W. B. LOOK.

LIBRARY STACK CONSTRUCTION.

APPLICATION FILED AUG. 10, 1914.

1,172,219.

Patented Feb. 15, 1916.

3 SHEETS—SHEET 1.

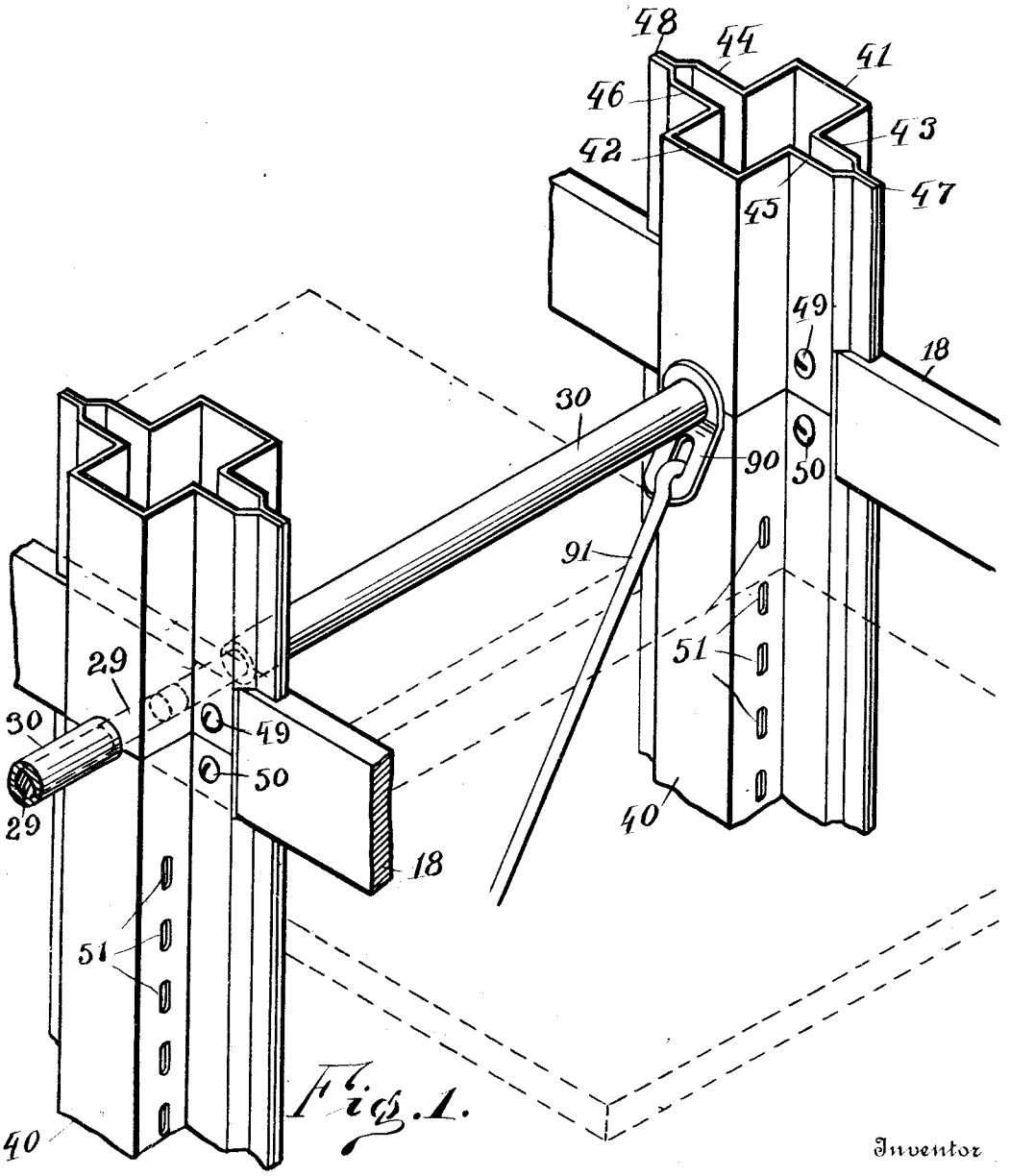


Fig. 1.

