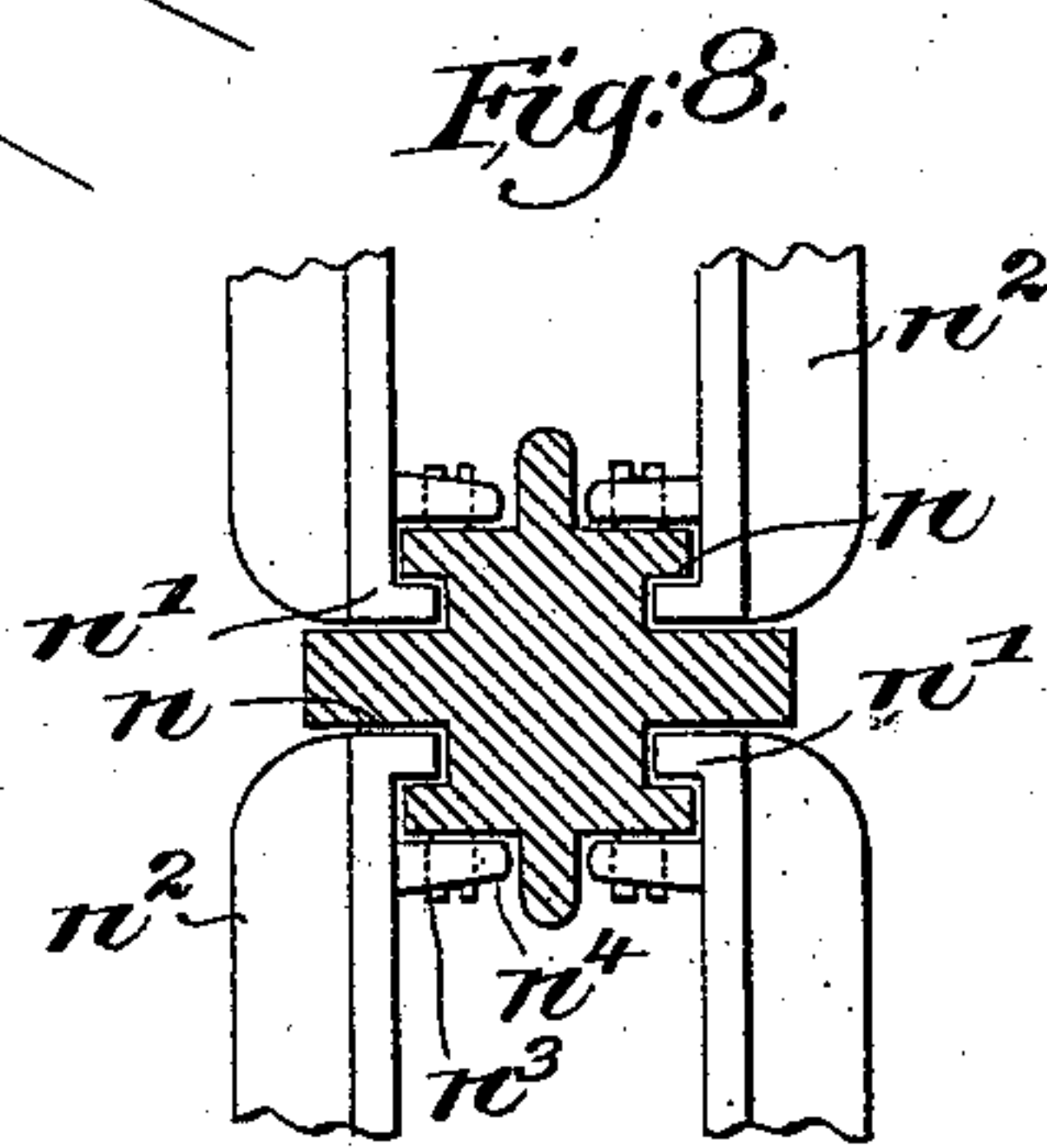
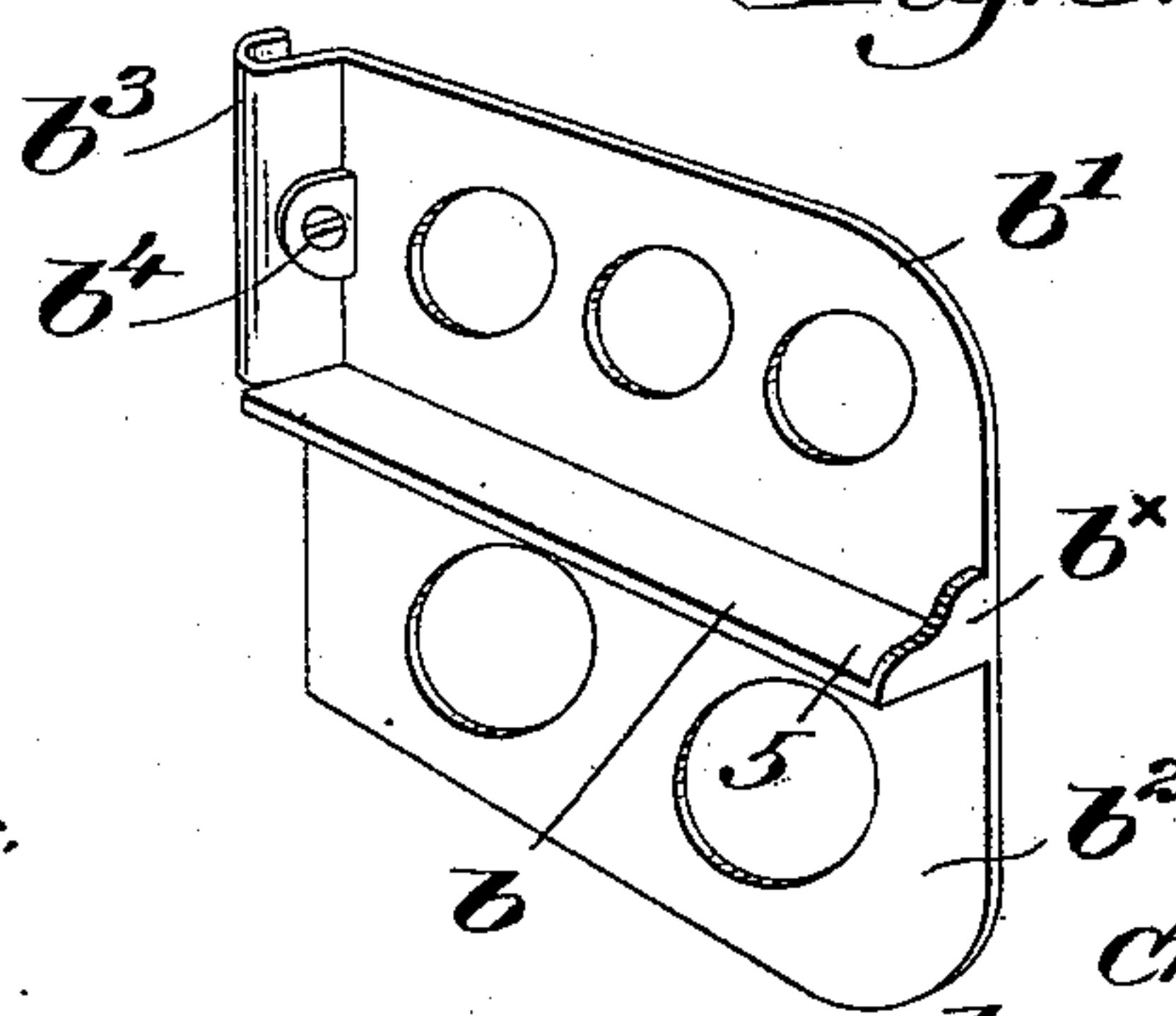
