R. R. BELCHER.

STORE SHELVING.

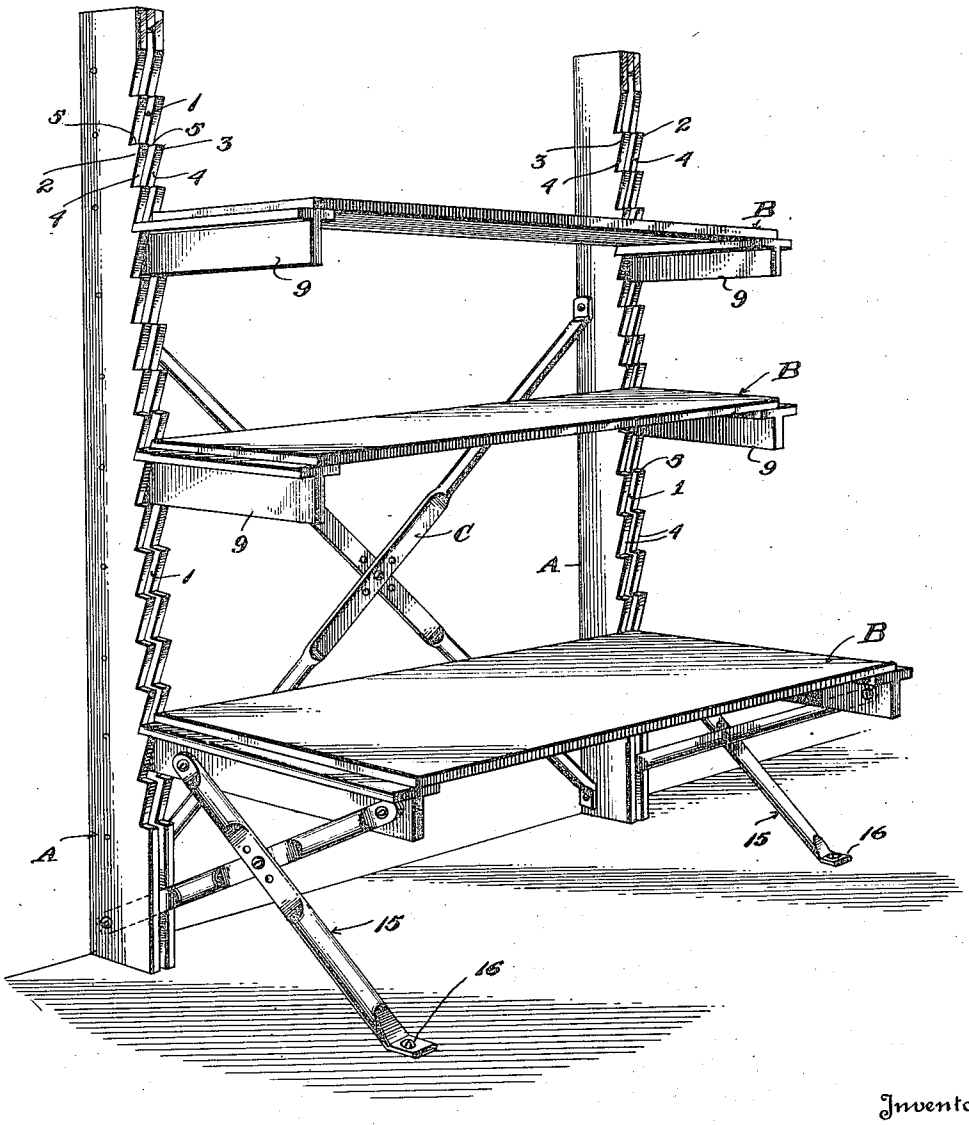
APPLICATION FILED OCT. 16, 1917.

1,282,369.

Patented Oct. 22, 1918.

2 SHEETS—SHEET 1.

Fig. 1.



Inventor

R. R. Belcher

Witnesses

By Meyers, Cushman & Rea

Attorneys

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2 SHEETS—SHEET 2.

Fig. 2.