Witnesses
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3 SHEETS—SHEET 2.

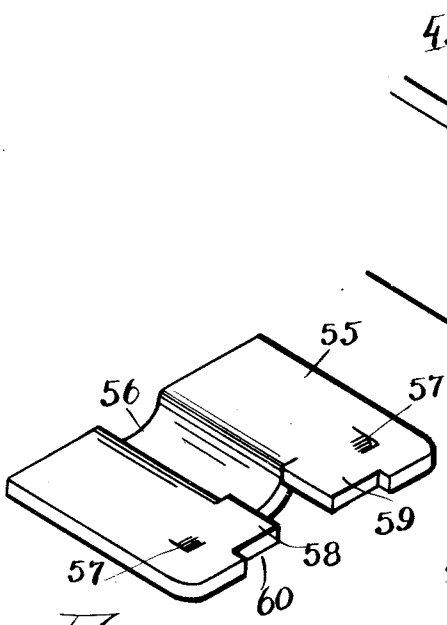


Fig. 3.

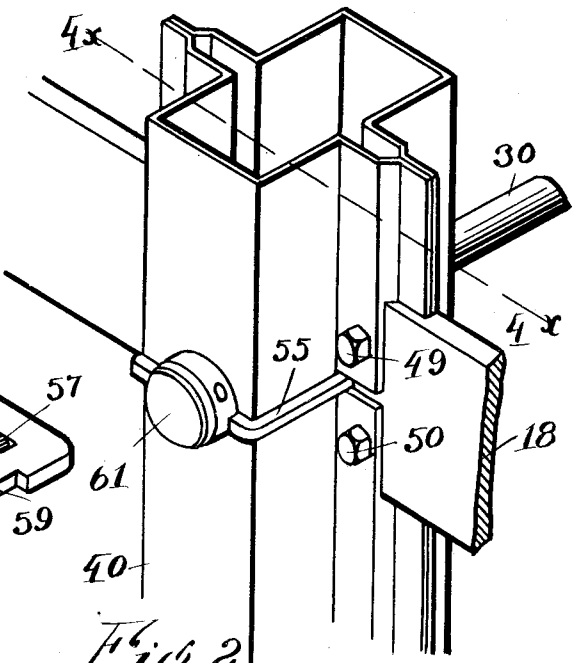


Fig. 2.

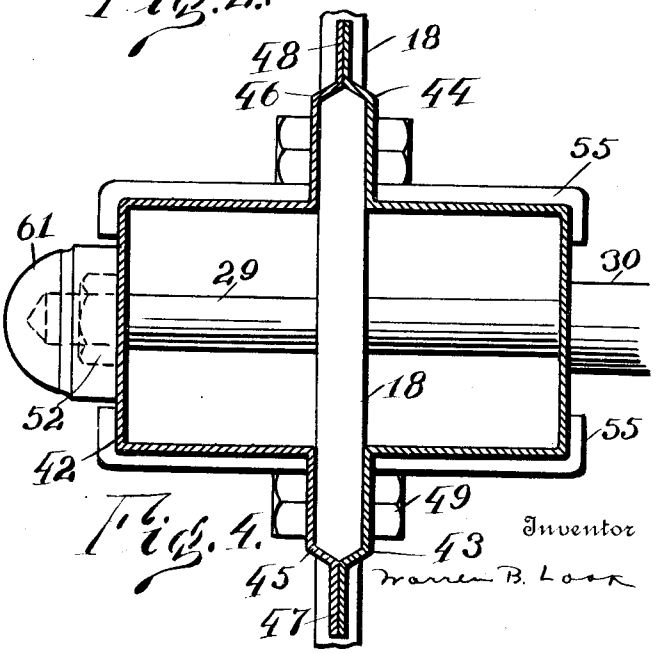


Fig. 4.

