

G. W. BOWERS.
CORNER FASTENER FOR FRAMES.
APPLICATION FILED SEPT. 13, 1907.

909,055.

Patented Jan. 5, 1909.

2 SHEETS—SHEET 1.

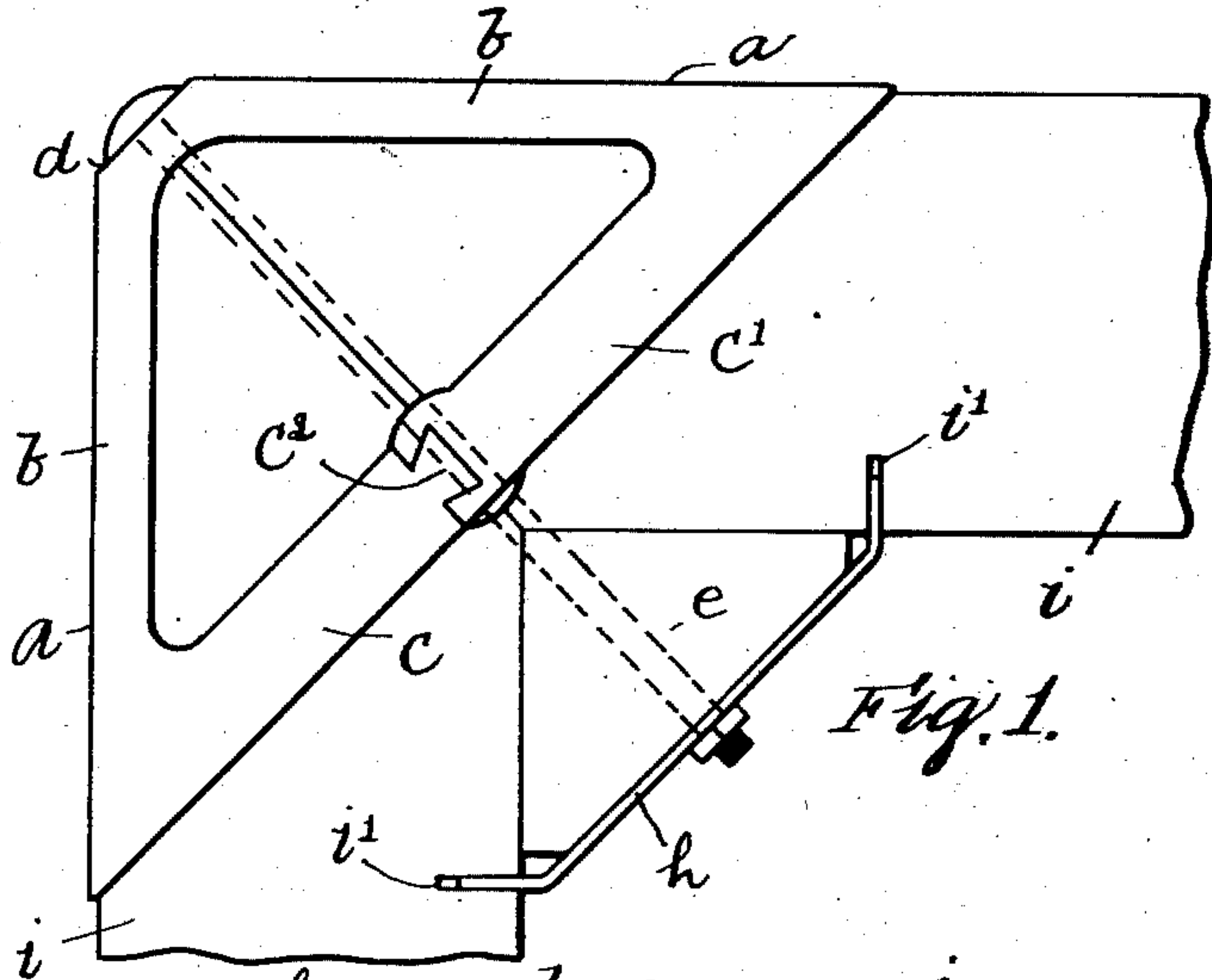


Fig. 1.

