

No. 619,416.

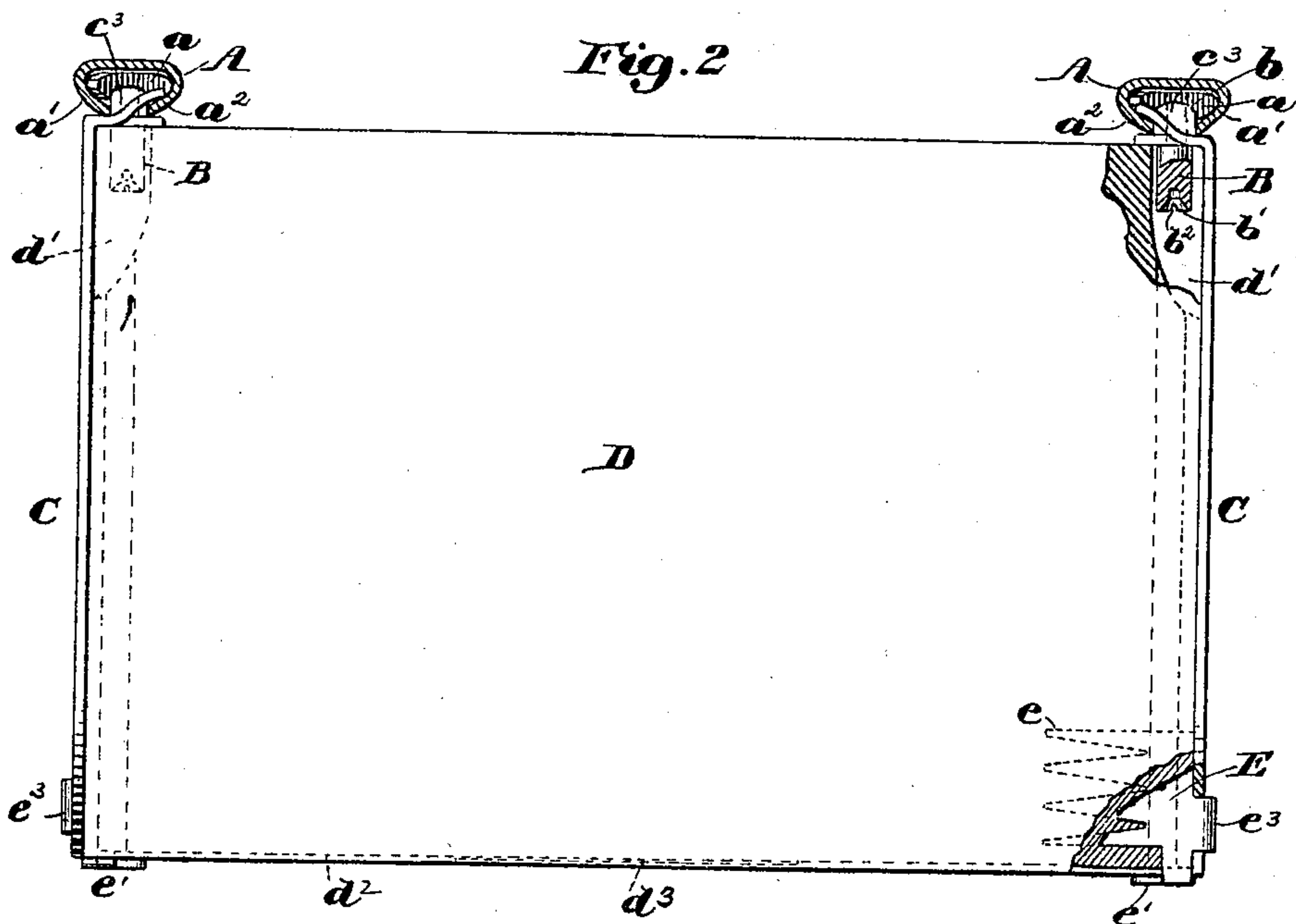
