June 12, 1928. 1,673,384

A. M. WOLTZ

SHELF SUPPORT

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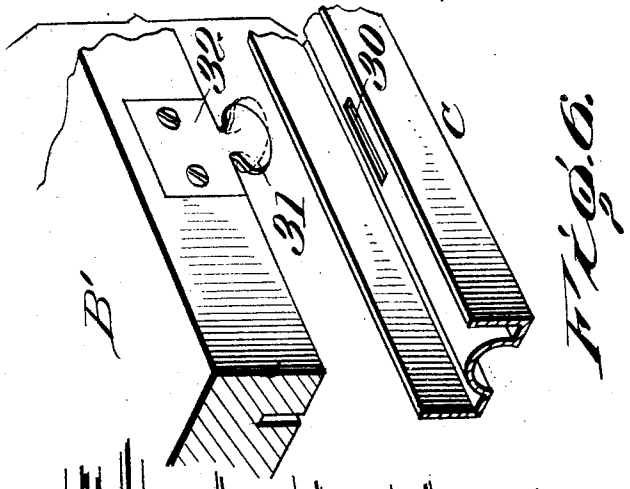



Fig. 6.

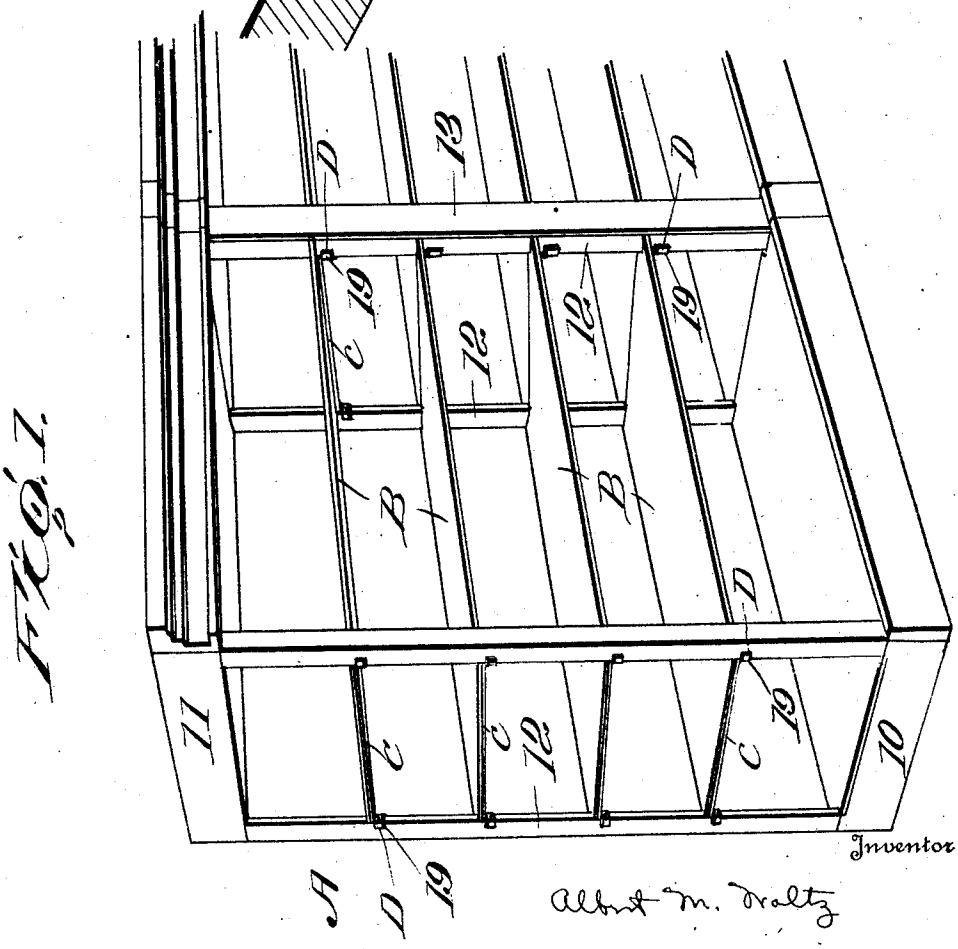



Fig. 7.

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FIG. 2.