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3 SHEETS—SHEET 3.

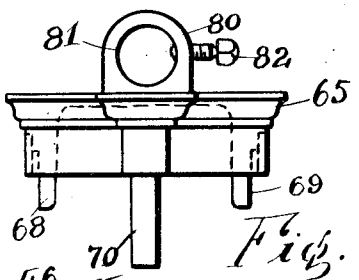


Fig. 7.

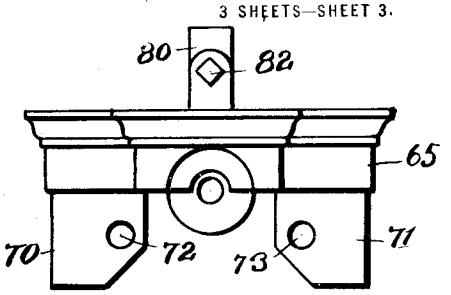


Fig. 8.

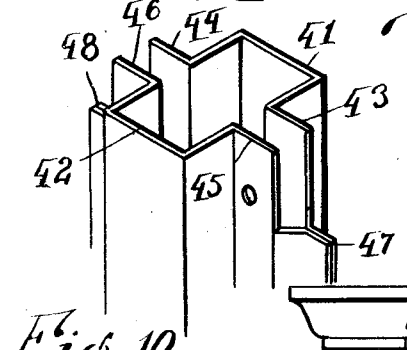


Fig. 10.

Fig. 6.

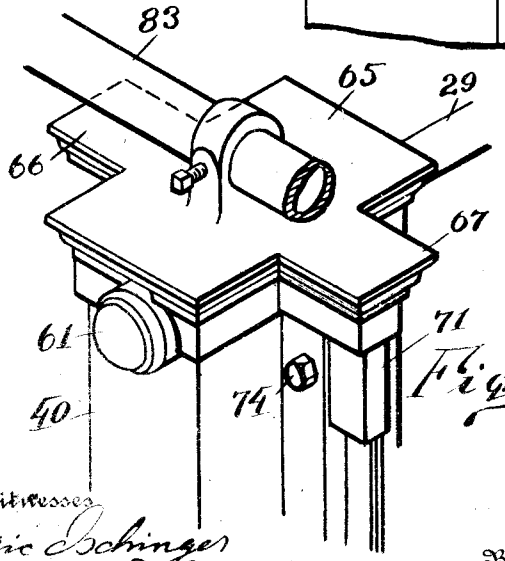


Fig. 5.

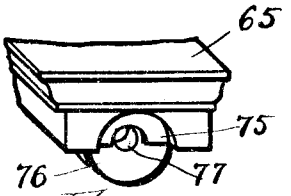


Fig. 9.

Witnesses
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UNITED STATES PATENT OFFICE.

WARREN B. LOOK, OF JAMESTOWN, NEW YORK, ASSIGNOR TO ART METAL CONSTRUCTION COMPANY, OF JAMESTOWN, NEW YORK, A CORPORATION OF NEW YORK.

LIBRARY-STACK CONSTRUCTION.

1,172,219. Specification of Letters Patent. Patented Feb. 15, 1916.

Application filed August 10, 1914. Serial No. 856,049.

To all whom it may concern:

Be it known that I, WARREN B. LOOK, a citizen of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Library-Stack Construction, of which the following is a specification.

The object of this invention is to provide an improved form of library stack or a support for book shelves, floors, etc., in fire proof library construction.

Another object of the invention is to make the support entirely of sheet metal, the support being made of uprights arranged in pairs, the uprights being welded together at their meeting edge.

Another object of the invention is to provide bearing plates between consecutive sections in the stack.

Another object of the invention is to provide cover plates for the tops of the stacks, which cover plates are removable to provide for additional section in the stack.

