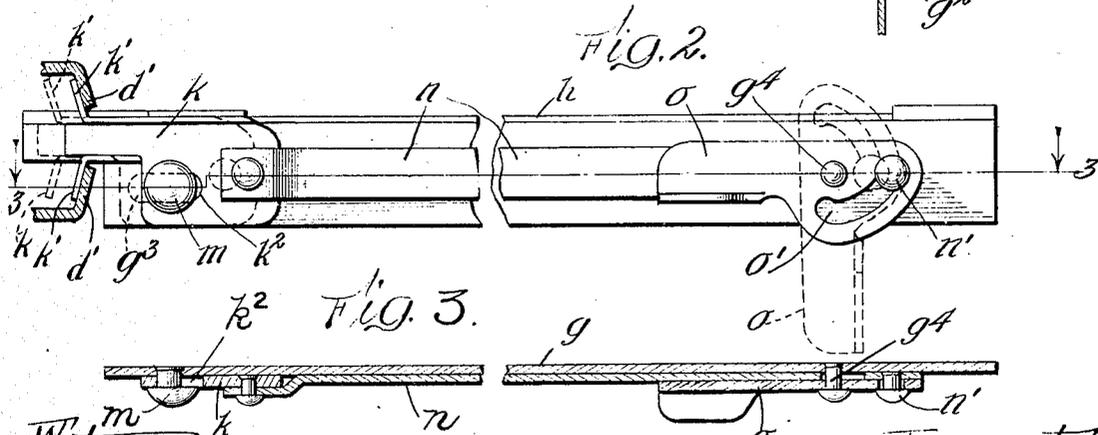


FIG. 2.

FIG. 3.

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# UNITED STATES PATENT OFFICE.

ELLNATHAN ALLEN, OF CHICAGO, ILLINOIS.

## ADJUSTABLE SHELVING.

No. 891,968.

Specification of Letters Patent.

Patented June 30, 1908.

Application filed August 29, 1907. Serial No. 390,596.

To all whom it may concern:

Be it known that I, ELLNATHAN ALLEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Adjustable Shelving, of which the following is a specification.

My invention relates to adjustable shelving, and the object of the invention is: First, to produce an upright which is simply constructed, readily assembled, smooth in its exterior and capable of furnishing safe and secure means for supporting the shelf bracket at any desired elevation. Second, to provide a shelf bracket which may be readily secured to the upright at any desired elevation and which may be operated from the front, thereby avoiding the necessity for the operator to reach far under the shelf during the vertical adjustment of the bracket.

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

Figure 1 is a perspective view showing the bracket and supporting upright. Fig. 2 is a bottom view of the bracket showing the clamping mechanism. Fig. 3 is a sectional view of the lower member of the bracket taken on the line 3—3, Fig. 2. Fig. 4 shows a modification in the form of the inner end of one of the bracket members.

Similar letters refer to similar parts throughout the several views.

In the preferred form the upright consists of two angle irons  $a$  and  $b$  laid edge to edge so as to form a hollow square as illustrated in Fig. 1. At suitable intervals along the angle irons are apertures  $c$ , which in the preferred construction are formed by stamping, as indicated. Outside of the angle irons  $a$ ,  $b$ , are arranged sheath members  $d$ ,  $d$  which have flat sides adapted to lie against the outside of the angle irons and are provided with flanges  $d'$  which are parallel and extend toward each other, but do not come together, consequently forming a slot between them.

The sheets and angle irons are secured together by any suitable means, such, for example, as the bolt  $e$ .

The brackets in the preferred construction consist of two principal horizontal members  $f$  and  $g$ , which may be fastened rigidly together by the braces  $h$ , or other suitable devices. These members  $f$  and  $g$  serve to support the upright bracket members  $i$ ,  $i$ , which

are apertured at frequent intervals for receiving the lugs  $j'$  formed upon the shelf supports  $j$ . By preference the lugs  $j'$  are so arranged upon said supports that two of them may enter the same aperture in the uprights  $i$  and lie side by side. As a result of this arrangement, two shelf supports may be adjusted to the same level on opposite sides of the bracket without interfering with each other.

The upper horizontal bracket member  $f$  above mentioned has at its inner extremity a foot  $f'$  which is preferably bifurcated as shown in Figs. 1 and 2. Said foot is adapted to lie upon the inside of the sheath members and engage the flanges  $d'$  thereon, and thereby retain the upper bracket member in engagement with the upright.

The lower bracket member  $g$  has an extension  $g'$  thereon adapted to enter the apertures  $c$  in the angle irons  $a$ ,  $b$ . The construction at the extension  $g'$  may be as shown in Fig. 1, in which it abuts the tongue  $c'$  formed in the aperture  $c$ , or it may be constructed as shown in Fig. 4, in which the extremity  $g''$  is notched and engages the lower edge of the apertures  $c$ .