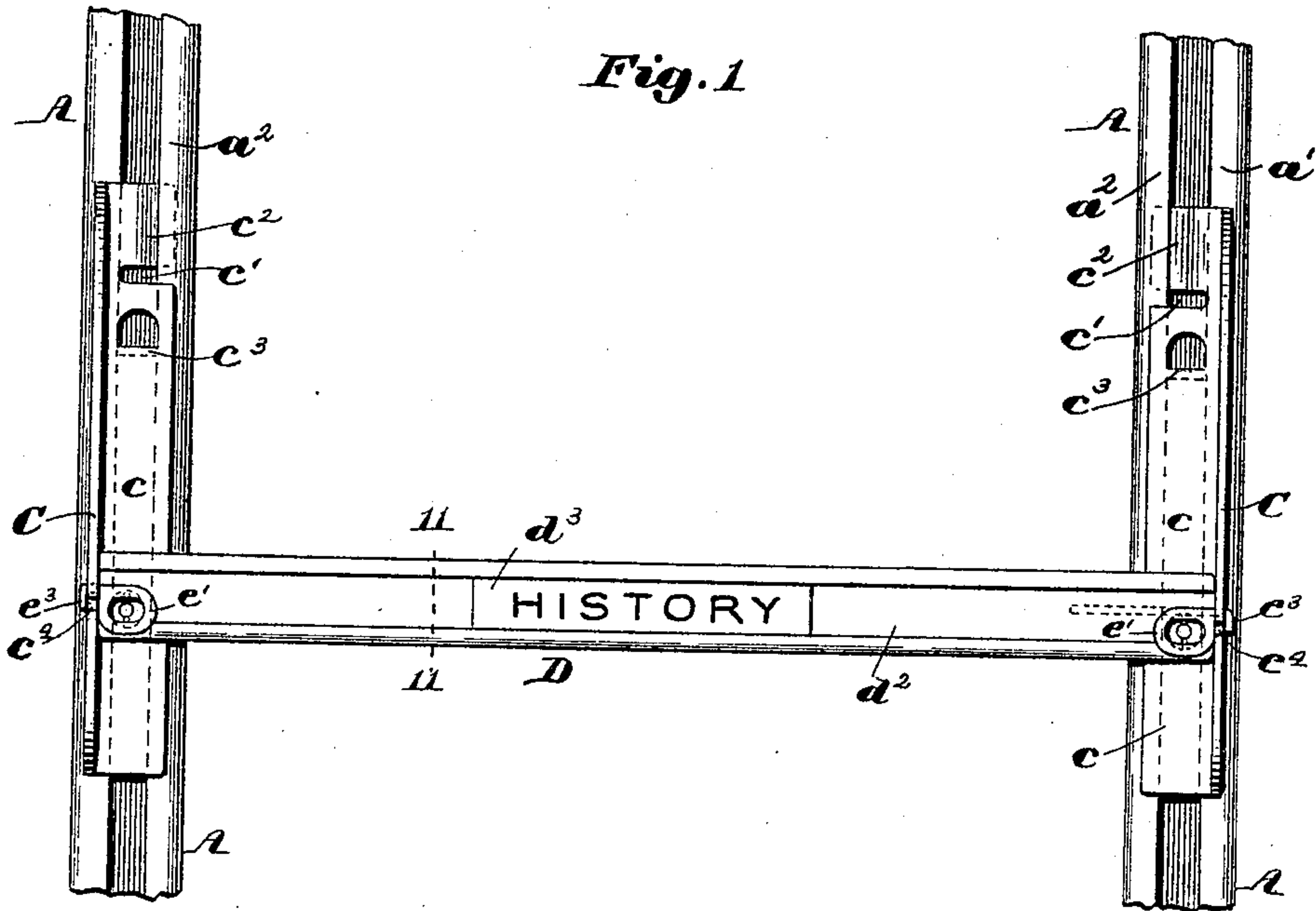
Patented Feb. 14, 1899.