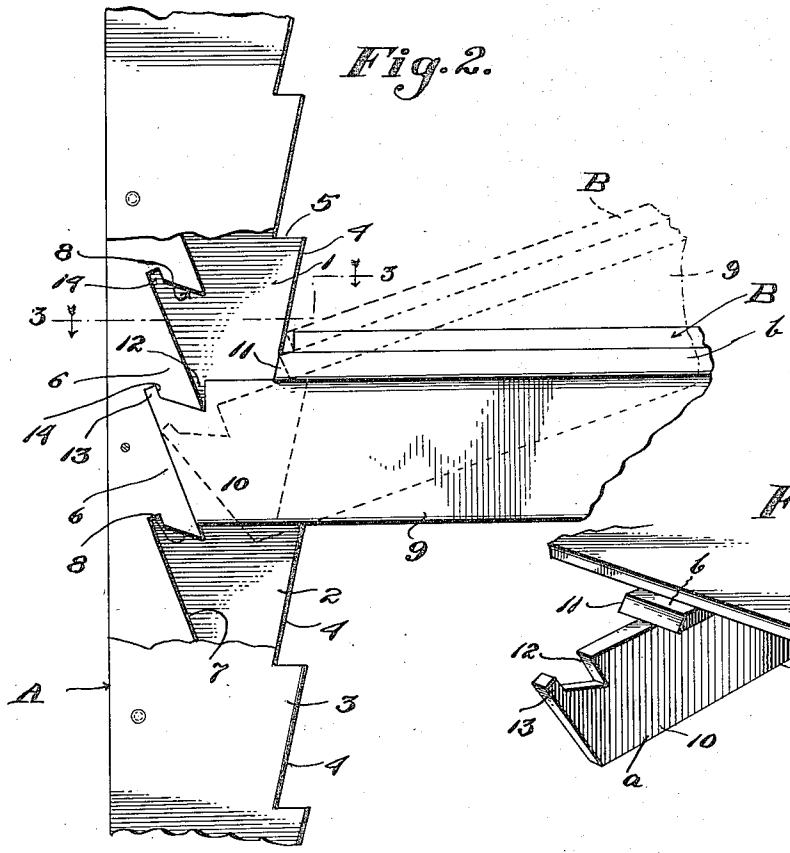


Fig. 4.

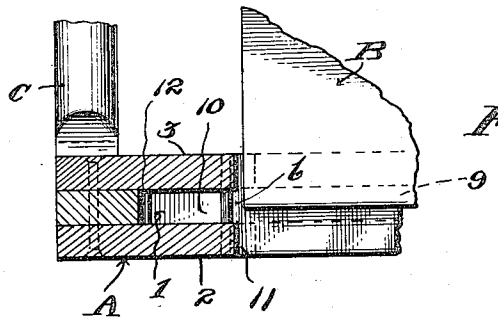


Fig. 3.

Inventor

R. R. Belcher

Witnesses

By Meyer, Cushman & Rea

Attorneys

UNITED STATES PATENT OFFICE.

RALPH ROY BELCHER, OF BAINBRIDGE, GEORGIA.

STORE-SHELVING.

1,282,369. Specification of Letters Patent. Patented Oct. 22, 1918.

Application filed October 16, 1917. Serial No. 196,816.

To all whom it may concern:

Be it known that I, RALPH R. BELCHER, a citizen of the United States, residing at Bainbridge, in the county of Decatur and State of Georgia, have invented new and useful Improvements in Store-Shelving of which the following is a specification.

The present invention relates to improvements in store shelving and has for its object the production of a novel construction which will admit of a quick and ready adjustment of the shelves on their supporting members to any desired elevation, and which will provide for a rigid connection between the shelves and their supporting members.

It is, also, an object of the invention to provide an interlocking connection between the shelves and their supporting members, as will prevent the shelves from accidental pulling out or disengaging from their supporting members without the provision of bolts, screws, pins or other similar fastening means.

The invention further contemplates the production of improved store shelving which is simple in construction, exceedingly cheap to produce, unique in appearance, which may be easily and readily manipulated by any one and which is effective for its purposes.

With the above objects in view, the invention consists in the provision of vertical columns or standards for supporting brackets, each of which columns has a longitudinal slot or groove therein extending substantially throughout its length and has on the outer edges of the slot a series of teeth cut or beveled on their under side, the bottom wall of the groove also having a series of teeth which are cut or beveled on their upper side; and, the invention further consists in a horizontal bracket member which is provided with a projection receivable in said groove or slot and engageable with the teeth therein, and in shoulders on the bracket which are engageable with the teeth formed on the column at the outer edges of said groove. It will be seen, from the following specification and drawings, that when these parts are assembled the bracket members will be maintained in position, in view of the peculiar arrangement of said teeth on the columns, and will be readily movable for vertical adjustments on the columns.