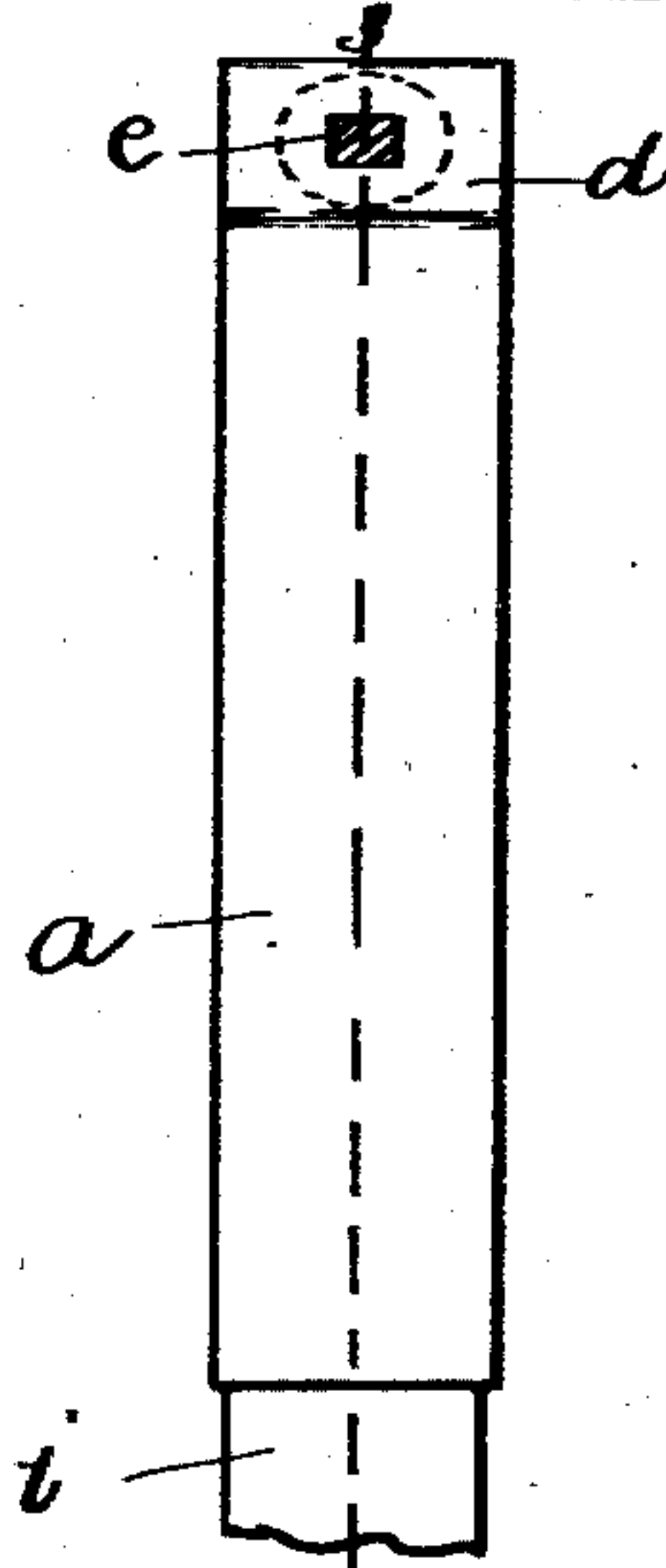


Fig. 2.