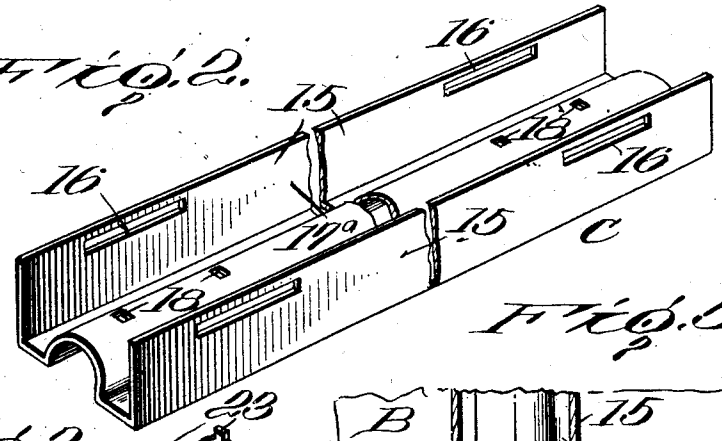



FIG. 5.

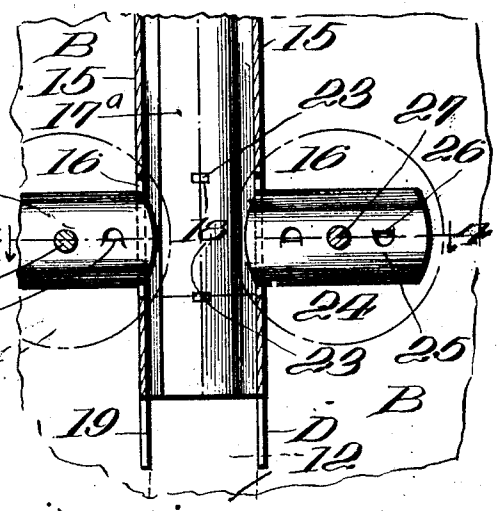



FIG. 3.

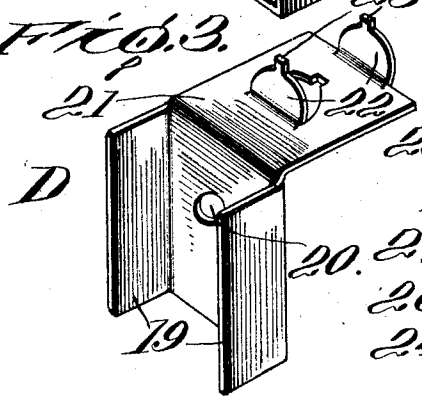



FIG. 4.

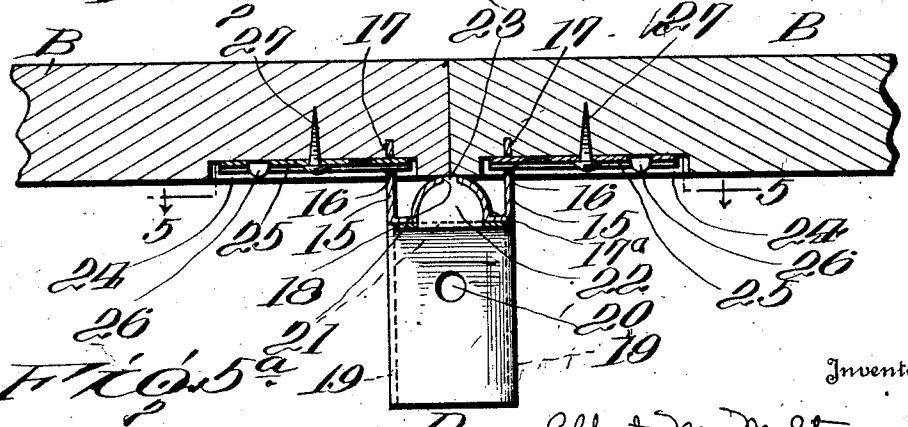
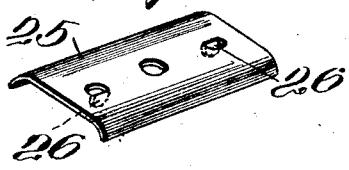



FIG. 5a.




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Patented June 12, 1928. 1,673,384

# UNITED STATES PATENT OFFICE.

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## SHELF SUPPORT.

Application filed February 1, 1924. Serial No. 689,869.

This invention is a device for firmly and rigidly attaching shelves to a supporting element.