The invention further resides in providing upwardly extending notches between the teeth which are provided in the grooves of the columns and, preferably, at the point of juncture between adjacent teeth. These notches are adapted to receive a correspondingly formed projection provided on the inner end of the bracket arms, which projection or detent serves as a means for locking the bracket arm in adjusted position against accidental withdrawal or displacement from its adjustable connection with the columns.

With the above objects and features in view, the invention further resides in sundry details of construction which will be hereinafter pointed out in the following specification and shown in the accompanying drawings.

In the drawings which illustrate the invention:

Figure 1 is a perspective view of the invention,

Fig. 2 is an enlarged detail side elevation of one of the supporting columns or standards with portions broken away to illustrate the arrangement of the teeth or bearing shoulders and the interlocking connection of the bracket supporting arm therewith,

Fig. 3 is a horizontal transverse section of the supporting column taken on line 3—3 of Fig. 2, and

Fig. 4 is an enlarged detail perspective of the column-engaging end of the supporting bracket.

Like characters denote like parts throughout the following specification and drawings.

With particular references to the drawings, A indicates the supports upon which the shelving B is supported. The standards are rigidly connected together and maintained in spaced relation by the X-shaped brace C. The brace C is, preferably, made of two lengths of tubing which are flattened at their intermediate portions and pivotally connected together, the ends of the brace being secured to the standards by means of bolts or other suitable fastening means. It will be noticed that the flattened portions of this tubing are provided with a plurality of openings which will permit the X-brace to be adjusted so as to vary the distance of the standards relative to each other.

The standards or columns A are made, preferably, of metal and each has its front faces provided with a longitudinal slot or groove 1 extending substantially throughout

the length of the column. The standards may be constructed in various manners, but in all events, are to have the equivalent of the groove 1. The outer edges of the groove 1 of each column is provided with a corresponding series of teeth or bearing shoulders 2 and 3 projecting outwardly from the front face of the columns and beveled on their under surface, as shown at 4, and provided with abrupt upper faces or shoulders 5. The inner or bottom wall of the groove 1 of each column is also provided with a series of teeth or bearing shoulders 6, as shown in the drawings, which are beveled on their upper sides, as shown at 7, and which have abrupt under faces or shoulders 8. These peculiarly arranged series of teeth, 2, 3 and 6 provide means for supporting the brackets 9, upon which the shelving B is mounted, and permitting the brackets to be adjusted vertically, readily along the length of the standards in order that variations in shelf spacing may be made. Each of these brackets 9, preferably, has a T-shape formation in cross section and has the rear end of the vertical portion *a* thereof extending beyond its horizontal portion or web *b*, as indicated at 10, in order to enter the groove 1 of a standard A.

A shoulder 11 is provided by the rear end of the horizontal portion *b* and this shoulder engages with the shoulders 5 of the two series of teeth 2 and 3. The joint between the bracket and standard is completed when the extension 10 is inserted sufficiently within the groove to engage the shoulders 8 of one of the teeth 6 formed on the bottom wall of the groove 1 of the standard.

It will be noticed from the drawings that the rear ends of the portions *a* and *b* of the bracket are beveled to coincide with the beveled faces 4 and 7, respectively, of the sets of teeth 6, 2 and 3 in order to provide a rigid and substantial joint between the said teeth and the projection 10 and shoulders 11 of the bracket. It will be obvious that any weight placed upon the shelves will only tend to render the joint between the brackets and standards more secure, and that the brackets may be readily adjusted along the whole length of the standards with little effort.