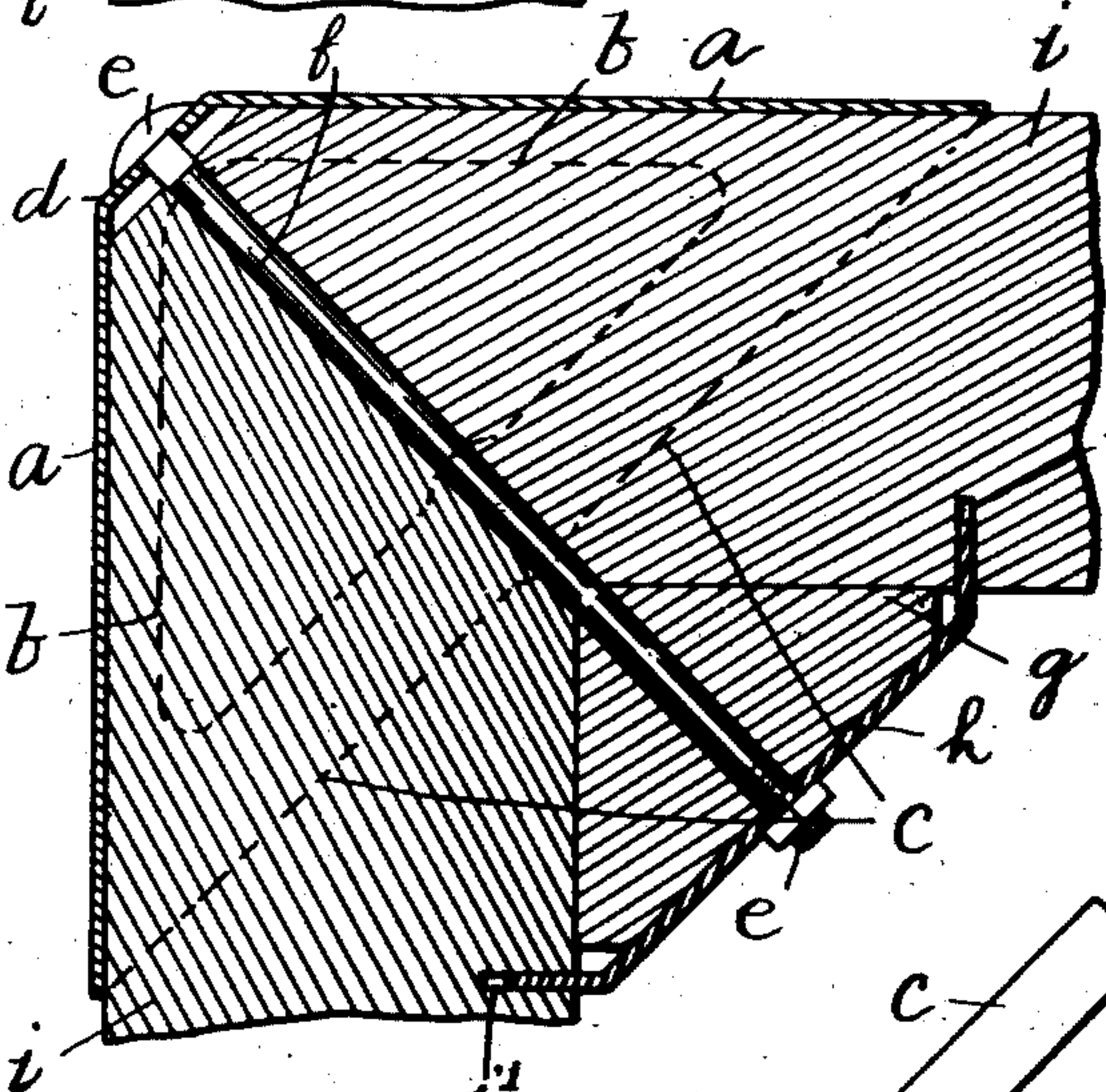


Fig. 3.

