

G. HOLDEN.

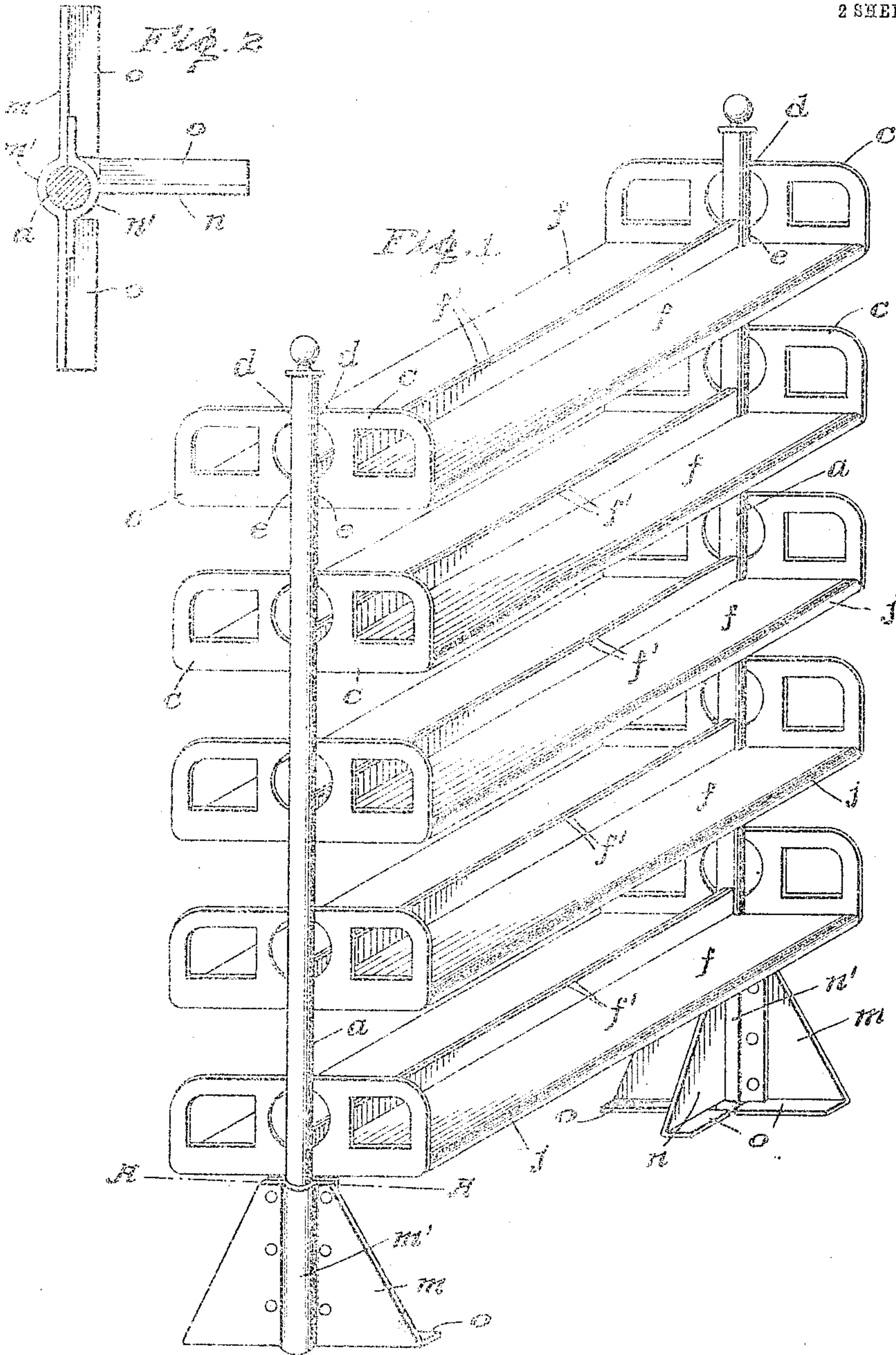
SHELVING.

APPLICATION FILED APR. 8, 1907.

940,017.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 1.



Witnesses

David Webster, Jr.
A. M. Kelly.

Inventor

G. Holden

554

Attorney

G. HOLDEN.
SHELVING.

APPLICATION FILED APR. 3, 1907.