In a pending application for patent filed July 11, 1921, Ser. No. 483,887, is illustrated a store furniture structure of the sectional unit type, the shelves being supported by channel-bar members, each having down turned ends secured to suitable supporting elements. In order to bend the ends of the channel-bar supporting members, it is first necessary to heat them and the operation, therefore requires some little time and labor. It has also been found in practice, that some inconvenience is experienced in fastening the shelf to the bracket or support, so that the shelf will lie perfectly flat, and not bind or buckle due to the ordinary warping tendencies of the lumber.

One of the objects of the present inventions is to provide a shelf support, similar in type to that disclosed in the application for patent above identified, but which may be more economically manufactured and readily substituted therefor. A further object is to provide a shelf support in which the channel-bracket is sustained by one piece stampings, riveted to the bracket, and having means for engaging suitable support elements such as the pilasters, or the stiles of supporting frames, as in the application mentioned. A further object is to provide simple and effective means for securing the shelves to the respective brackets.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings:—

Figure 1 is a perspective view illustrating a shelving structure with the invention applied thereto. Figure 2 is a perspective view illustrating one of the channel iron shelf brackets. Figure 3 is a similar view illustrating one of the support members. Figure 4 is a detail sectional view illustrating means for locking the shelves to the support bracket. Figure 5 is a bottom plan view illustrating one of the locking devices. Figure 6 is a perspective view illustrating a slight modification.

Referring to the drawings, A represents a stack of shelving comprising a base-unit 10, a top unit section 11, and vertically disposed stiles or support member 12, which may be of any desired construction. Said members 12 may be attached to the base and top sections in any desired manner. It is preferred, however, to construct the supports in the form of rectangular frames as illustrated in the application for patent above identified, the frames being covered by suitable pilasters 13, in a manner well understood in the art. It is to be understood however, that this construction is selected merely for illustrative purposes and the invention is not limited to use in connection therewith.

The shelves B are supported by carrier members C, the ends of which rest upon and are secured to bracket members D. Each carrier member consists of a body of channel iron, the length of which corresponds to the width of the shelf, the flanges 15 being slotted at 16, and extending into kerfs 17 formed in the undersides of the shelves, contiguous to their end edges. The bottom wall of the carrier members C is struct upwardly to form a longitudinally disposed concavo-convex strengthening rib $17^a$, provided with spaced-apart holes 18 contiguous to each end.

The bracket member D is provided with flanges 19, which embrace the sides of one of the upright support members, the device being held in place by means of a screw or the like, passed through a suitable opening 20 in the body of the support. The upper portion of each bracket member D is provided with an angular projection 21, corresponding in width to the bottom of the carrier member C, and struck up from said projection are lugs 22 disposed at approximately right angles to said projection. Each lug 22 is of a contour complemental to the ribs 17, and secured to a carrier member C by means of a reduced portion or lug 23 extended through one of the holes 18.

In practice, two of the bracket members D are secured to each of the carrier members C, by passing the lugs 22 upwardly beneath the rib 17, and causing the reduced portions to protrude through the holes 18,

whereupon they are riveted to prevent separation. In this manner the members C and D are securely united and a very rigid structure is provided.

The underside of each shelf B, contiguous to each of the kerfs 17, is provided with recesses 24 in each of which is pivotally mounted a locking member 25, constructed with a minor and a major axis, as shown. Said locking member is preferably made of thin metal having struck-up portions 26, and is retained in position by means of a screw 27. The slots 16 are so located in the bracket member C as to coincide with the recesses 24.

In practice, before the shelves are placed in position upon the shelf supports, the locking members 25 are adjusted to have their major axes aligned with the kerfs 17. When the shelves have been placed in position upon the members C, with the flanges 15 extending into the contiguous kerfs of adjoining shelves, a rotation of a latch piece 25 on the pivoting screw, will cause an end thereof to engage the contiguous slot 16 of the supporting channel, and thus lock the shelf down to the channel. By forming each latch piece 25 with a cam edge as shown, it will not only hold the shelf down, but also exert a drawing pressure as it is turned into engagement with the slot 16. The struck-up portions 26 provide ears or lugs which may be engaged by a suitable tool to assist in rotating the device.