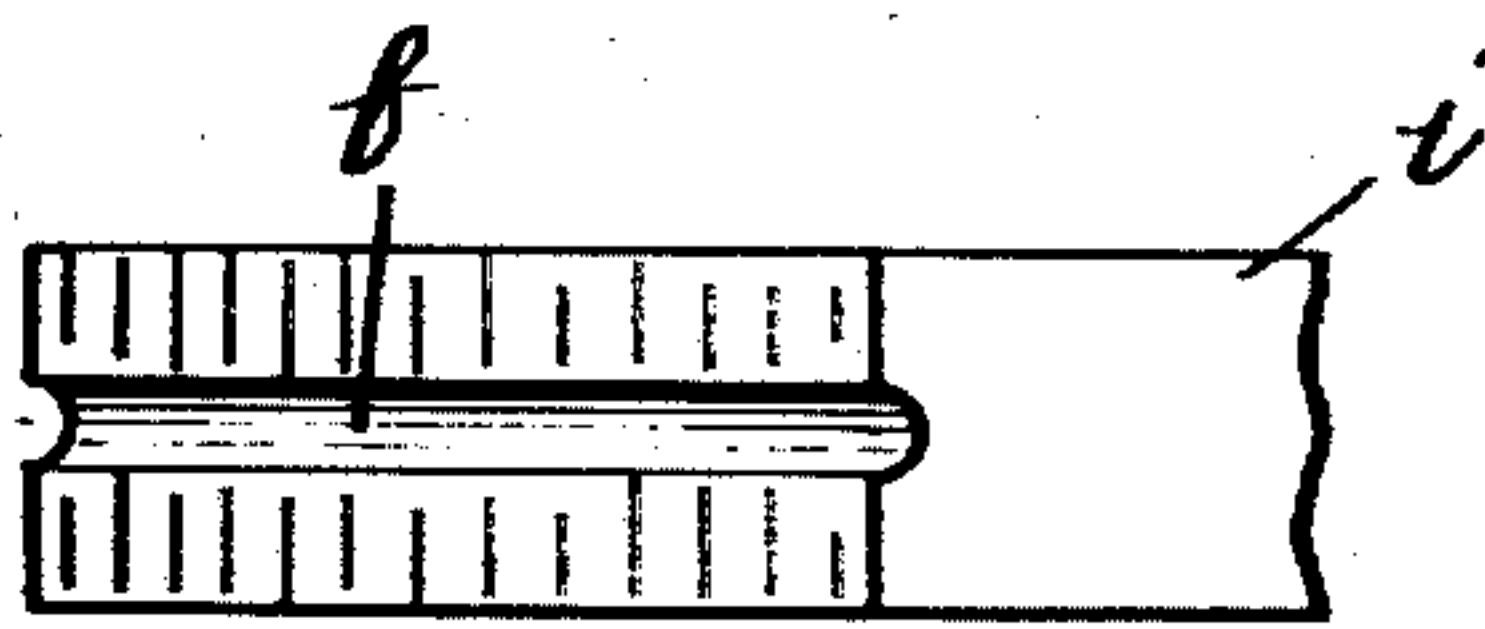


Fig. 4.