940,017.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 2.

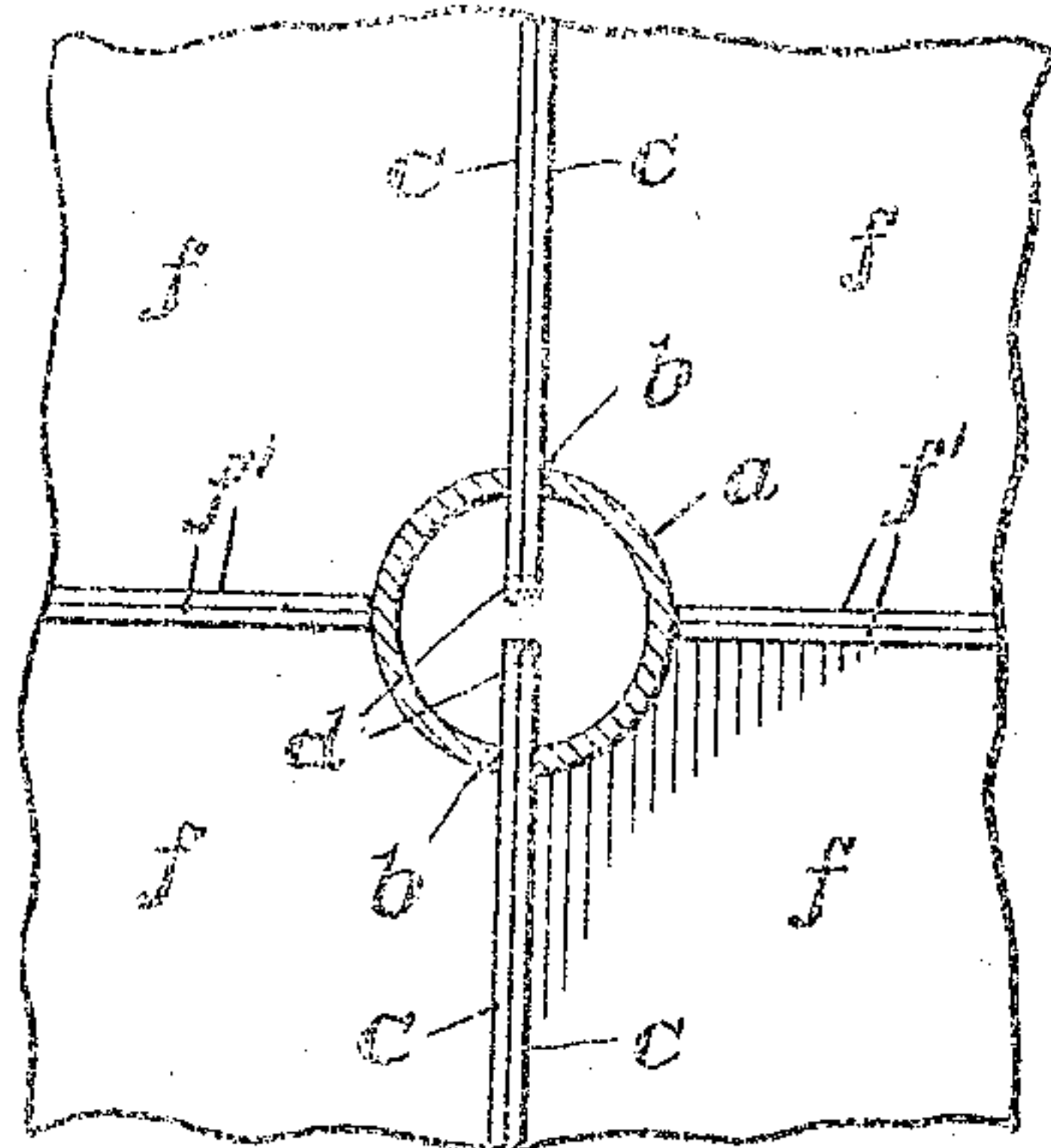