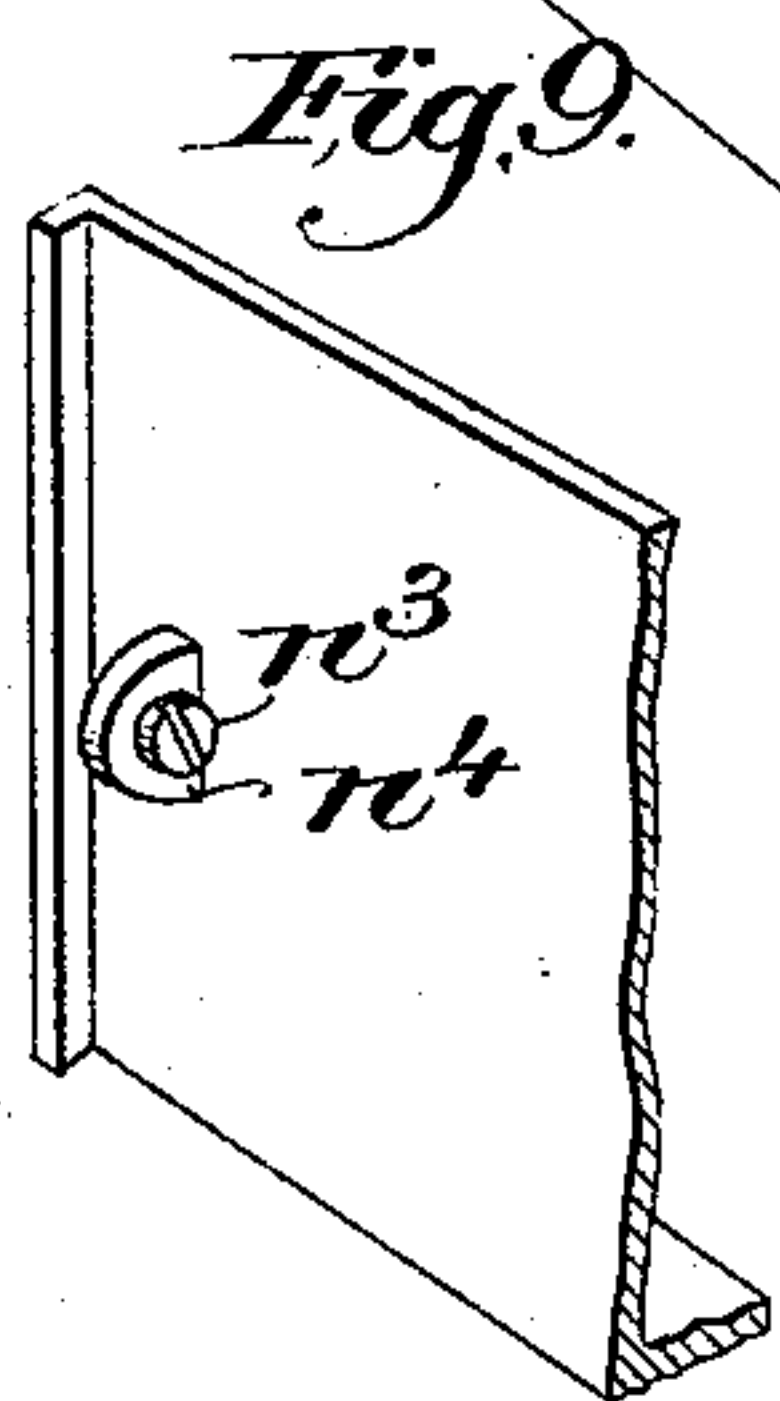