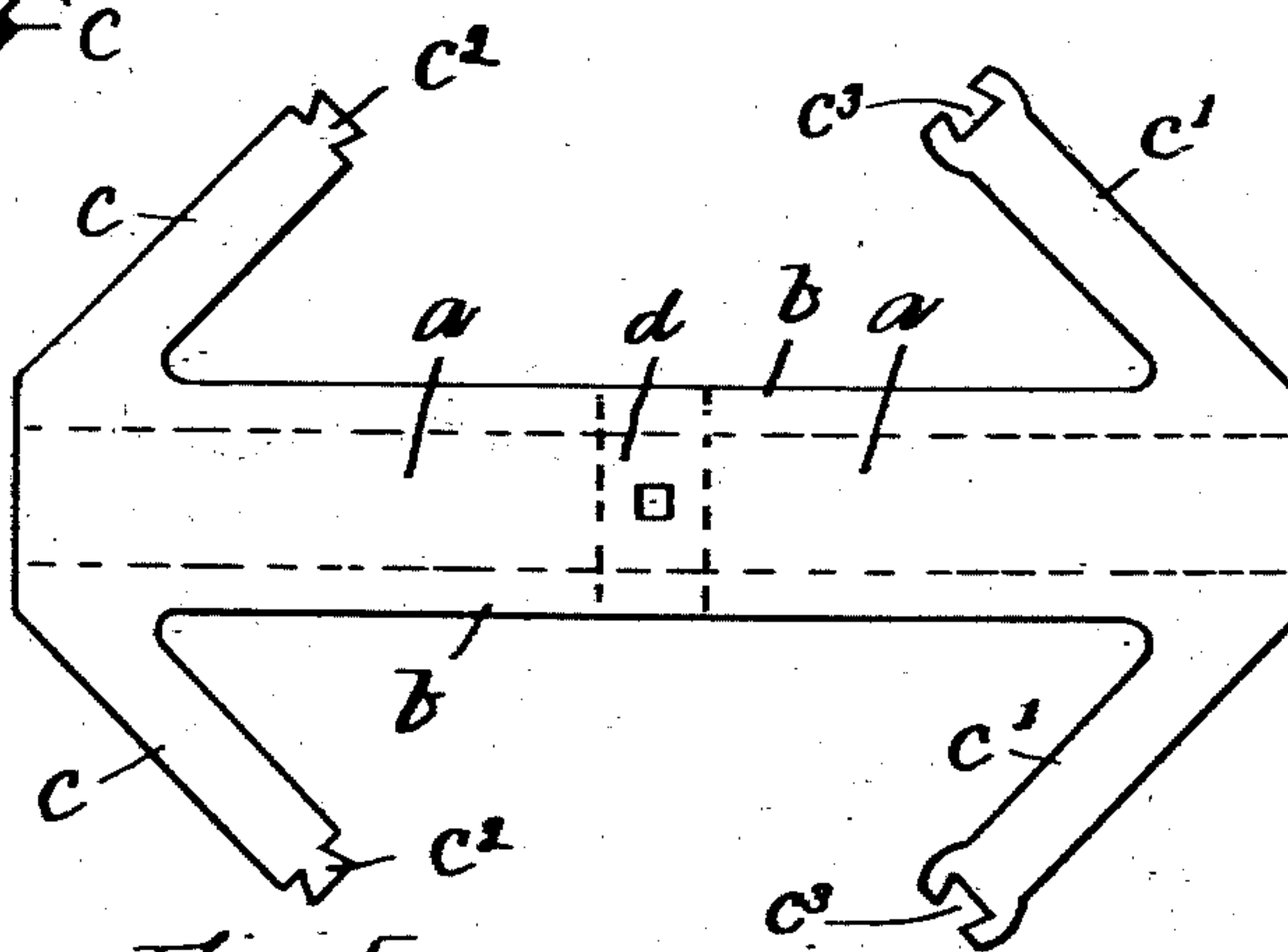


Fig. 5.