D. E. HUNTER.
ADJUSTABLE SHELVING.

(Application filed Sept. 3, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
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Inventor:
David E. Hunter,
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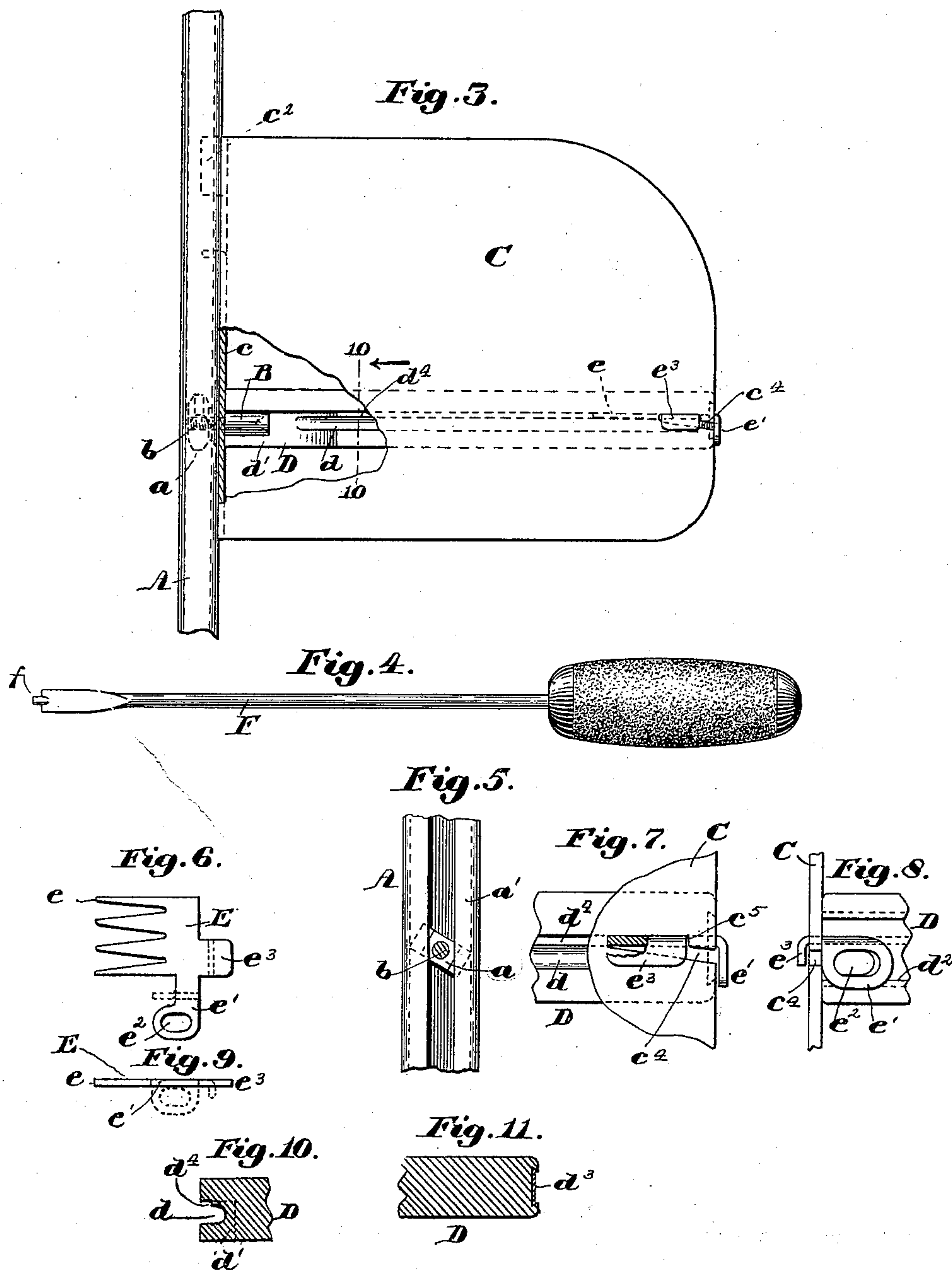
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UNITED STATES PATENT OFFICE.