2 Sheets—Sheet 1.

No. 540,435.

Patented June 4, 1895.



Witnesses.
Edward F. Allen.

Thomas J. Drummond

6² Inventor.
Charles B. Godfrey.
by Crosby Gregory. attys

(No Model.)

2 Sheets—Sheet 2.

C. B. GODFREY.
ADJUSTABLE SHELF SUPPORT.

No. 540,435.

Patented June 4, 1895.

Fig. 2.

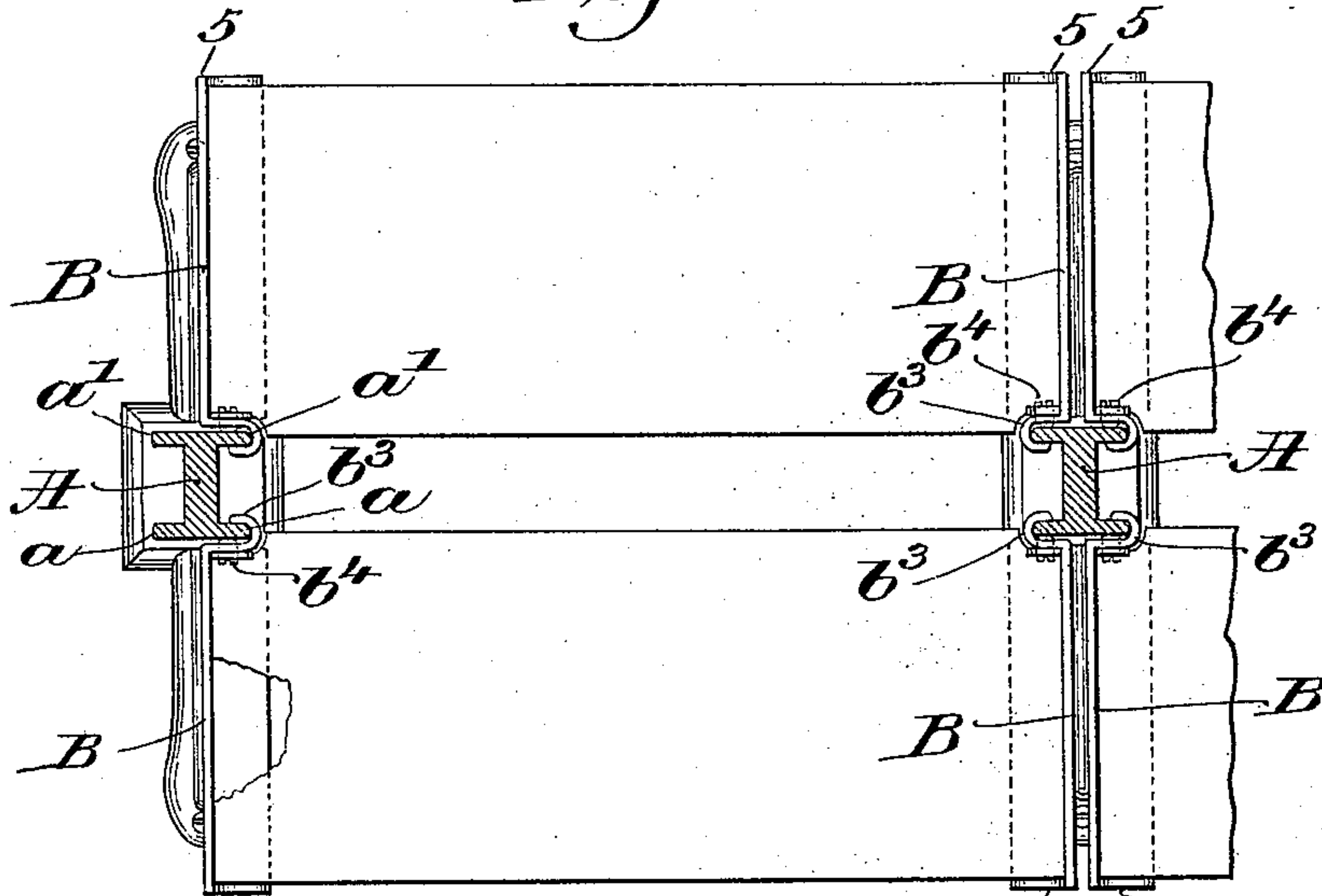


Fig. 4.