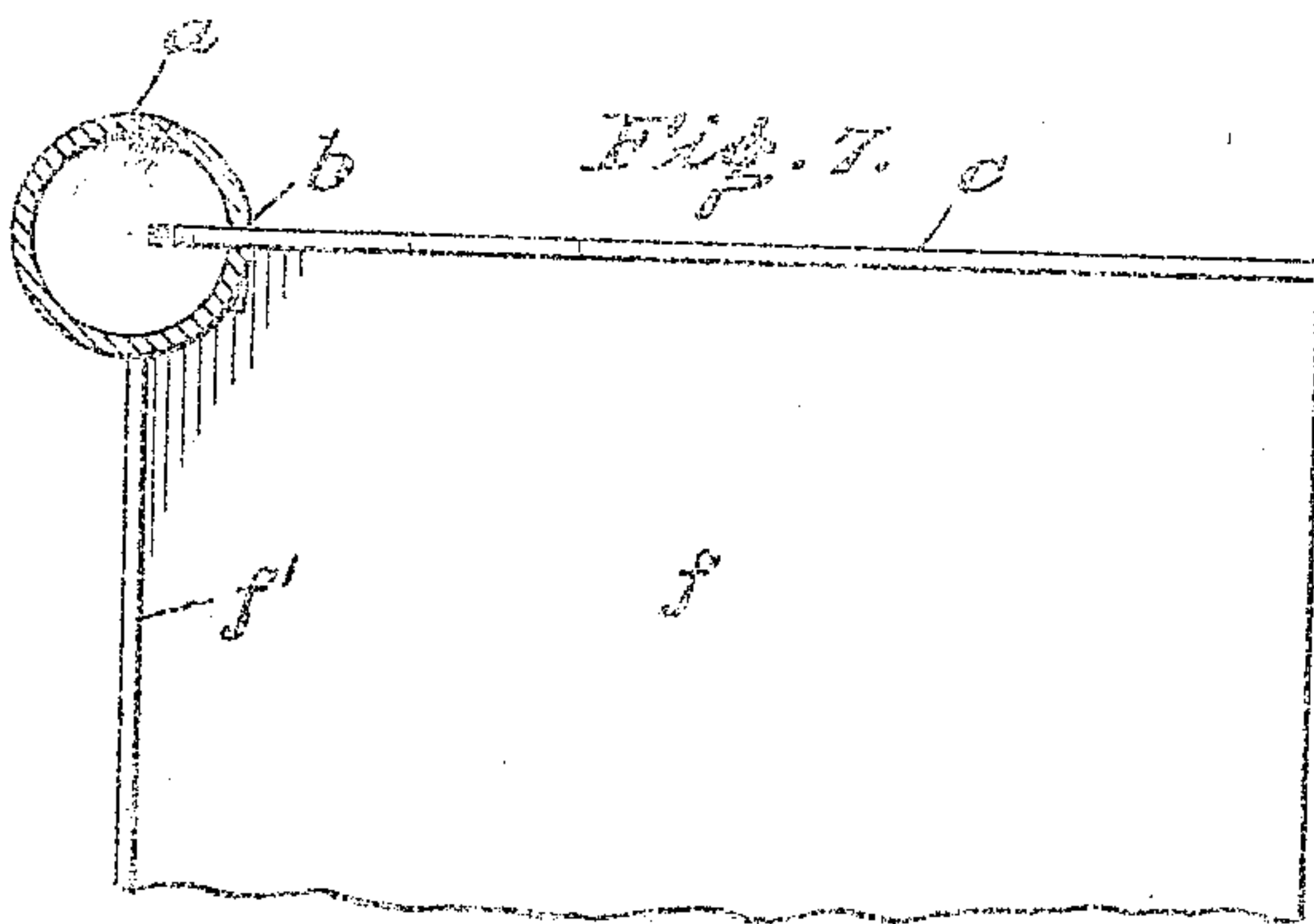
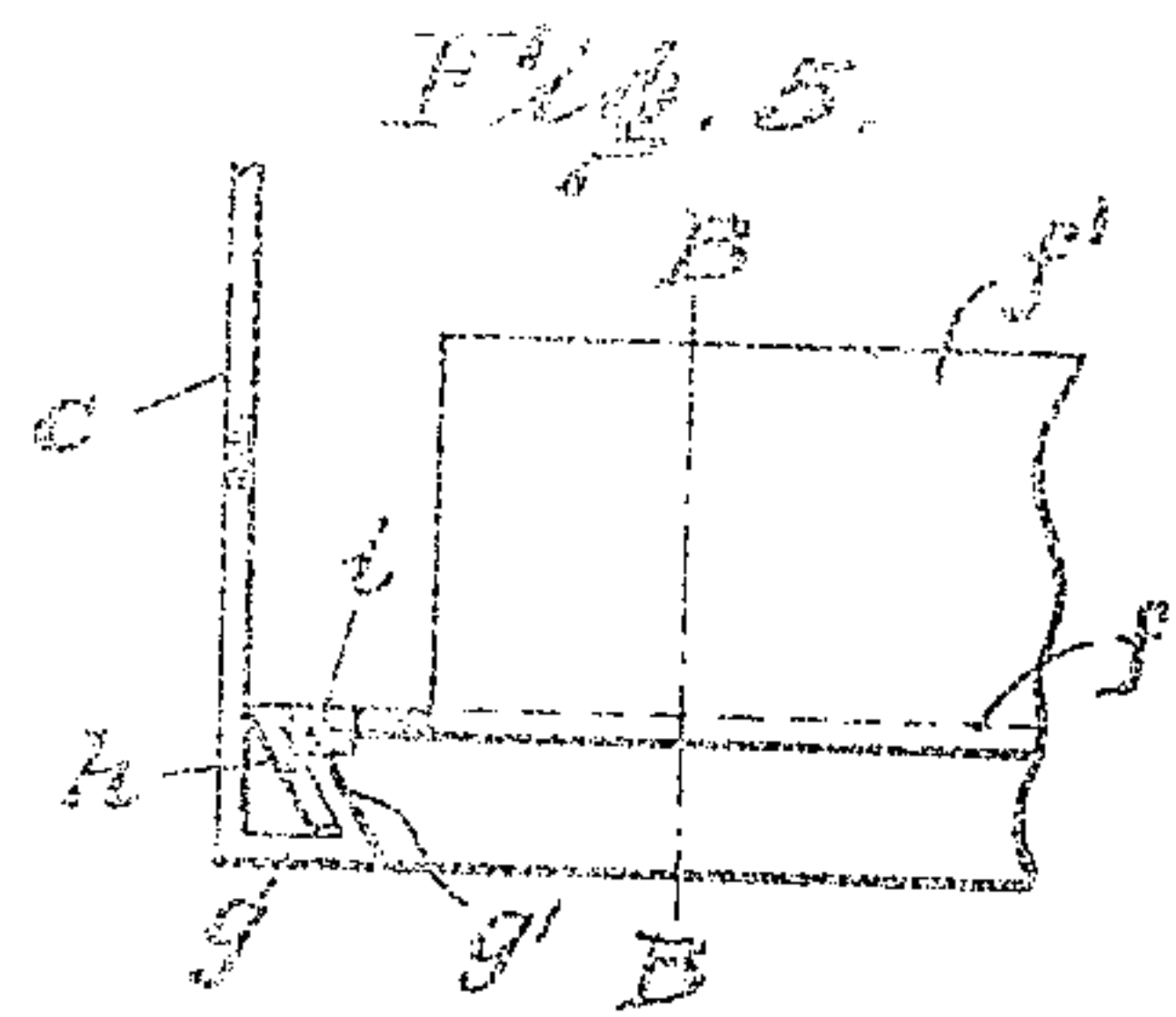