Another object of the invention is to provide tie rods for the caps to hold the tops of the uprights in line with each other.

These and other objects of the invention, will be fully illustrated in the drawings, described in the specification and pointed out in the claims at the end thereof.

In the accompany drawings, Figure 1 is a perspective view of my improved stack construction. Fig. 2 is a detail perspective view of the construction shown in Fig. 1 in which bearing plates are interposed between consecutive sections. Fig. 3 is a detail perspective view of one of the bearing plates. Fig. 4 is a horizontal section on the line 4^x—4^x in Fig. 2. Fig. 5 is a perspective view of the cap used for finishing the tops of the channels shown in Fig. 1, which caps can be removed to permit additional sections to be placed on the tops of the channels. Fig. 6 is a front elevation of the cap in place on its channel. Fig. 7 is a front elevation of the cap separate from the channel. Fig. 8 is a side elevation of the cap separate from the channel. Fig. 9 is a detail perspective view of one end of the cap showing the recess therein. Fig. 10 is a perspective view of the top of the section on which the cap fits.

In the accompanying drawings, like reference numerals indicate like parts.

In the drawings, the uprights 40 are shown made up of the main channels 41 and 42 both of which are U shaped, the channels being made relatively wide. These channels are each provided with the wide flanges thereon 43, 44, 45 and 46 which flanges are flared upwardly and out and are provided with the meeting edges 47 and 48. At the ends of the channeled sections thus formed, the meeting edges 47 and 48 and the flared or beveled portions adjacent thereto are cut away to receive the bars 18 with which bars the channels are thus interlocked. The flanges 43 and 45, 44 and 46 are separated from each other just enough to receive the bars 18 between them and the flanges and the bars are perforated to receive the bolts 49 and 50 and similar bolts on the other side, not shown, the arrangement of which bolts, however, correspond to that shown in Figs. 1 and 2. By these bolts the channels 41 and 42 of consecutive sections are fastened together and are fastened to the bar 18. The bar 18 is perforated to receive the bar 29 which passes therethrough and the channels 41 and 42 are recessed to receive the bar 29 which bar extends continuously through a number of sections and has threaded ends to receive the nuts 52 on the outer ends thereof by which all of the sections are tied together.

The sections are spaced apart by the sleeves or tubes 30 through which the bar 29 passes, one of which of proper length is interposed between two consecutive uprights. The bar 29 passes through the uprights while the sleeve 30 abuts against the uprights and between the tension of the bar 29 and the compression of the sleeves, the uprights are held in a rigid structure. The channels 41 and 42 are perforated as shown at 51—51 to receive suitable brackets for the purpose of supporting book shelves which brackets and shelves form no part of this invention.

It will be seen that the U shaped part of the channels 41 and 42 may be of any desired width or depth. For the purpose of improving the stability of the uprights when assembled one on top of the other, I provide the bearing plate 55 shown in Fig. 3, two of which bearing plates are provided at the joint between the two consecutive sections and the uprights. This bearing plate consists of a flat plate having a semi-

cylindrical depression therein to receive the tie rod 29 and has the lugs or clips 57 struck downwardly therefrom for the purpose of making positive engagement with the outer corners of the channels 41 and 42. It is also finished with the edges 58 and 59 which increase the bearing surface between the bearing plate and the channels and it is cut away at 60 to receive the finishing nut 61.