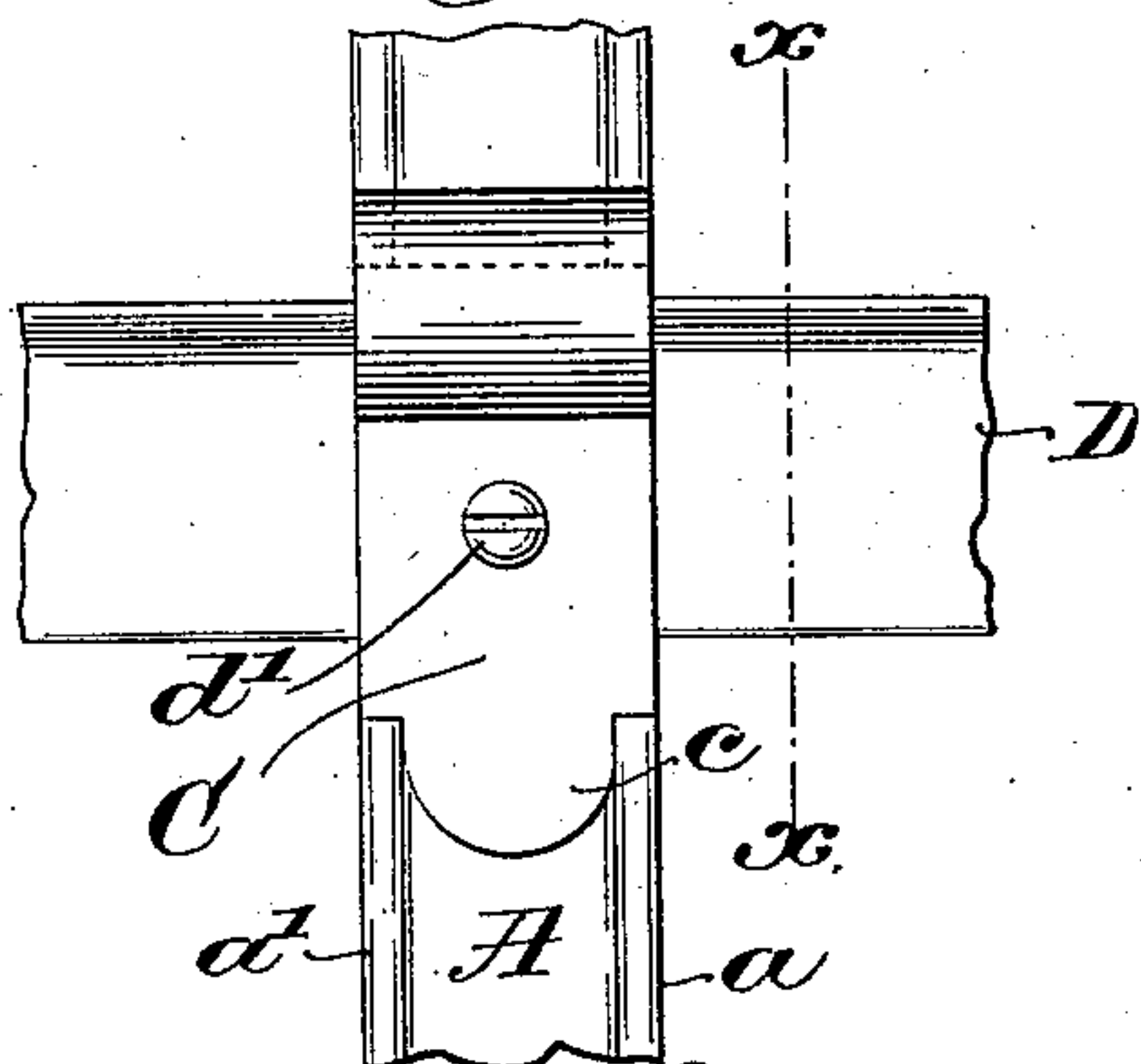


Fig. 5.