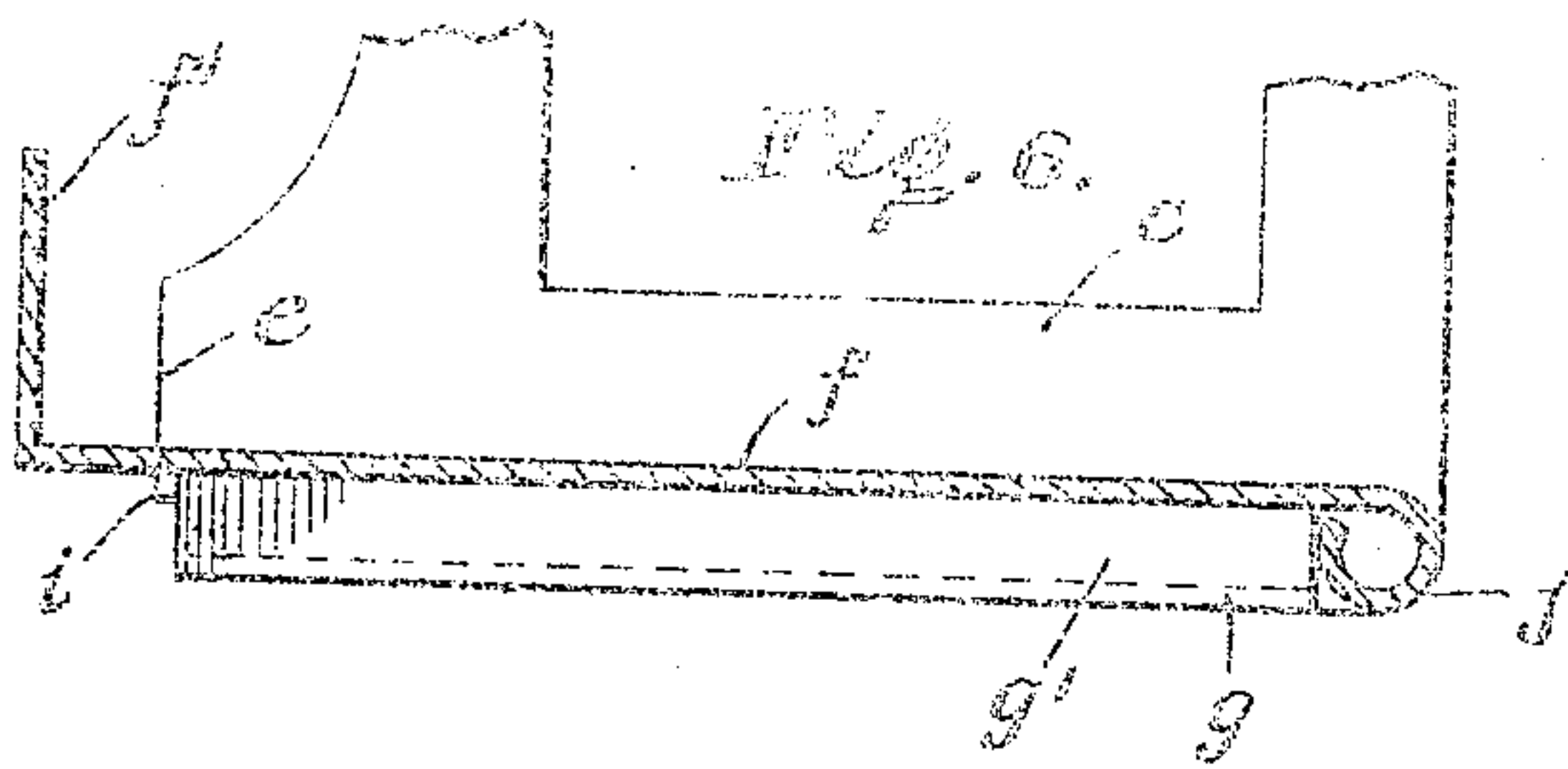
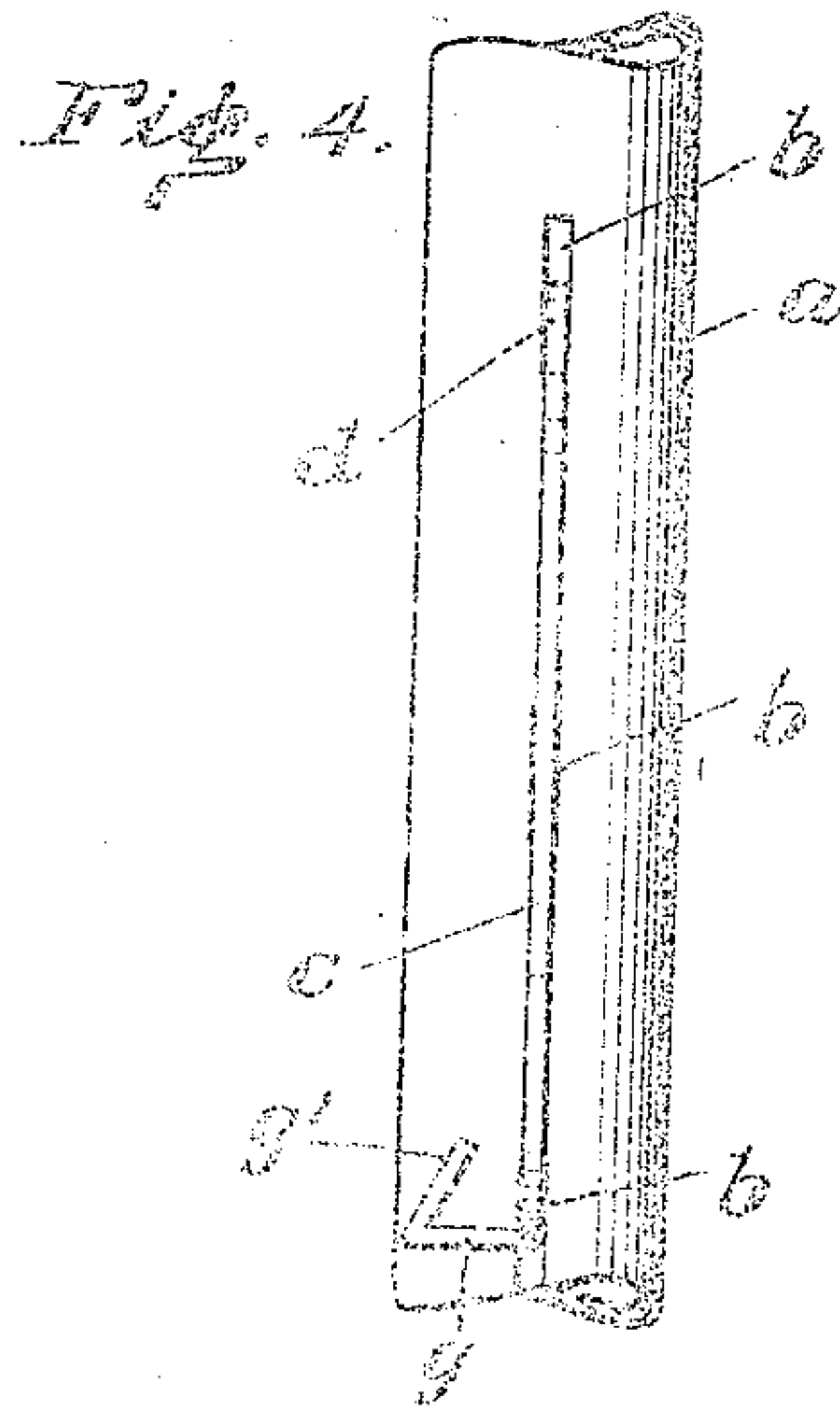