For the purpose of closing the tops of the upright channels, which otherwise would remain open, I provide the caps 65 which caps are rectangular to conform to the channels. Each top is preferably of a single hollow casting. It is also provided with the projections 66 and 67 on each side thereof to cover the flanges 43, 44, 45 and 46. It is provided with the lugs 68 and 69 which engage with the inside of the channels 41 and 42. It is also provided with the projections 70 and 71 placed in the projections 66 and 67, which engage with the recesses in the cutaway portions of the flanges. These projections are provided with round holes 72 and 73. The bolts 74 pass through the openings in the flanges and the openings in the projections 70 and 71 for the purpose of firmly securing the caps to the uprights. The caps on each end are provided with a recess such as is shown in Fig. 9. In each recess is a stepped annular surface comprising the steps 75 and 76. The surface 76 engages back of the channel and the surface 75 is flush with the channel. Through the center of the annular surface is the opening 77, through which passes the tie rod 29. When the parts are assembled as above described a hexagon or square nut is first put on the end of the tie rod and drawn up snugly against the surface 75 and the channel. The round nut 61 is finally put on the end of the rod 29, it being provided with a threaded recess to make engagement therewith.

On top of the cap is provided the lug 80, having a cylindrical opening 81 therein, in which is threaded a set screw 82. Through this opening passes the tie rod 83 which engages other caps as well and by which the uprights are firmly spaced apart at the top. The rod 83 runs parallel to the bars 18 and serves the same purpose as the bar 18 in spacing apart the uprights. The bar 18 serves the additional purpose of supporting the floor.

As shown in Fig. 1 a clip 90 may be fastened on the tie rod 29 and held against the upright by the sleeve 30. To this clip may be fastened the diagonal brace 91, the lower end of which may be fastened to the bottom of the next adjacent upright in any suitable manner.

I claim:—

1. An upright support comprising sections each of which is made up of a pair of channels having outwardly extending meeting edges, a supporting bar extending across the sections between said channels, a bearing plate interposed between consecutive sections on each side of said supporting bar.

2. An upright support comprising sections each of which is made up of a pair of channels having outwardly extending meeting edges, a supporting bar extending across the sections between said channels, a bearing plate interposed between consecutive sections on each side of said supporting bar, a bar extending transversely of said supporting bar, a depression in said supporting plate to receive said bar.

3. An upright support comprising sections each of which is made up of a pair of channels having outwardly extending meeting edges, a supporting bar extending across the sections between said channels, a bearing plate interposed between consecutive sections on each side of said supporting bar, a bar extending transversely of said supporting bar, a depression in said supporting plate to receive said bar, a cap for covering the end of said bar and a recess in the edge of said supporting plate to receive the end of said cap.

4. An upright support comprising sections each of which is made up of a pair of channels having outwardly extending meeting edges, said meeting edges being partly cut away on opposite sides of said sections at the ends thereof, a cap for covering the opening of the top section, said cap conforming to the outline of the end of the section and having depending lugs that engage with said cutaway portions.

5. An upright support comprising sections each of which is made up of a pair of channels having outwardly extending meeting edges, said meeting edges being partly cut away on opposite sides of said sections at the ends thereof, a cap for covering the opening of the top section, said cap conforming to the outline of the end of the section and having depending lugs that engage with said cut away portions, bolts extending through said lugs and said meeting edges to fasten the cap to the section.

6. An upright support comprising sections each of which is made up of a pair of channels, a bar extending across the top of said section, a recess in the top of said section to receive a part of said bar, a cover for said section having depending lugs therein which engage inside of said channels, said cover having a surface adjacent to each of said lugs, said surface being continuous with the surface of the channel when the cap is in position.

7. An upright support comprising sections each of which is made up of a pair of channels, a bar extending across the top of said section, a recess in the top of said sec-

tion to receive a part of said bar, a cover for said section having depending lugs therein which engage inside of said channels, said cover having a surface adjacent to each of said lugs, said surface being continuous with the surface of the channel when the cap is in position, an opening through said lugs and surface to receive said bar.

8. An upright support, a cap for said support, a lug projecting above said cap, a lug projecting below said cap, an opening in each of said lugs at right angles to each other, means for fastening bars in said lugs.

In testimony whereof I affix my signature in presence of two witnesses.

WARREN B. LOOK.

Witnesses:
R. FENTON FORBES,
ABIAH D. DREYER.