DAVID E. HUNTER, OF CAMBRIDGE, MASSACHUSETTS.

ADJUSTABLE SHELVING.

SPECIFICATION forming part of Letters Patent No. 619,416, dated February 14, 1899.

Application filed September 3, 1897. Serial No. 650,468. (No model.)

To all whom it may concern:

Be it known that I, DAVID E. HUNTER, of Cambridge, county of Middlesex, State of Massachusetts, have invented an Improvement in Adjustable Shelving, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is an improved book-shelf or shelf for libraries or other similar structures.

My invention has for its principal object the provision of a simple and strong support capable of adjustment in any position along a library standard or frame and a wooden shelf provided with several novel conveniences and firm and substantial in construction and appearance for readily securing or removing the former from the latter.

The details of construction of my invention will be more fully pointed out in the following description, reference being had to the accompanying drawings, and the invention will be more particularly defined in the appended claims.

In the drawings, in which I have shown preferred embodiments of my invention, Figure 1 is a broken view of the library stack or standards, showing my invention in front elevation applied thereto. Fig. 2 is a horizontal section showing the various parts of my invention in top plan, portions thereof being broken away in order to give a clear understanding of the detailed construction. Fig. 3 is a broken side elevation. Fig. 4 is a similar view of a tool to be used in connection with my invention. Fig. 5 is a sectional detail illustrating the manner of use of the adjusting nut or clamp. Fig. 6 is a plan view of the clip as it is struck up before it is bent into its final shape, the latter being indicated in dotted lines. Figs. 7 and 8 are respectively side and front elevations of one corner of the shelf, showing the securing-clip in operative position thereon and illustrating its relation with the bracket, the latter being shown in fragmentary details. Fig. 9 is a side elevation or edge view of the clip as shown in Fig. 6. Fig. 10 is a fragmentary section of the shelf, taken on line 10 10, Fig. 3. Fig. 11 is a similar section taken on line 11 11, Fig. 1.

Any suitable standard A may be used to

accommodate my present invention, provided it has a dovetailed recess extending longitudinally thereof, and for purposes of illustration I have herein shown a simple metal standard rolled over at its edges, as is clearly shown in section in Fig. 2. In this standard will operate a clamping-nut *a*. (Shown in plan in Fig. 2 and in elevation in Fig. 5, the latter figure showing the nut partly turned in order to indicate that it may be removed from the standard when desired by giving it a quarter-turn therein.) Coöperating with this nut is a supporting-lug B, threaded at its inner end *b* to enter the nut *a* and clamp the parts in position, as presently explained. This nut clamps between it and the standard A a bracket C, constituting one important feature of my invention. This bracket is herein shown as formed from a single piece of sheet metal, having its body portion bent transversely at its rear edge, as shown at *c*, in order to rest against the front sides *a'* *a*² of the standard *a*, the upper end of this flange *c* being cut at *c'*, and the brace *c*² formed thereby being deflected rearwardly, as shown in Fig. 2, in order to enter within the standard A, behind the edge *a*² thereof, with a greater supporting strength to the shelf, as will appear more fully farther on.

At some convenient portion of the flange *c* I prefer to punch rearwardly a portion thereof in order to form a spur or tongue *c*³ having substantially the same width as the slot in the standard in order to move freely therein up and down as the bracket is moved and prevent the latter from twisting therein, although in this connection I wish to remark that various of the details of my invention already and presently to be described may be omitted or other features substituted within the scope of my invention.

At its forward end the bracket C has a slit *c*⁴ of peculiar shape in substantial alinement with the supporting-lug B, this slit extending upwardly and rearwardly from the front edge of the bracket, as clearly shown in Fig. 7, and having within the edge of the bracket a horizontal portion forming with said edge a shoulder *c*⁵.