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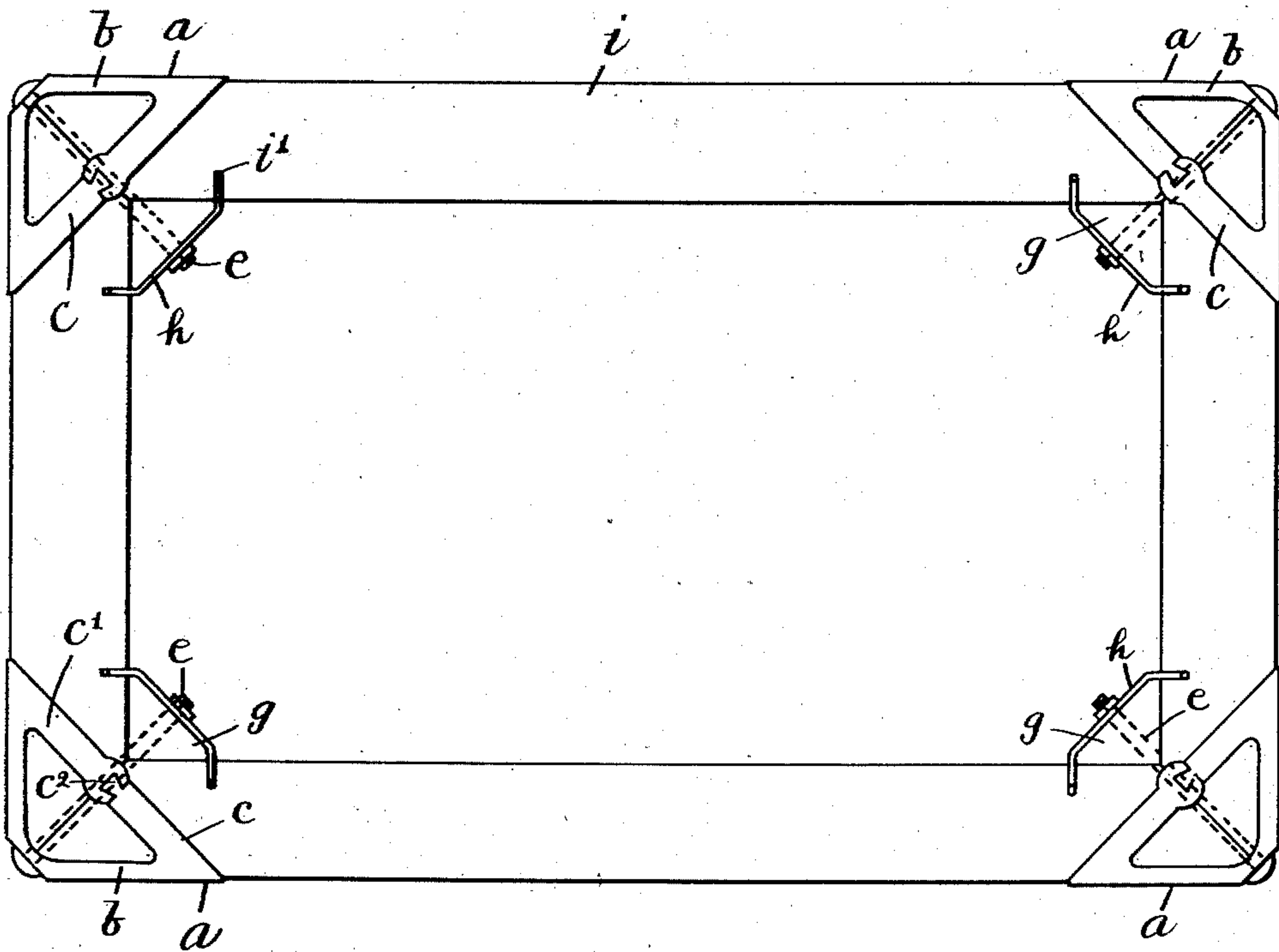


Fig. 6.

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UNITED STATES PATENT OFFICE.

GEORGE W. BOWERS, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO
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CORNER-FASTENER FOR FRAMES.

No. 909,055.

Specification of Letters Patent.

Patented Jan. 5, 1909.

Application filed September 13, 1907. Serial No. 392,657.

To all whom it may concern:

Be it known that I, GEORGE W. BOWERS, of Somerville, county of Middlesex, State of Massachusetts, have invented an Improvement in Corner-Fasteners for Frames, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

At the present time large wooden frames are used in tanneries, patent leather factories and like places for holding, stretching and otherwise treating skins. These frames are made large enough to support a whole or a half hide. The half hide size is approximately 11 ft. x 4 ft. 4 in. The frames, with the skins thereon, are carried from place to place, are put in hot ovens, and are laid out of doors in the sun, and as a result of much handling often get broken at the corners.