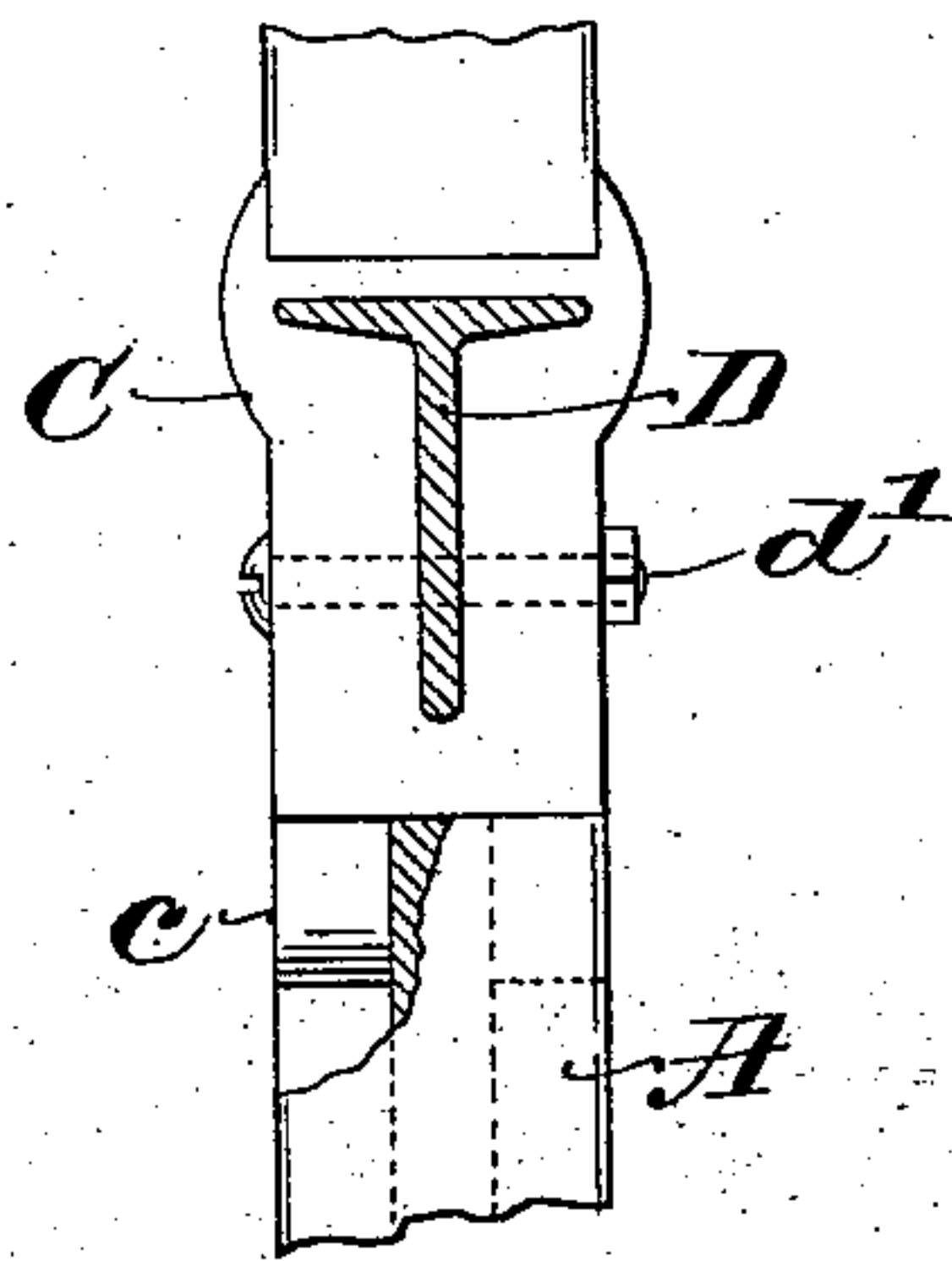


Fig. 6.