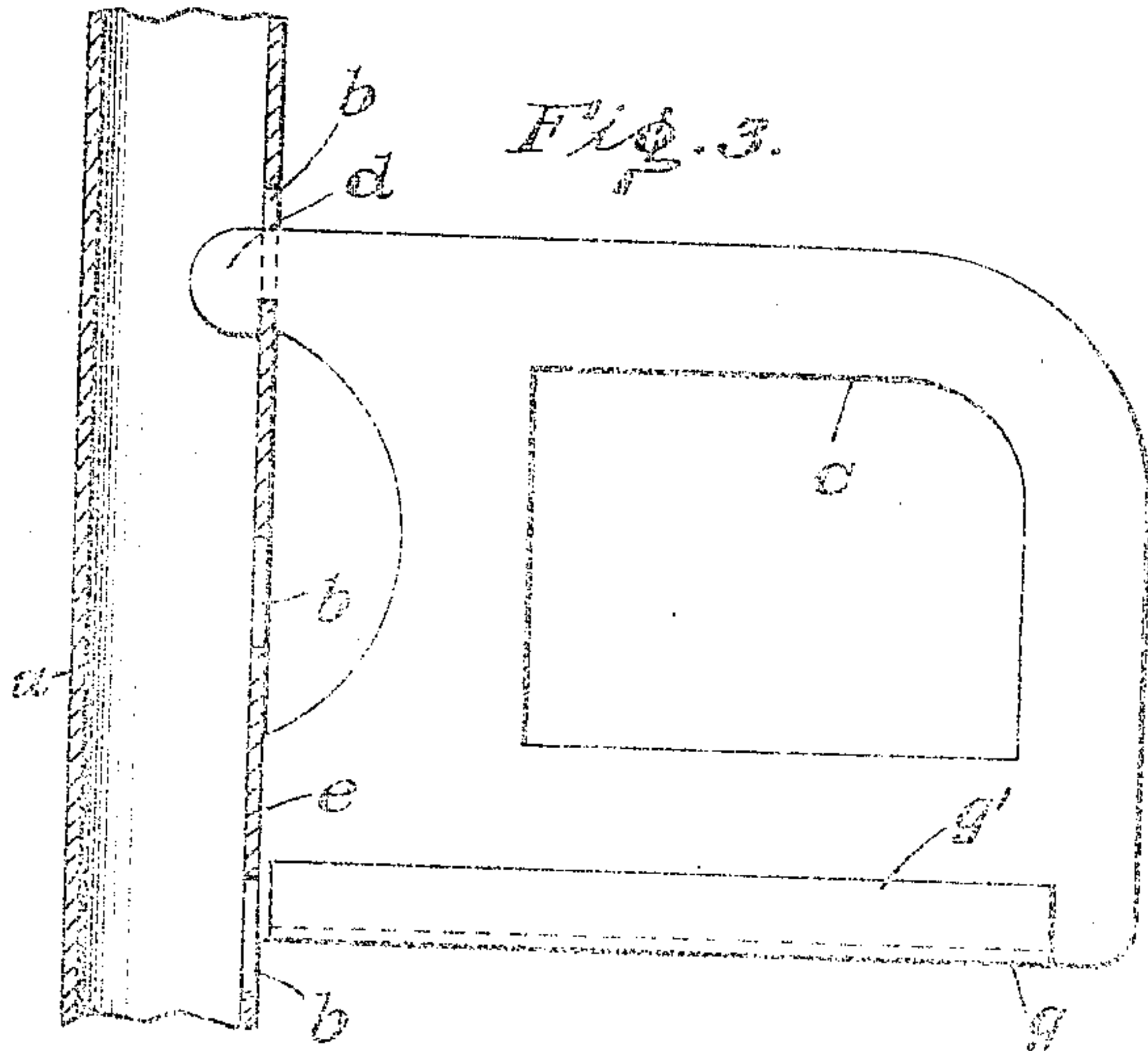