This invention has for its object to provide such large unwieldy frames with improved corner-locking and strengthening means, whereby they are especially well adapted to withstand the rough usage to which they are subjected. Also to provide means for securing the corner-fasteners to the frame, which are connected with the bars composing the frame and which act to draw said bars toward each other, into the corner-fasteners, until the mitered ends thereof abut. Also to provide means for securing the corner-fasteners to the frame, which is adjustable, to provide for tightening the parts in case of shrinkage of the bars composing the frame.

Figure 1, shows in front elevation one of the corner portions of a frame having corner-locking means embodying this invention. Fig. 2, is an edge view of the parts shown in Fig. 1. Fig. 3, is a section of the corner-supporting means taken on the dotted line 3—3, Fig. 2. Fig. 4 is a detail showing the end of one of the frame-bars. Fig. 5 is a view of the blank which is used in forming the corner-support. Fig. 6 is a front view of a complete frame embodying this invention.

The frame is quadrangular and consists of several bars *i*, mitered at their ends and abutted together to form a miter-joint. The frame is provided at each corner with a corner-fastener embodying this invention. The corner-fastener herein shown consists of a metallic blank of suitable shape which is struck up and bent to form two frame-engaging portions *a*, *a*, disposed at right angles to

each other, or such other angle as may properly conform to the shape of the corner of the frame, each portion having a pair of side flanges *b*, *b*, adapted to overlies the opposite sides of the frame-bars when the corner-fastener is adjusted thereon, and each portion also having at or near its extremity a pair of arms *c*, *c*, and *c'*, *c'*, which also overlies the opposite sides of the frame-bars. On each side of the frame-bars the arms *c*, and *c'*, extend toward each other, in a diagonal direction with respect to the frame-bars, and said arms are provided at their ends with interlocking portions, which engage each other to lock the two arms together. The interlocking ends on said arms, as herein shown, consist of dovetailed projections *c²*, *c²*, formed on the extremities of the arms *c*, *c*, and dovetailed recesses *c³*, *c³*, formed at the extremities of the arms *c'*, *c'*, which are adapted to receive the dovetailed projections on the arms *c*, *c*. The arms *c*, *c*, and *c'*, *c'*, of the two frame-engaging portions, when interlocked, are also preferably brazed, welded or otherwise secured to insure a rigid connection.

The interlocked arms at opposite sides of the frame-bars, constitute a pair of connecting-bars which connect the frame-engaging portions of the corner-fastener together and securely hold them in fixed relative positions.

The metallic blank, when struck up or formed into the form of corner-fastener herein shown, has also a flattened corner *d* which is apertured to receive a bolt *e*.

The mitered ends of the frame-bars are grooved, as at *f*, so that when any two bars are abutted together a cylindrical hole is formed between them for the bolt *e*, in line with the aperture in the corner of the corner-fastener.

Each frame-bar *i* has a notch *i'* in its inner edge, near its end, which extends into the bar for a short distance, and is herein shown as transversely arranged with respect to the bar, but it may be otherwise arranged.

A plate *h* is provided at each corner of the frame, which extends from bar to bar, and as herein shown, both ends of said plate are bent at a slight angle with respect to its intermediate portion to enter the notches *i'* in the bars. Each plate has a hole through it, in line with the hole through the mitered corner of the frame, for the bolt *e*.

In the triangular space provided between

the plate *h* and the frame-bars a small triangular block *g* of wood is or may be placed having a hole through it for the bolt *e*. As the nut on the bolt *e* is turned up the triangular frame-engaging portion and plate *h* are drawn toward each other, and the frame-engaging portion is drawn into firm engagement with the corner of the frame and the frame-engaging bars are moved toward each other until the mitered ends thereof firmly abut together. As the parts are thus drawn together the opposite ends of the plate *h* slide into the notches in the frame-bars more and more, but said notches are made so deep that the ends of said plate will not quite engage the bottoms thereof when the mitered ends of the frame-bars are firmly abutted together, so that in case said bars should afterwards shrink, they may be again moved toward each other by further turning up said nut.