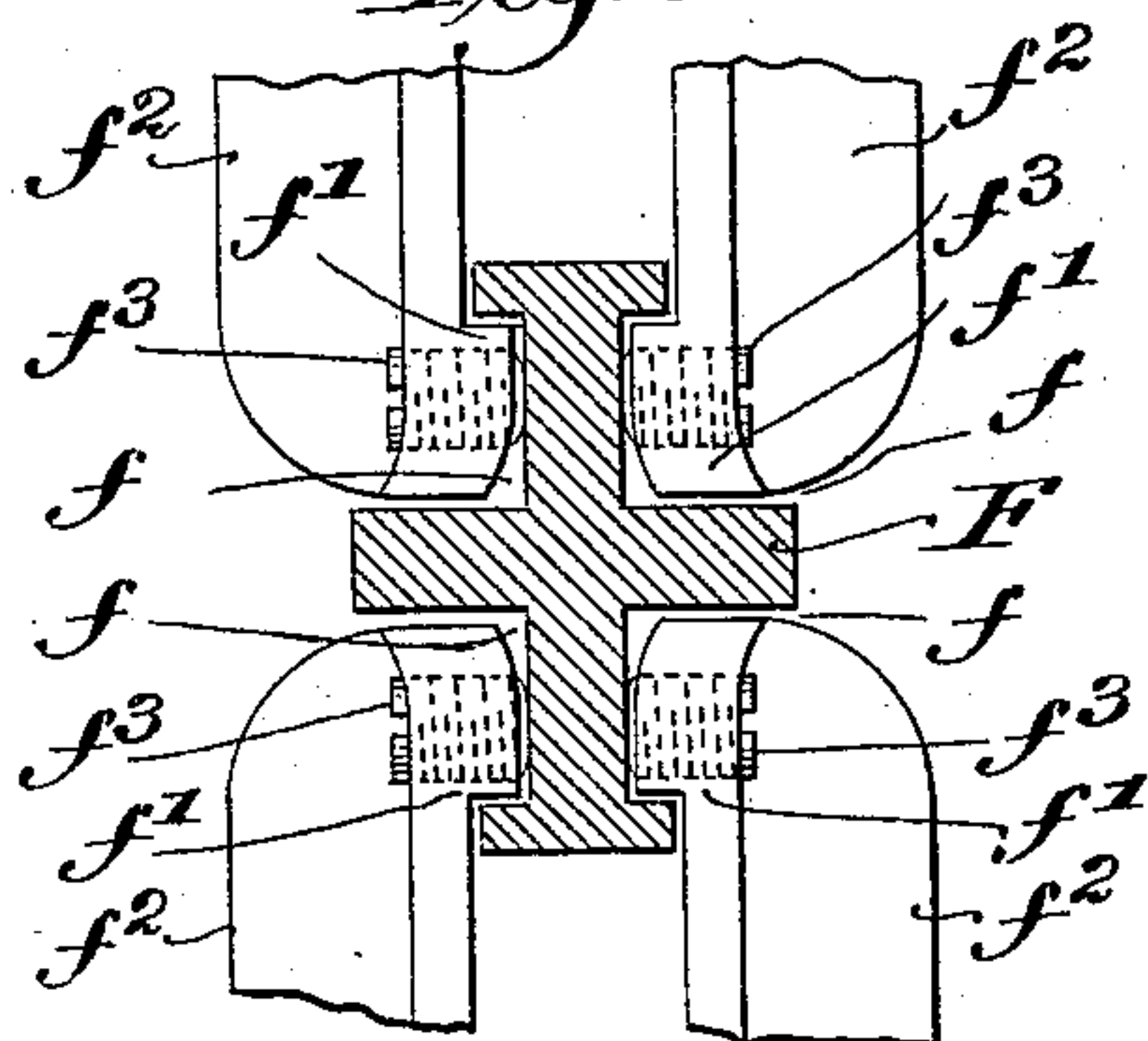
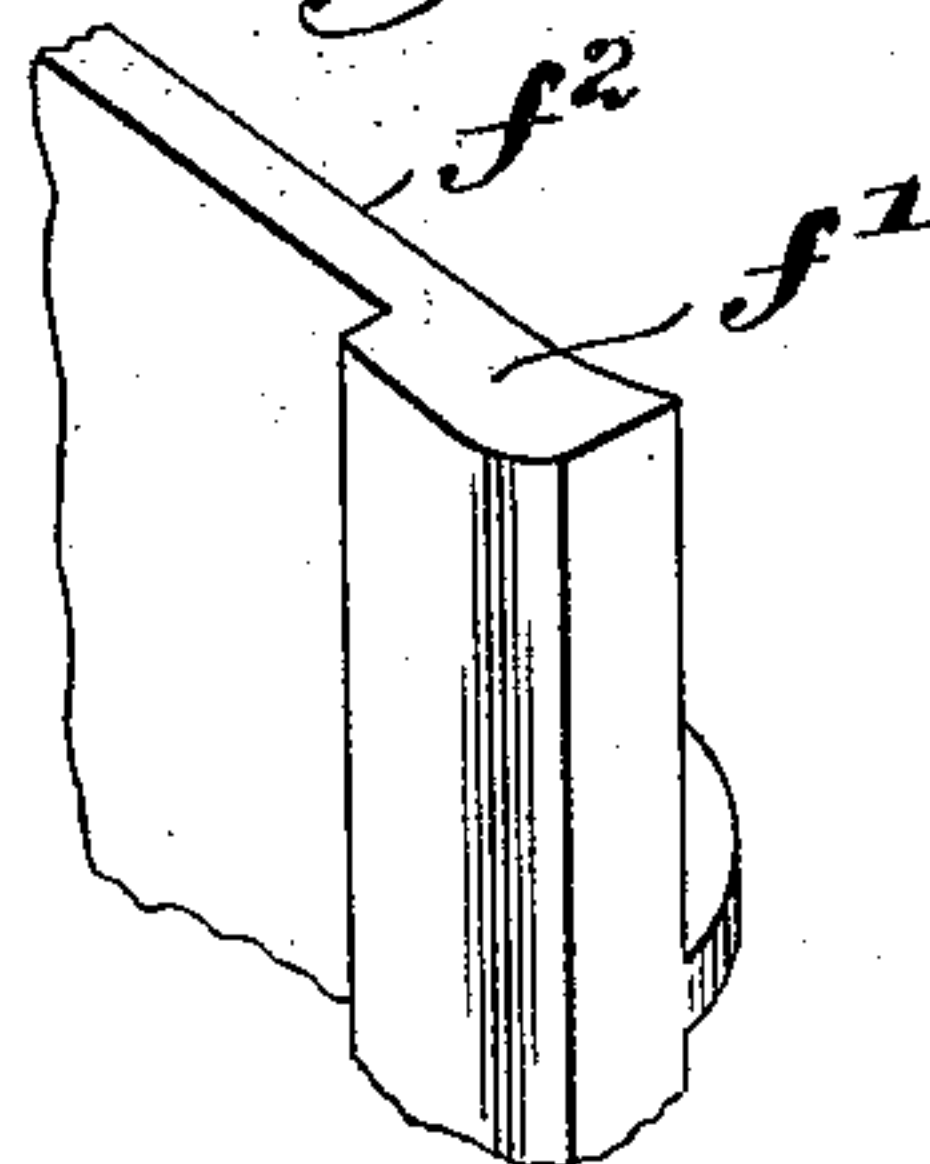


Fig. 7.



Witnesses.

Edward F. Allen

Thomas Drummond.

Inventor.

Charles B. Godfrey.

by Crosby & Gregory. attys.

UNITED STATES PATENT OFFICE.

CHARLES B. GODFREY, OF MILFORD, MASSACHUSETTS.

ADJUSTABLE SHELF-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 540,435, dated June 4, 1895.

Application filed December 14, 1894. Serial No. 531,850. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. GODFREY, of Milford, county of Worcester, State of Massachusetts, have invented an Improvement in Adjustable Shelf-Supports, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention relates to adjustable supports for book and other shelves of the class wherein are employed a series or row of standards upon which the shelf brackets are clamped in adjusted position. In book stacks
15 the shelves, (of which there are usually several lines one above the other,) at one or both sides of the row or series of standards, are made in sections, each section or shelf reaching from one standard to the next and supported at its ends upon brackets adjustably
20 mounted on the standards as referred to. The two abutting shelves or sections meeting at and supported by any single standard, should not, in practice, be supported upon a single
25 bracket common to both, for it is frequently necessary to vary or separate the height of the several shelves in different sections, that is, between different standards, to accommodate books or goods of varying height, hence
30 the necessity for providing at each intermediate standard and at both sides of the same, that is, at the front and back, two brackets for each line of shelves, each bracket sustaining one end of a shelf and permitting the latter to be independently adjusted.