The means for holding the lower member  $g$  in position with its extension  $g'$  within the aperture  $c$  consists of a clamping member  $k$ , provided, in the present instance, with branches  $k'$  adapted to engage the inner surfaces of the flanges  $d$  in a manner somewhat similar to the branches  $f'$  above mentioned. The clamping member  $k$  is slidingly mounted upon the bracket member  $g$ . In the preferred arrangement, said bracket member consists of an angle iron having its lower flange horizontal as shown. The member  $k$  is mounted upon the under side of part  $g$ , and in the present design is held in place by means of the rivet  $m$ , which is secured to member  $g$ , and has its shank extending through the slot  $k^2$  in part  $k$ . Part  $k$  is connected to and operated by the link or rod  $n$ , whose other extremity is guided by the rivet  $g^4$  fastened in the bracket member  $g$ . The rivet  $n'$  forms an articulate connection between said rod  $n$  and the hand lever  $o$ . Said lever is pivoted upon the fixed rivet  $g^4$  and has a cam slot  $o'$  for receiving rivet  $g^4$ . The result of this construction is that when lever  $o$  is rotated about pivot  $g^4$ , the rod  $n$  and the member  $k$  will be caused to move lengthwise of the member  $g$ .

In operation the bracket  $f$ ,  $g$ ,  $h$ ,  $i$ , is brought

into position by inserting the branches  $f^1$ ,  $k^1$  to a point within the flanges  $d^1$ . This may be accomplished by slipping the bracket down from the top of the upright. As this method of assembling is not always convenient, a notch  $d^2$  is preferably formed within one or both of the flanges  $d^1$ , through which said branches may be inserted. The bracket is then brought to the desired elevation, and the extension  $g^1$  brought within the proper aperture  $c$ . The bracket is then clamped in position by throwing the hand lever  $o$  to such position as to force the branches  $k^1$  home against the inside of the flanges  $d^1$ . The result is that the branches  $k^1$  come to a firm bearing against the engaged angle iron within the upright. Consequently the bracket is rigidly held in position. When it is desired to change the elevation of the bracket all that is necessary is for the operator to throw the lever  $o$  so as to release the branches  $k$ , after which the extension  $g^1$  may be withdrawn from the aperture and raised or lowered as the case may be. It will be noted that this manipulation is not only simple to perform but is readily accomplished by reason of the location of the member  $o$  near the outer extremity of the bracket. It thus becomes unnecessary for the operator to reach under the bracket, which would frequently be very inconvenient, especially when the shelves are wide or located close together.

Another advantage of my construction is that when the member  $o$  is thrown to released position, the branches  $f^1$  and  $k^1$  still remain within the flanges  $d$  of the upright, and, therefore the bracket cannot become entirely disengaged.

Another advantage of my construction is that the apparatus is self-locking. This characteristic is attained by so forming the hand lever  $o$  that the acting surface of cam  $c^1$  is at right angles to the strain through the rod  $n$  when the parts are in locked position as illustrated in Fig. 2. This eliminates the necessity for any holding device other than the cam itself. The cam, however, is free to be moved at any time by the operator. By mounting the cam and devices operated thereby upon the lower side of the bracket member  $g$ , they are not only practically hidden from view, which improves the appearance of the structure, but they are protected from accidental disturbance by contact with exterior objects.

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

1. In combination, an upright having recesses therein, a shelf bracket having a projecting member adapted to enter the recesses in said upright for engaging the same at va-

rious elevations, a clamping member mounted upon said bracket and adapted to cooperate with said upright to force said projecting member into the recesses in said upright and a cam mounted upon said shelf bracket and connected to said clamping member for operating the same substantially as described.

2. In combination, an upright having recesses therein, a shelf bracket having a projecting member adapted to enter the recesses in said upright for engaging the same at various elevations, a clamping member mounted upon said bracket and adapted to cooperate with said upright to force said projecting member into the recesses in said upright and a hand operated cam mounted on the under side of said bracket at the outer edge thereof, whereby it is moved from sight and is convenient of access, said cam being connected to said clamping member for operating the same.

3. In adjustable shelving, the combination of an upright consisting of two angle irons laid edge to edge to form a hollow square, and two sheath members bolted together and to said angle irons for holding the parts of the upright together, said sheath members having flanges lying parallel to each other, a slight distance apart, a bracket having a part thereof adapted to engage one of said angle irons, means on said bracket adapted to engage the inside of the flanges of said sheath members and a cam for operating said engaging means.

4. In adjustable shelving, the combination of an upright consisting of two angle irons laid edge to edge to form a hollow square, said angle irons being apertured at intervals, and said upright including two sheath members bolted together and to said angle irons for holding the parts of the upright together, said sheath members having flanges lying parallel to each other a slight distance apart, a bracket having a projecting member for entering the apertures in said angle irons, a clamping member mounted on said bracket and adapted to cooperate with the flanges of said upright to hold the projection on the bracket in engagement with the angle irons of said upright and means at the opposite edge of the bracket from said clamping member for operating said clamping member.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

ELLNATHAN ALLEN.

Witnesses:

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CLARA L. MARTIN.