A slight modification is illustrated in Figure 6, in which the longitudinal rib of the carrier member C is provided with a slot 30, to receive a lug 31, formed on the attaching device 32, secured to the shelf B'. In practice the shelf, as it is placed in position, brings the lug 31 into register with the slot 32, so that it will pass through the latter. Said lug is then given a slight twist to bring it cross-wise of the slot 30, as illustrated in dotted lines.

The advantages of the invention will be readily understood by those skilled in the art to which it belongs. It will be particularly noted that a very rigid form of shelf support is provided, which may be more economically manufactured than the device disclosed in the application for patent above identified, and while capable of general use, may be readily substituted therefor. It will also be observed that simple and efficient means are provided by which the shelf may be fastened to the support so as to lie perfectly flat, and also prevent subsequent buckling or warping of the shelving after it has been placed in position.

Having thus explained the nature of the invention and described an operative manner of constructing and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the forms of its use, what is claimed is:—

1. A shelf support comprising a carrier member having its bottom shaped to provide a strengthening rib, and a support member having an angular projection provided with lugs of a contour complemental to said rib and secured thereto.

2. A shelf support comprising a carrier member having its bottom shaped to provide a longitudinally disposed strengthening rib, said rib having openings therein, and a support member having an angular projection provided with perpendicularly disposed lugs of a shape complemental to the strengthening rib, and having reduced portions complemental to said openings.

3. A shelf support comprising a carrier member having its bottom walls shaped to provide a longitudinal strengthening rib, and a support member having an angular projection upon which one end of said carrier member rests, and integral lugs struck up from the metal forming said angular projection, said lugs corresponding in shape to the contour of said strengthening rib, and means for preventing separation of said lugs and said rib.

4. A shelf support comprising a bracket member having flanges to embrace a frame support element and at its upper end an angular projection, a carrier member having its bottom shaped to form a longitudinal rib, and attaching lugs connecting said rib and the angular projection of said bracket member.

5. A shelf support comprising engaging members provided with slots, bracket members for sustaining said support members and attaching members for engaging said slots, each of said attaching members having means whereby it may be secured to a shelf.

6. A shelf support comprising a carrier member of channel form, the flanges of which are provided with slots, support members for sustaining said carrier members, attaching members for engaging said slots, and means whereby each attaching member may be movably supported by a shelf so that it may be moved into and out of engagement with a slot of said carrier member.

7. The combination with shelves having kerfs therein, of a shelf supporting member having flanges engaging kerfs of adjacent shelves, attaching members carried by the shelf in position to engage said flanges, and sustaining means for said shelf supporting member.

8. The combination with shelves having kerfs therein, of a carrier member having slotted flanges engaging the kerfs of said shelves, said shelves having recesses intersecting said kerfs, locking members carried

by the shelves within said recesses and positioned to engage the slots of the carrier member, and support means for the carrier members.

9. The combination with shelves having kerfs therein, of a carrier member having flanges engaging the kerfs of said shelves, means supporting said carrier member, and elongated locking members rotatably secured to the respective shelves and shaped to engage the flanges of the carrier member when moved to locking position.

10. The combination with shelves having kerfs therein, of a carrier member having flanges engaging kerfs of said shelves, supporting means for the carrier member, and locking members rotatably supported by the shelves and positioned to engage the flanges of said carrier member, said members having projecting portions to be engaged by a tool.

11. The combination with shelves having kerfs therein, of a carrier member having slotted flanges engaging the kerfs of said shelves, supporting means for the carrier member, and locking members rotatably supported by the shelves and positioned to engage the slots of said flanges, said locking members being so shaped that during rotation thereof the shelf and carrier member are drawn into close engagement.

12. The combination with shelves, of a carrier member having a longitudinally disposed rib upon which the ends of the contiguous shelves rest, support members each having lugs complemental to said rib and secured thereto, and means for securing the shelves to said carrier member.

13. The combination with shelves, of a supporting carrier member engaging said shelves and having a longitudinally disposed strengthening rib provided with holes, support members each having lugs shaped to conform to the contour of the rib, said lugs having reduced portions extended through and riveted within said holes, and means for securing the shelves to said carrier member.

14. The combination with a shelf, of a slotted carrier member engaging said shelf, supporting means for said carrier member, locking members having means by which they may be movably secured to a shelf, said members being complemental to the slots of said carrier member and lying transversely with respect to the carrier member when in locked position.

In testimony whereof I have hereunto set my hand.

ALBERT M. WOLTZ.