35 Prior to my invention the shelf brackets have usually been provided at their inner ends next the standards, with projections to rest in suitable ratchets on the supporting
40 standards, or fitted to slide in and between the inturned edges of vertical dovetailed or equivalent grooves or channels in the faces of the standards, set screws or wedges being employed to clamp the brackets in adjusted
45 position.

50 In practice, the width and the weight of the standards should be as little as possible, to reduce the space lost between the ends of the shelves and to reduce the cost, and the objection to either of the constructions referred to is that the intermediate standards,—which are those between the end standards of the

row or series,—must usually be of double width, in order to support the two vertical series of shelf brackets which sustain the facing ends of adjacent shelves, each vertical series of brackets requiring a separate groove, or a separate ratchet. To obviate this objection and to enable intermediate standards to be made as narrow as possible, and thus economize in space and cost, I have, in accordance with this invention, devised a system in which the shelf brackets are supported on and by and clamped at the sides of the standards instead of at the front and back faces thereof, said brackets being provided at one side only with laterally extended lugs or projections adapted to engage their respective standards, screws or equivalent devices serving to clamp the brackets in adjusted position upon the standards. By such a principle of construction I am enabled to apply and clamp four brackets at the same level, or at different levels, about a single standard, of a width not exceeding that of any other standard of the series.

Inasmuch as a shelf bracket engaging a standard or support at one side only, might, under certain conditions or with certain constructions, work loose laterally, I prefer to interpose between the two brackets sustaining any single shelf, a suitable strut, it may be the shelf itself, against the ends of which the brackets may be clamped, and which, by preventing lateral or vibratory movement of the brackets assists in holding the latter in position.

Other features of my invention will be hereinafter described and pointed out in the claims.

90 In the drawings, Figure 1, in perspective, shows a sufficient portion of a stack of shelving embodying my invention to enable the same to be understood; Fig. 2, a horizontal section through two of the standards, showing the preferred manner of clamping the brackets in adjusted position. Fig. 3, in perspective, shows one of the shelf-brackets detached; Fig. 4, a detail showing one of the supporting-headers in side elevation; Fig. 5, a section on the dotted line *xx*, Fig. 4; Fig. 6, a sectional detail illustrating a modification of my invention; Fig. 7, a perspective detail of the engaging end of the bracket, Fig. 6,

both to be hereinafter fully described; and Figs. 8 and 9, details illustrating yet another modified form of my invention.

In the particular embodiment of my invention, selected for illustration, A, A, are two of a series of any number of supporting standards, provided with suitable bases or feet A'. These standards, in the construction Figs. 1 to 5, inclusive, are I-shaped in cross section, there being, therefore, two flanges a , a , and a' , a' , at the two opposite or front and back faces a^2 , a^3 , of the said standards.

B, B', are the shelf-supporting brackets, the brackets B' being for the bottom shelf, and lacking the depending book guard b^2 , with which the brackets B are provided.

The brackets B, as shown, consist of shelf-supports b , with upwardly extended and depending book guard flanges b' and b^2 , which serve to maintain the books in upright positions. The upwardly extended guard flange b' of each bracket has its inner end turned or formed to present a laterally extended hooked lip b^3 , shown as standing at right angles to the line of the bracket and adapted to engage one of the flanges a , a , or a' , a' , at the front or back face of the standard, said bracket being provided with a suitable clamping device, herein shown as a clamping screw b^4 , by which to clamp the said lip upon said flange and thereby retain the bracket in vertically adjusted position. By applying the brackets in this manner, *i. e.*, at the side of the standard, instead of at the front or back, as heretofore, I am enabled to arrange four brackets in a group, see Fig. 2, at or near the same level, yet keep the standard as narrow as may be, and possess the requisite strength. Every fraction of an inch added to the width of the standard takes so much off the length of the shelves, hence the great advantage in applying the brackets at both sides of a single bar standard.

In Fig. 1, brackets of the several groups are shown at different levels, to accommodate books, &c., of different sizes.

The brackets B, B', engaging the standards at the side only, might, under certain conditions or constructions, slip off in the direction of the center of the shelf S carried by and between them. To guard against this, I make the shelves of such length that they serve as struts to prevent any substantial movement of the sustaining brackets toward each other, and in the preferred construction, the clamping screws or devices b^4 are inserted, and act, at such angle, as shown, that, when screwed in against the flange, the outer ends of the brackets, will be forced against the adjacent ends of the shelf carried by them, to thereby firmly wedge or clamp the said brackets between said shelf and the flanges of the standards, and effectually prevent slip.

In erecting book shelves in library and other halls, it is customary to arrange them in stack form, *i. e.*, built up of several tiers. My present invention comprehends a header

C, shaped at its bottom to fit upon the top of a standard A, and for that purpose, being in the present instance, provided at two of its opposite sides with depending ears c , c , adapted to drop between the flanges a , a' , at opposite sides the said standard, and thereby retain said header in position. The header C, at its top is fitted to receive and support the bottom of the standard of the next series of shelves above, as best shown in Figs. 1 and 4.