In order to maintain the brackets in the standards from accidental pulling out or displacement, the upper edge of the extension *a* of each bracket is notched or recessed adjacent its rear extremity, as shown at 12, to form an upwardly inclined lug 13 at its extremity, which is received in correspondingly formed recesses 14 provided at the bases of the teeth 6, as clearly shown in Figs. 2 and 4. The notch 12 is formed to receive the shouldered surfaces of the teeth 6, so that the lug 13 may be moved into the recess 14, thus providing an interlocking joint which will maintain the bracket against pulling out or accidental displacement and eliminate the use of bolts, screws and other fastening members which have heretofore been used for this purpose. The brackets may be readily adjusted along the length of the standards to various elevations by first tilting the brackets in the manner shown in Fig. 2, which will break the interlocking joint between the standards and brackets by moving the lug 13 from the recess 14. It will also be manifest, as soon as the desired elevation has been obtained, the brackets can be readily secured in position by moving the rear ends of the brackets with a "hooking-in" motion, which will establish a rigid and substantial joint between the brackets and the standards.

As shown in the drawings, the standards A are constructed of two outer bars *y* spaced apart by an intermediate bar *z* having less than one-half the width of the outer bars and arranged to lie adjacent the rear edge of the latter. The outer bars have their front edges provided with a series of teeth 2 and 3, while the series of teeth 6 are provided on the front edge of the intermediate bar and lie wholly within the space provided between the outer bars. These standards may be constructed in other ways, and I do not wish to limit myself to the construction herein shown. Likewise, it may also be desirable to construct the brackets 9 of a bar substantially rectangular in cross section provided on opposite sides thereof, adjacent its rear extension or end 10, with projections which will provide the shoulders 11, thus eliminating the necessity of constructing the whole bracket of a T-shape formation.

To maintain the structure upright, in the event of it not being arranged adjacent to and fastened to a wall, brace frames 15, preferably, formed of a pair of crossed bars are provided. One leg of each frame 15 is pivotally secured by a suitable bolt or rivet in the groove in a standard, and the other leg has a foot 16 adapted to rest on the floor at a distance from the standards, and to be secured thereto by suitable fastening means. The other legs of the braces are pivotally secured to a bracket which supports a broad or extended shelf which may form a work table or the like.

The frames 15 are constructed similarly to the brace C and each is provided with a series of perforations at the juncture of its legs so as to permit their pivot points to be changed when it is desired to vary the elevation of the shelves supported thereby on the standards in the manner above described.

It, is of course, obvious that my invention is susceptible to various changes and modifications which would be within the spirit of the invention without departing from the scope of the following claims.

What I claim is:

1. In a shelf construction, a supporting column having a longitudinal series of bearing shoulders facing upwardly and a longitudinal series of bearing shoulders facing downwardly, the latter series being disposed rearwardly of said former series, a shelf bracket adjustable along the column and having shoulders to engage and rest upon said upwardly facing bearing shoulders, and an extension on the bracket to engage and bear against said downwardly facing bearing shoulders.

2. In a shelf construction, a supporting column having a plurality of longitudinal series of bearing shoulders facing upwardly and a longitudinal series of bearing shoulders facing downwardly, the latter series being disposed rearwardly of the former, a shelf bracket adjustable along the column and having portions to engage and bear against said bearing shoulders to support the bracket in adjusted position.

3. In a shelf construction, a supporting column having a longitudinal series of bearing shoulders facing upwardly and a longitudinal series of bearing shoulders facing downwardly, the latter series being disposed rearwardly of the former series, a shelf bracket adjustable along the column and having portions to engage and bear against said bearing shoulders to support the bracket in adjusted position, said column having a longitudinal series of angularly extending recesses therein, and a lug on the bracket and engageable in said recesses to hold the bracket from pulling out or accidental disengagement from said shoulders on the column.

4. In a shelf construction, a supporting column having a groove therein, teeth on the outer edges of said groove, a tooth on the bottom wall of said groove, a shelf supporting bracket having a portion thereof insertible in said groove and engageable with said tooth within the groove, said bracket having other portions engageable with the teeth on the outer edges of the groove, whereby the bracket may be supported in position.

5. In a shelf construction, a supporting column having a groove therein, teeth on the outer edges of said groove, a tooth on the bottom wall of said groove, a shelf supporting bracket having a portion thereof insertible in said groove and engageable with said tooth within the groove, said bracket having other portions engageable with the teeth on the outer edges of the groove, whereby the bracket may be supported in position, said groove also having a recess in a wall thereof, and a lug on the bracket and receivable in said recess for maintaining the bracket against accidental pulling out or disengagement from the teeth on the column.