The shelf proper, D, herein shown as wood, is provided along each end with a kerf or groove *d*, extending from the front edge to the

rearedge of the shelf, the rear portion thereof being entirely cut away from the bottom of the shelf, as indicated at d' in dotted lines, Fig. 10, in order to receive the supporting-lug B therein.

Preferably the shelf D will also be grooved at along its front edge in order to provide a dovetailed way d^2 to receive a label d^3 , as shown in Figs. 1 and 11, it being well understood that considerable expense and labor are usually required in supplying a library with label-holders in order to indicate the classification thereof or the contents of any particular shelf.

I have herein shown the groove d as having an offset d^4 at its upper side, this offset being provided for convenience in driving into the wood a special clip E, (shown in detail in Figs. 6 to 9,) intended to be driven into the shelf just above the groove d to occupy a position as is indicated more particularly in Figs. 1 and 2. This clip may be made of sheet-steel or any other sheet material of sufficient strength and rigidity and will preferably be provided with a plurality of prongs e in order to enable it to enter readily into the wood and hold therein with firmness. At its front side the clip will preferably be provided with an ear e' , perforated at e^2 to be bent over the front edge of the shelf, as is clearly shown, said bent-over portion constituting an escutcheon for the groove d in order to receive the tool F, (see Fig. 4,) the latter being provided to enter the groove d along the end of the shelf and tighten or loosen the supporting-lug B as it is desired to adjust the shelf, the latter having a conical opening b' to receive a projection f of the tool or screw-driver and a slit b^2 to enable the latter to turn it. At its side or end the clip has an arm e^3 to be bent downwardly at its free end in order to hold the shelf on the bracket.

Having described the details of my invention, it will be understood that the parts are assembled as shown in Figs. 1 to 3 and that the operation thereof is as follows: Supposing it is desired to remove the shelf shown in position, this is done simply by raising the rear end of the shelf off from the supporting-lugs B, the openings d' permitting free upward movement thereof in order to remove the shelf, but serving merely to receive the supporting-lugs B and properly position the shelf thereon when the latter is in place. Accordingly the rear end of the shelf D is lifted sufficiently to tip the clip E, so that it will come in line with the slanting slit c^4 , freeing the forward edge of the clip e^3 from the shoulder c^5 and leaving the clip free to slide downwardly and out of the slit, thereby entirely unlocking the shelf from its brackets. A shelf may be placed in position by reversal of this operation—that is to say, it is simply placed between the two brackets C C and slid forward at an angle, so that the two clips at its ends enter the slits c^4 until they have cleared the shoulders c^5 , whereupon the shelf

is dropped onto the lugs B and with the one operation is properly positioned and also locked.

My construction is extremely simple, strong, and permanent.

The shelf cannot possibly be loosened, nor can it sag or drop from its place, for the reason that it is locked securely, and beyond accidental removal, and is solidly supported at its extreme front edge, the supports B being of unusual rigidity, for the reason that they cooperate with the standard, by means of the clamp-nuts a , to clamp all the parts together solidly, and receiving, as they do, the load of the shelf immediately adjacent the standard there is extreme strength on account of the short leverage.

Besides the strong supports at B and the resistance of the flange c I have provided, however, the braces c^2 , which strengthen and supplement the supporting-lugs B, in order to resist the unusual strains—such, for instance, as the stepping of an attendant upon the shelf in order to reach a higher shelf.

When it is desired to adjust the shelf up or down, all that is necessary is to insert the special tool or screw-driver F at the escutcheon e' and loosen the supporting-lugs B slightly from their nuts a , so that they may be slid along the standards up or down to the required adjustment, whereupon they are readily tightened again by the screw-driver F. This adjustment is very quickly accomplished and prevents any unauthorized meddling or tampering with the shelves.

I do not claim the clamping-nuts c^3 , with their driving-screw action in relation to the standard and bracket, inasmuch as the equivalents thereof are old; but I do claim the supporting-lugs B in connection therewith.