Fig. 8. Inventor

Witnesses:

Paul Webster
A. M. Kelly

504

George Holden
Attorney

UNITED STATES PATENT OFFICE.

GEORGE HOLDEN, OF MERCHANTVILLE, NEW JERSEY, ASSIGNOR TO MERRITT & COMPANY, A CORPORATION OF PENNSYLVANIA.

SHELVING.

940,017.

Specification of Letters Patent. Patented Nov. 16, 1909.

Application filed April 3, 1907. Serial No. 366,123.

To all whom it may concern:

Be it known that I, GEORGE HOLDEN, of Merchantville, county of Camden, and State of New Jersey, have invented an Improvement in Shelving, of which the following is a specification.

More particularly my invention relates to a combination of parts, preferably of metal, which may be easily assembled together to form a shelf structure without the use of screws, bolts or other similar positive fastenings.

It also relates to the combination of such shelf structures together to form a unit of shelving, and to the combination of such units in the formation of extended shelving.

It also relates to features of construction by which the shelving is rendered especially adapted for book racks or shelves in libraries, and to features of adjustment by which space may be economized.

In the drawings: Figure 1 is a perspective view of a section of double shelving embodying the invention; Fig. 2 is a horizontal section on the line A—A of Fig. 1; Fig. 3 is a vertical section of one of the vertical posts showing one of the end supports carried thereby; Fig. 4 is an end elevation of one of the end supports with its post; Fig. 5 is a rear elevation of part of one of the end supports and shelf piece showing the preferred form of interlocking joint; Fig. 6 is a longitudinal vertical section on the line B—B of Fig. 5; Fig. 7 is a horizontal section of one corner of the shelving showing the post, end piece and part of one shelf piece; and Fig. 8 is a similar view illustrating the connection of successive sections.