6. In a shelf construction, a supporting column having teeth longitudinally arranged thereon and having other longitudinally arranged teeth disposed to the rear of said first teeth, a shelf bracket having shoulders to rest upon said first teeth and having an extension to engage and bear against said rearwardly disposed teeth, whereby the bracket is maintained in position.

7. In a shelf construction, a supporting column having teeth longitudinally arranged thereon and having other longitudinally arranged teeth disposed to the rear of said first teeth, a shelf bracket having shoulders to rest upon said first teeth and having an extension to engage and bear against said rearwardly disposed teeth, whereby the bracket is maintained in position, certain of said teeth having an angularly extending recess therebetween, and a lug on the bracket extension and receivable in said recesses for maintaining the bracket against accidental pulling out from the teeth on the column.

8. In a shelf construction, a supporting column having a longitudinal groove therein, a series of teeth on the bottom wall of said groove and having their upper sides beveled, a series of teeth on the outer edges of said groove and having their under sides beveled, a shelf supporting bracket having shoulders thereon engageable between the teeth on the outer edges of said groove and being beveled to coincide with the beveled sides of said teeth, and an extension on the bracket receivable in said groove and engageable between the teeth on the bottom wall of the groove, said extension being beveled to coincide with the beveled sides of said last mentioned teeth, whereby a firm joint between the bracket and column may be made to support the former from the latter.

9. In a shelf construction, a supporting column having a longitudinal groove therein, a series of teeth on the bottom wall of said groove and having their upper sides beveled, a series of teeth on the outer edges of said groove and having their under sides beveled, a shelf supporting bracket having shoulders therein engageable between the teeth on the outer edges of said groove and being beveled to coincide with the beveled side of said teeth, an extension on the bracket receivable in said groove and engageable between the teeth on the bottom wall of the groove, said extension being beveled to coincide with the beveled sides of said last-mentioned teeth, whereby a firm joint between the bracket and column may be made to support the former from the latter, said column having upwardly extending recesses therein at the bases of said teeth on the bottom wall of the groove, and an upwardly projecting lug on said bracket extension to engage in said recesses for maintaining the joint between said bracket and column against accidental pulling out.

10. In a shelf construction, a supporting column having a longitudinal groove therein, a series of teeth on the bottom wall of said groove and having their upper sides beveled, a series of teeth on the outer edges of said groove and having their under sides beveled, a shelf supporting bracket having shoulders thereon engageable between the teeth on the outer edges of said groove and being beveled to coincide with the beveled side of said teeth, an extension on the bracket receivable in said groove and engageable between the teeth on the bottom wall of the groove, said extension being beveled to coincide with the beveled sides of said last-mentioned teeth, whereby a firm joint between the bracket and column may be made to support the former from the latter, said column having upwardly extending recesses therein at the bases of said teeth on the bottom wall of the groove, said bracket extension being notched adjacent its extremity to provide a depression for the reception of the bases of said last mentioned teeth and an upwardly extending lug at the extremity of said bracket extension adapted to engage in said recesses for maintaining the joint between said bracket and column against accidental pulling out.

11. In a shelf construction, supporting columns each having a plurality of series of bearing shoulders, the shoulders of each series facing in opposite directions, certain of said series being disposed to the rear of the other of said series, horizontal bracket arms adjustable along each of said columns, shoulders on said bracket arms to engage the bearing faces of the shoulders on said columns, means for supporting said columns in upright position comprising X-shaped braces having their legs centrally pivoted together, one of the lower legs of each brace being pivotally secured to the lower end of its respective column, while the other lower leg is adapted to be secured to the floor, the upper legs of each brace being secured to certain of the bracket arms, the center pivot of the legs of said braces being shiftable to permit an adjustment of said certain bracket arms along the shoulders on said columns.

12. In a shelf construction, a supporting column having teeth longitudinally arranged thereon and having other longitudinally arranged teeth disposed to the rear of said first teeth, a shelf bracket having shoulders to rest upon said first teeth and having an extension to engage and bear against said rearwardly disposed teeth, whereby the bracket is maintained in position, said column having an upwardly extending recess therein between each of said rearwardly disposed teeth, and an upwardly projecting lug on said bracket extension to engage in said recess for maintaining the joint between said bracket and column against accidental pulling out.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RALPH ROY BELCHER.

Witnesses:
C. W. WIMBERLEY,
E. A. WIMBERLEY.