Various substitutions and changes in arrangement and combination of parts may be resorted to without departing from the spirit and scope of my invention.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a standard, a shelf, and a shelf-bracket, of a supporting-lug independent of said bracket, extending a short distance from said standard, and provided with adjusting means to adjust it along the standard, said shelf being recessed at its lower edge to receive said lug and said shelf resting in direct contact with and on said projecting lug and being supported thereby, substantially as described.

2. The combination with a standard and a shelf, of a supporting-lug extending a short distance from said standard, and provided with a screw connection for adjusting it along said standard, said lug having a conical recess at its forward end to guide a tool into proper position therein, and a transverse slit across said end to receive said tool to turn the lug, substantially as described.

3. As an article of manufacture, a shelf-bracket comprising a vertical body portion

provided at its rear edge with a transverse vertical flange, and a transverse vertical brace bent obliquely rearwardly relatively to said flange to engage a grooved standard, and the
5 bracket being provided with means to engage a shelf, substantially as described.

4. As an article of manufacture, a shelf-bracket having a transverse vertical flange at its rear edge, and a vertical brace above said
10 flange and bent rearwardly obliquely thereto, said flange being provided with a guiding-tongue struck from it rearwardly, and said bracket being provided with supporting means for a shelf, substantially as described.

15 5. As an article of manufacture, a shelf-bracket comprising a vertical body portion provided at its rear edge with securing connections, and having an oblique or upwardly-inclined slit extending inwardly from its front
20 edge, said slit having an offset portion to form a locking-shoulder to cooperate with a securing device on the shelf, substantially as described.

6. As an article of manufacture, a library-
25 shelf provided along its front edge with a dovetailed groove formed in the shelf itself to receive a label, substantially as described.

7. A shelf having at its ends adjacent the front thereof clips projecting therefrom and
30 downwardly bent at their free ends, combined with supporting-brackets provided with means to engage said clips and thereby support the shelf at its front edge, substantially as described.

35 8. The combination with a standard provided with supporting-lugs in the form of forwardly-projecting enlargements adjustable up and down therealong, of a shelf supported at its rear edge by resting directly on
40 and against said lugs, and means to support said shelf at its front edge, substantially as described.

9. The combination with a standard, provided with adjustable supporting-lugs, of a
45 shelf supported at one edge by said lugs, said shelf having a groove adjacent one end to receive a tool to operate said lug in its adjustment, a clip at the opposite edge of said shelf projecting therefrom and downwardly bent
50 at its free end, and a bracket or support for

said edge, said bracket having a slit provided with a shoulder, within which said clip may be entered and interlocked against said shoulder, substantially as described.

10. The combination with a standard, provided with adjustable supporting-lugs, of a shelf supported at one edge by said lugs, said shelf having a groove adjacent one end to receive a tool to operate said lug in its adjustment, a clip at the opposite edge of said shelf
60 projecting therefrom and downwardly bent at its free end, and a bracket or support for said edge, said bracket having a slit provided with a shoulder, within which said clip may be entered and interlocked against said shoulder, said clip extending forwardly to the edge
65 of the shelf and having a perforated downturned portion thereat to form an escutcheon for said groove, substantially as described.

11. The combination with a wooden shelf, 70 of a securing-clip, said clip having prongs to be driven into the end of the shelf, and being provided with a portion extending from said shelf and having its free end bent downwardly adapted to overhang and lock against a supporting-bracket, substantially as described. 75

12. The combination with suitable standards, of brackets, and a shelf, said shelf and bracket being provided with interlocking securing means consisting of an elongated projection on one and a slit in the other, said
80 slit having a narrow entrance to receive said projection flatwise, and provided within its entrance with an enlargement to permit a limited twisting movement of said elongated
85 projection, said slit and projection being relatively positioned in said parts to permit the entrance of the projection into the slit only when the shelf is deflected from its horizontal position, and said enlargement extending to
90 receive said elongated projection when the shelf is brought into a horizontal position, substantially as described.

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

DAVID E. HUNTER.

Witnesses:

GEO. H. MAXWELL,
FREDERICK L. EMERY.