In the embodiment of my invention here shown, the headers C are each provided with a transverse opening of suitable shape to receive the T or other shaped girders D, upon which the elevated or mezzanine floor d rests, a bolt d' passed through the header and girder, serving to lock the two together.

In Figs. 6 to 9 inclusive I have shown modified forms of my invention for clamping the brackets to their standards.

Referring to Figs. 6 and 7, the standard F, as shown, has each of two of its opposite faces provided with a pair of grooves or channels f , f , to receive the lateral lips f' , on the shelf brackets f^2 , the screws f^3 enabling said brackets to be forced back against the ends of the shelves held by the brackets, to thereby frictionally retain the latter in vertically adjusted position. The brackets f^2 are held at one edge of the standard and partly by the shelf, so that only a single width standard is at any time needed.

In Figs. 8 and 9, the standard is provided at its opposite side with grooves n , n , to receive the flanges n' , on the ends of the shelf brackets n^2 , the latter being provided at the same side as the said flanges, with lugs n^3 , in which are threaded the clamping screws n^4 , adapted to act upon the standard, as shown in Fig. 8. The operation is precisely as in Figs. 1 and 2.

So far as known to me, I am the first to employ a single series of like standards with shelf-supporting brackets clamped thereon, one bracket on each of the end standards, and two brackets at opposite outer sides of the intermediate standards with shelves carried by the brackets; and also the first to devise a standard or support provided at opposite sides with oppositely extended flanges, with shelf-supporting brackets applied to and at the flanged sides of said standard and at substantially right angles to the said flanges, and provided at one of their sides only with one or more projections engaging the flanges at their respective sides of the standard, with suitable clamping devices for clamping the brackets in position. I am also the first, so far as I am aware, to employ means acting upon a standard or support to clamp the end of the bracket adjacent said standard upon the latter, and at the same time impart lateral or side movement of the bracket toward and to grip the shelf end, and I therefore consider myself entitled to claim these features broadly, without reference to the particular features of construction and without restricting the inven-

tion to any particular use to which the shelves may be put.

In practice the shelves S, at their ends, are cut away at their under sides to receive the shelf supports *b* of the brackets B, the under side of the shelf then coinciding with or being in the same plane as the under side of the said shelf supports. Looking at the outer or front edge of a shelf so formed the cut away ends would appear objectionable to the sight, and to conceal the same and also to provide a stop which shall prevent the shelf being drawn outwardly from its support on the bracket, I have provided the latter with a stop *b*^x, shown as a web connecting the shelf support at its upper side with the upper book guard *d*'.

The header will of course be adapted for the particular type of standard and floor girder employed, without departing from the invention involved therein as set forth in the claims.

I claim—

1. A vertical standard, provided at opposite sides with oppositely extended flanges, and shelf-supporting brackets applied to and at the flanged sides of said standard and at substantially right angles to the said flanges, and provided at one of their sides only with one or more projections engaging the flanges at their respective sides of the standard, and means to clamp the said brackets in vertically adjusted position, substantially as described.

2. A vertical standard provided at opposite sides with oppositely extended flanges, shelf-supporting brackets applied to and at the opposite flanged sides of the said standard at substantially right angles to the said flanges, and provided at one of their sides only with one or more projections engaging the flanges at their respective sides of the standard, and means acting in or near the line of the length of the bracket and accessible and operable from the front of the standard to clamp the said brackets in vertically adjusted position upon said standard, substantially as described.

3. A vertical standard provided at opposite sides with oppositely extended lateral flanges, shelf-supporting brackets applied laterally to and at the opposite, flanged sides of said standard, and at substantially right angles to the said flanges, and provided at their sides away from the ends of the shelves with one or more projections engaging said flanges; and means to clamp the said brackets upon the said stand-

ard in vertically adjusted position, substantially as described.

4. The combination with a standard flanged at its opposite sides of brackets provided at one of their sides with lips, hooked to extend around the edges of and engage opposite faces of said flanges, and set screws threaded in said hooked lips to clamp said brackets in vertically adjusted position on said standard, substantially as described.

5. The combination with two standards, of shelf-supporting brackets adjustably secured at one of their ends to the respective standards, a shelf sustained by and between said brackets, and means acting upon the said standards to clamp the ends of the brackets adjacent the standards upon the latter and at the same time impart lateral or side movement of the brackets toward and to grip the shelf ends, substantially as described.

6. The combination with a standard, of a shelf bracket adjustably secured at one of its ends thereupon, a shelf sustained at one end by said bracket, and means acting upon the standard to clamp the adjacent end of said bracket thereupon and at the same time impart to the free end of the said bracket a swinging movement about the said standard as a fulcrum, toward and to grip the end of the said shelf, substantially as described.

7. The combination with a shelf bracket-sustaining-standard, of a header resting upon the top thereof, and provided with an opening penetrating the same laterally above the end of said standard, a second supporting-standard sustained upon and by the said header and above the said opening, and a floor-supporting girder extended through the said opening and secured to the said header, substantially as described.

8. A single series of like standards; shelf-supporting brackets arranged thereon, and clamping devices to clamp said brackets in position on said standards one such bracket on each of the end standards, and two such brackets on opposite outer sides of the intermediate standards, and shelves carried by said shelf brackets, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES B. GODFREY.

Witnesses:

FREDERICK L. EMERY,
JOHN C. EDWARDS.