The corner-fastener herein shown is therefore adjustable to compensate for shrinkage of the frame-bars.

I do not desire to limit my invention to the employment of a corner-fastener formed of a sheet metal blank, or to any specific shape of blank, as many other forms might be employed to embody my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A corner-fastener for frames, consisting of a metallic blank bent to form two frame-engaging portions disposed at right angles to each other, each having a pair of arms provided with interlocking ends, the arms of the two portions extending toward each other and when interlocked forming connecting bars which secure the two portions together, substantially as described.

2. A corner-support for frames consisting of a metallic blank bent to form two frame-engaging portions disposed at right angles to each other, each portion having a pair of flanges adapted to overlie the frame, and each portion having a pair of arms provided with interlocking ends, the arms of the two portions extending toward each other and when interlocked forming connecting bars which secure the two portions together at opposite sides of the frame, substantially as described.

3. A frame composed of bars having mitered ends abutted together, each bar having a notch adjacent its end and also having a groove at the end, a corner fastener for said frame made of a metallic blank bent to form a pair of frame-engaging portions disposed at right angles to each other and having a flattened corner provided with a hole through it, a plate extending from bar to bar across the corner, the opposite ends of which are arranged to enter but not to bottom in the notches in the bars and a

bolt extending through said corner-fastener, frame and plate, substantially as described.

4. A frame composed of frame-bars having mitered ends, corner fasteners for the frame, and means engaging the corner-fasteners and frame-bars and moving the frame-bars toward each other until their mitered ends abut and which also secures the corner fasteners to the frame, substantially as described.

5. A frame composed of frame-bars having mitered ends, corner-fasteners for the frame, and means slidably engaging said frame-bars at each corner of the frame, and also engaging the corner-fastener thereat, for drawing said frame-bars toward each other into the corner-fastener until their mitered ends firmly abut, substantially as described.

6. A frame composed of frame-bars having mitered ends, each bar having a notch adjacent its mitered end, corner-fasteners for the frame, a plate extending from bar to bar at each corner of the frame, having bent ends which enter and slide into the notches in said frame-bars, and means for drawing said plate, and corner-fastener together which also draws the frame-bars toward each other into the corner-fastener until their mitered ends firmly abut, substantially as described.

7. A frame composed of frame-bars having mitered ends, each bar having a groove at its end and a notch in its inner edge near the end, corner-fasteners for the frame, each comprising a pair of frame-engaging portions disposed at right angles to each other and having means connecting the extremities of said portions together on opposite sides of the frame, a plate extending from bar to bar at each corner of the frame having bent ends which enter and slide into the notches in said bars, and a bolt extending through the corner-fastener, frame, and plate for drawing the plate and corner-fastener together which also draws the frame-bars toward each other, into the corner-fastener, until their mitered ends firmly abut, substantially as described.

8. A frame composed of frame-bars having mitered ends, each bar having a notch adjacent its mitered end, corner-fasteners for the frame, a plate extending from bar to bar at each corner of the frame, the ends of which enter but do not bottom in the notches in the bars, a triangular block at each corner of the frame, located between the plate and frame-bars, and a bolt at each corner of the frame extending through the corner-fastener, frame, block and plate, substantially as described.

9. A bracket of the class described formed from a single piece of sheet metal and comprising a body section bent at right angles intermediate the ends and a brace section

extending from the body section at an angle to its longitudinal plane and bent at right angles to the transverse plane of the same.

5 10. A bracket of the class described formed from a single piece of sheet metal and comprising a body section bent at right angles intermediate the ends, a brace section
10 extending from the body section at one end at an angle to its longitudinal plane and bent at right angles to the transverse plane of the same, and a lateral projection at the

other end of the body section bent at right angles to the transverse plane thereof and to engage the free end of the brace section.

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

GEORGE W. BOWERS.

Witnesses:

B. J. NOYES,
H. B. DAVIS.