a are the vertical supporting posts which are provided with a series of openings *b* to receive the end supports *c*. These end supports are provided at the upper part of the inner edge with a hook or notched extension *d* which is inserted in one of the openings *b* in the post with the notch engaging the lower edge of the metal of the post at the opening; the lower portion of the inner edge of the end piece rests against the surface of the post as shown at *e*. The end pieces *c* when applied to the post extend radially from it.

f are the shelf pieces which are supported at their ends by the end pieces or supports, and for this purpose the end pieces are provided at their lower edges on the inner side with sup-

porting flanges *g*. To secure greater rigidity I prefer to provide these flanges and the ends of the shelf pieces with interlocking means. As shown, the edge of the flange *g* is turned up at an angle as at *g'*, and the ends of the shelf pieces are provided with complementary angular flanges *h*. An end piece is slipped on each end of the shelf with the flanges *h* inside of the angular edges *g'* (see Fig. 5), and to prevent disengagement I provide small lugs *i* at the inner ends of the flanges of the shelf ends which are adapted to snap over the edges *g'* of the end pieces. Other means of uniting the shelf and end pieces may be employed, or the shelf and end pieces may be integral.

In erecting the shelving two posts *a* are employed and the end pieces are attached to these posts by hooking the portions *d* in the openings *b*, as has been described. Each shelf portion with its end pieces constitutes a shelf section and as many of such sections may be attached to the posts, one shelf above another, as may be desired. To allow for variation in the number of shelves and the adjustment of the vertical distance between them, I provide the posts with a series of openings *b*, so that adjustment may be made by changing the points of suspension of the shelf ends.

The shelf portions *f* are preferably provided with an upturned flange *f'* at the back. This is desirable for book shelves as it affords a stop and support for the front edge of the hook. The front edges may be suitably finished or bent over as shown at *j* (Fig. 6). This bent-over edge also forms a stop for the front ends of the angular interlocking flanges of the end pieces, which will thus be locked between the edge *j* at the front and the lugs *i* at the back.

The most desirable form of book shelving is one in which the shelves extend on each side from the central vertical plane of the posts; this is readily obtained by means of my construction, by similarly arranging end pieces *c* and shelves *f* on the opposite side of the posts as shown in Fig. 1. The shelf flanges *f'* of shelves in the same horizontal level will then be arranged back to back and will form a longitudinal dividing partition to keep each row of books in position on the proper shelf portion. It is also a special advantage of this construction that while

double shelving may thus be obtained, the shelves in each set are adjustable independently of the shelves in the other set, and the shelves in one set may be spaced farther
5 apart vertically than those in the other. This affords great economy of space in a library as it enables each shelf to be adjusted to the right height for the books it is to hold, and there need be no loss of space by using
10 unnecessarily high shelf spaces for short books.

To extend the shelving longitudinally a second set of end pieces *c* is attached to the outer post *a*, as shown in Fig. 8, and another
15 post *a* is added for the end pieces for the outer ends of the second set of shelves. The construction and manner of supporting are exactly the same, except that each intermediate post is made to support two sets of
20 end supports *c*, and for this purpose the openings *b* are made sufficiently wide to receive the two hooked ends *d*.

The posts *a* may be secured in any convenient manner; but for this purpose I have
25 shown a two part sheet metal pedestal. The two parts *m*, *n* are provided with vertical sockets *m'* *n'* which embrace the post. The two parts are then fastened together and are secured to the floor by flanges *o*.

What I claim is as follows:

1. In metallic shelving the combination of two end pieces each provided at the upper part of the inner edge with a portion adapted for suspending said end pieces and having an upturned angular flange *g'* on the inner
35 side of its lower edge, and a shelf piece provided at its ends with a complementary angular flange *h* adapted to engage the flange *g'* of the end pieces and having a lug *i* at one end adjacent to the angular flange *h*
40 adapted to engage the end of the flange *g'* of the end piece.

2. Shelving consisting of a pair of uprights, a pair of shelf supporting pieces extending radially in diametrically opposite
45 directions from each upright, and a shelf piece carried by the two supporting pieces on each side, the inner edges of said shelf pieces meeting in a vertical plane through the uprights and having an upturned flange
50 *f'* forming a longitudinal dividing rib between the shelf-pieces.

In testimony of which invention, I have hereunto set my hand:

GEO. HOLDEN.

Witnesses:

ROBERT O. FORSYTH,
DANIEL F. MALONEY.