

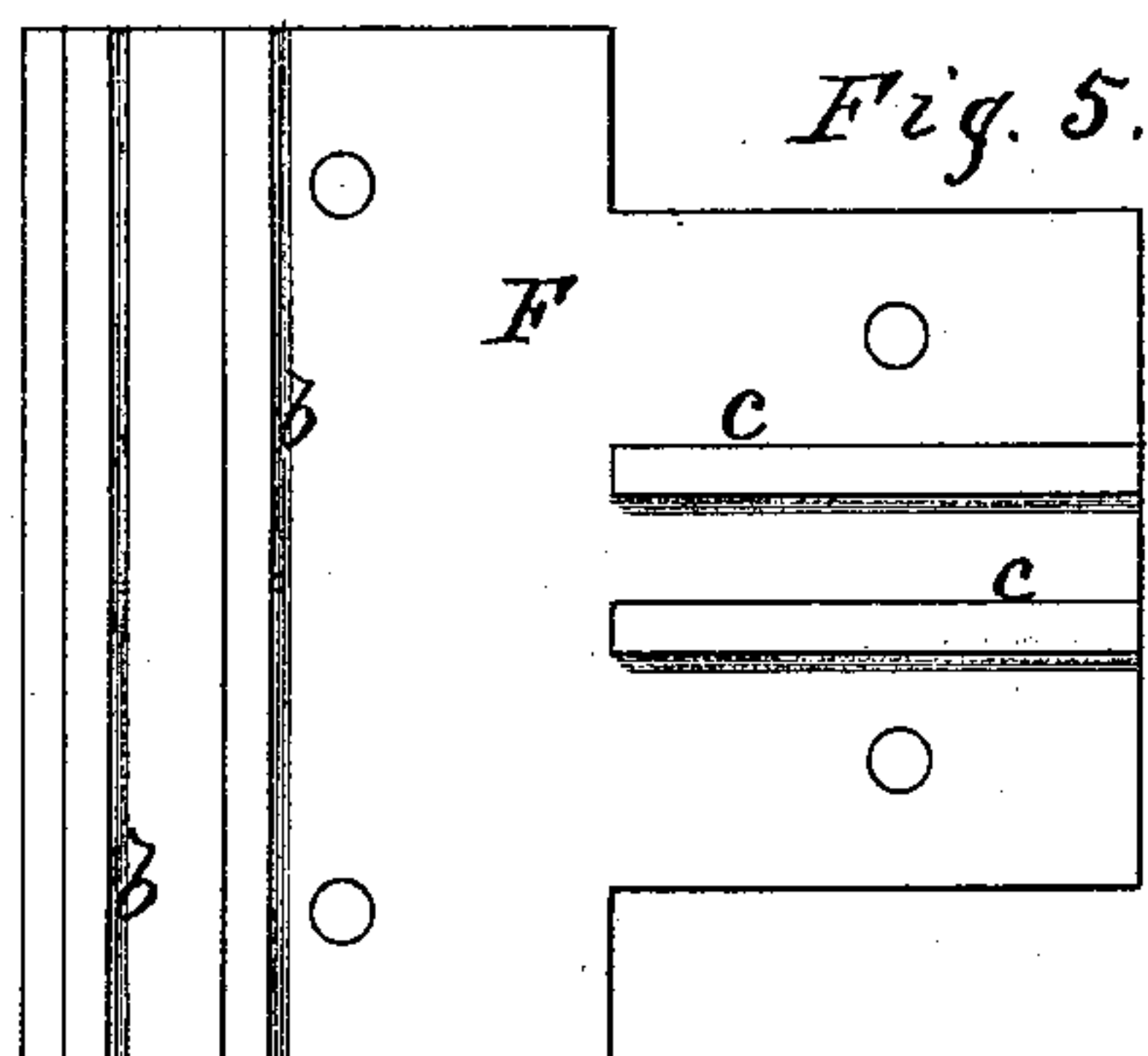
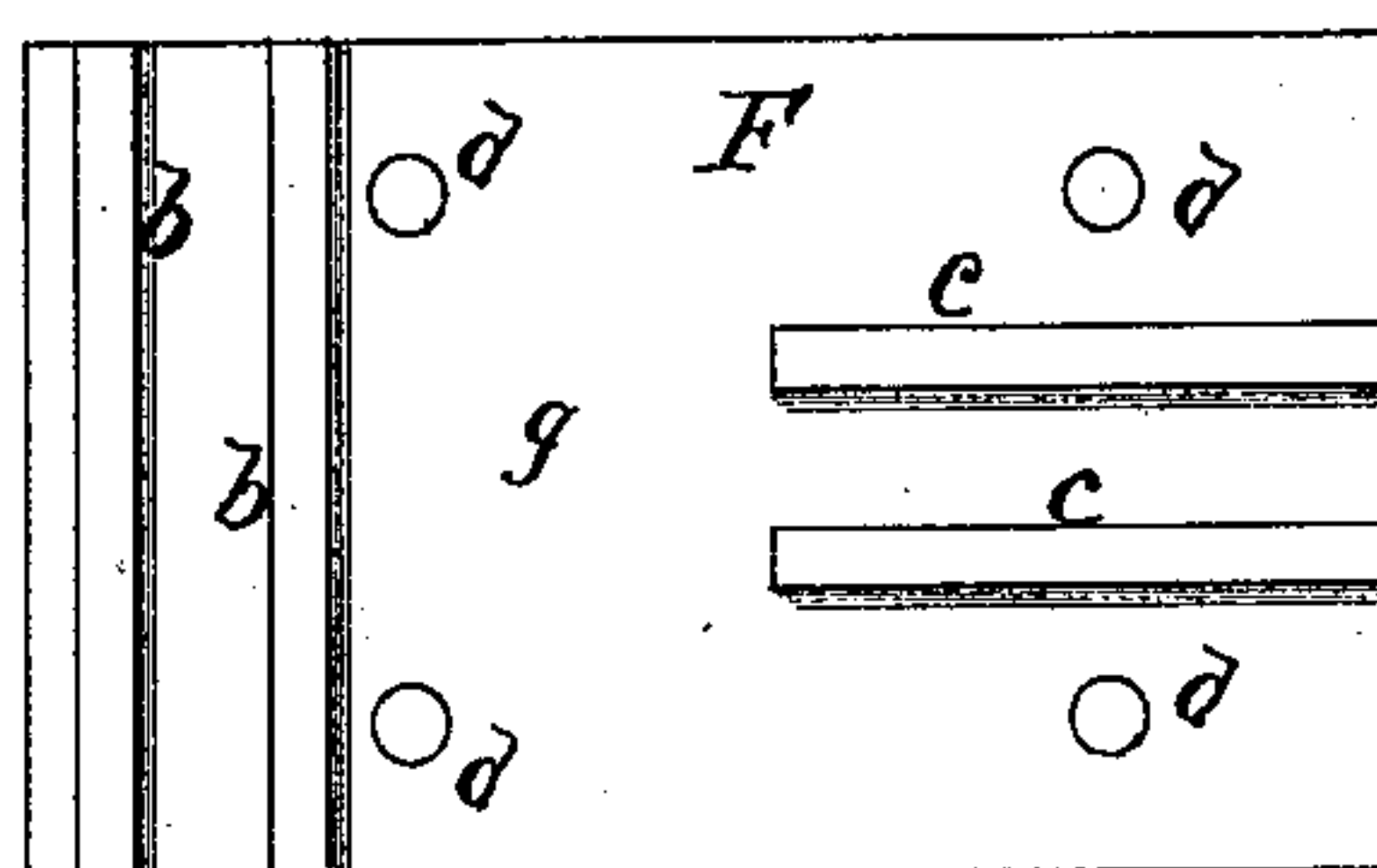
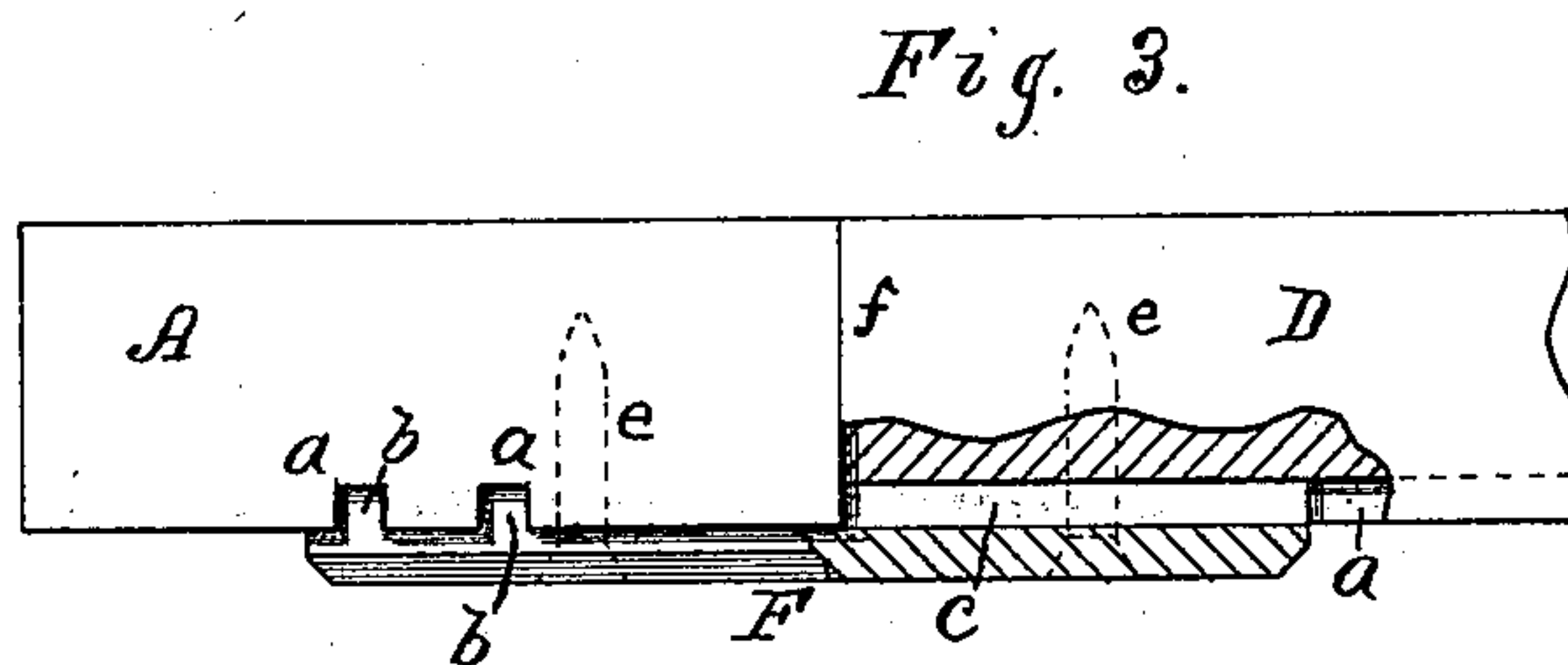
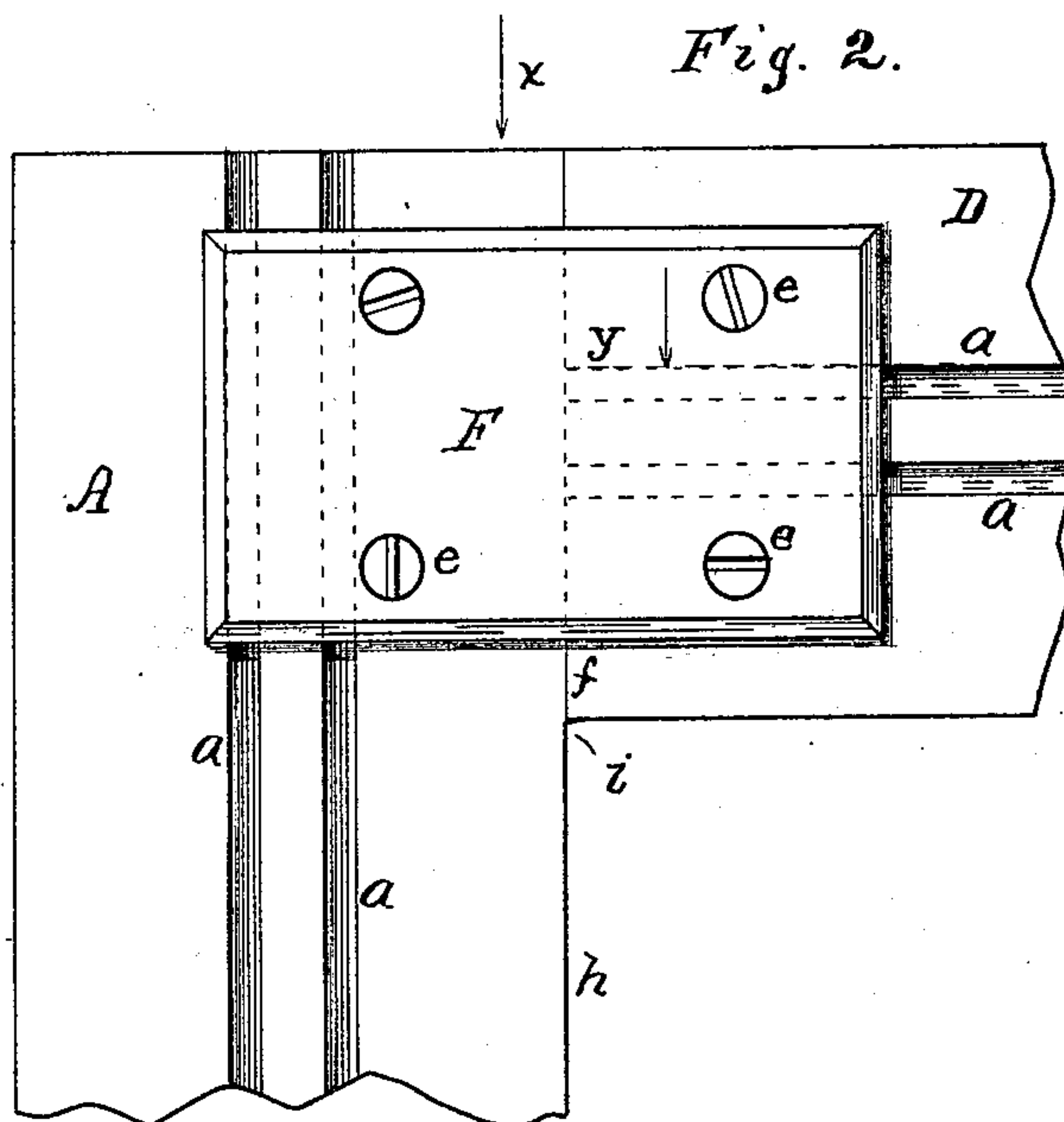
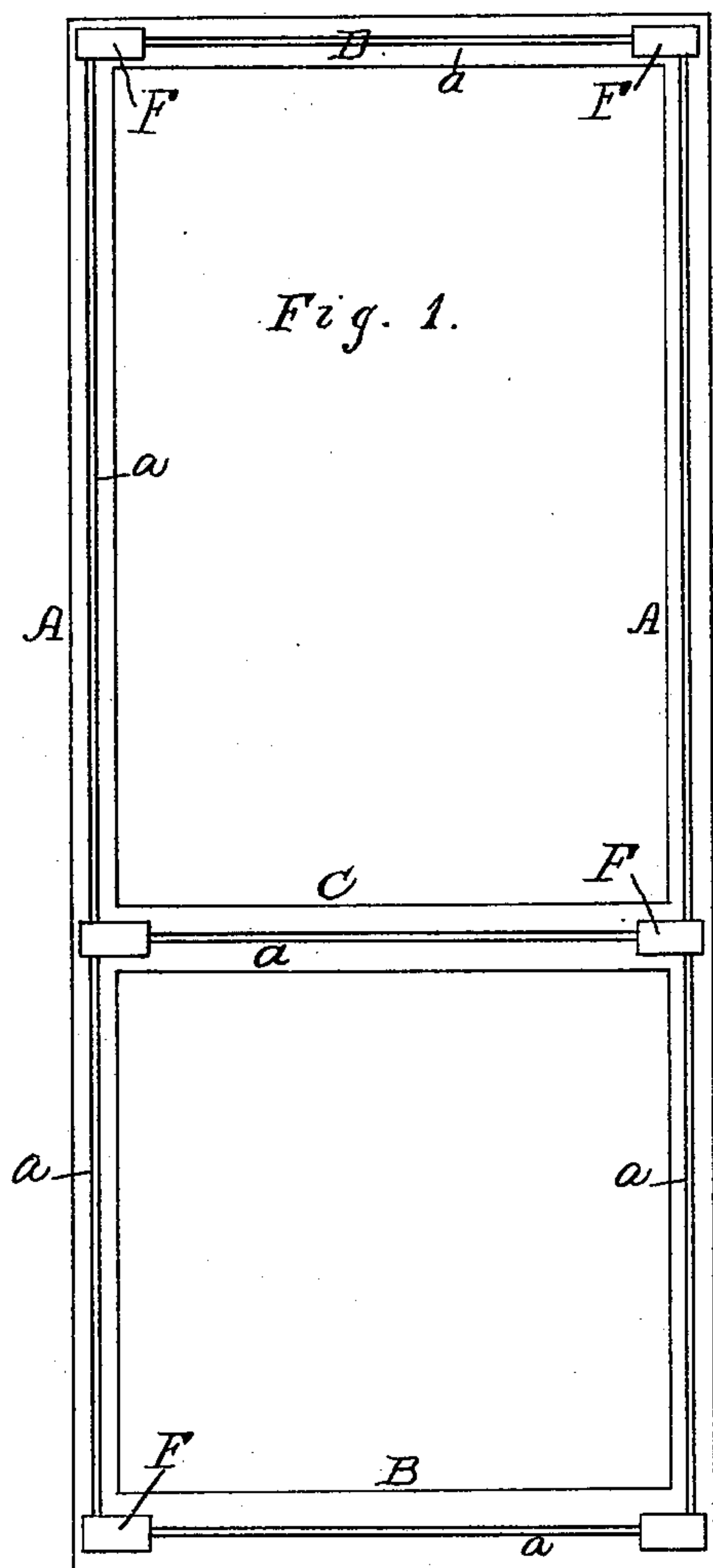
(No Model.)

J. E. STUART.

FRAME FOR DOOR AND WINDOW OPENINGS.

No. 350,570.

Patented Oct. 12, 1886.



Attest:

M. L. M. Derratt,
H. B. Knight.

Inventor:

J. E. Stuart.

By E. B. Whitmore, Atty.

UNITED STATES PATENT OFFICE.

JOHN E. STUART, OF NEWARK, NEW YORK.

FRAME FOR DOOR AND WINDOW OPENINGS.

SPECIFICATION forming part of Letters Patent No. 350,570, dated October 12, 1886.

Application filed August 6, 1886. Serial No. 210,187. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. STUART, of Newark, in the county of Wayne and State of New York, have invented a new and useful Improvement in Frames for Door and Window Openings, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

The object of my invention is to produce a novel frame for doorways or window-openings in buildings, the novelty consisting in the manner of grooving the members of the frame and in the form of the fastening-plates or fasteners for said members—that is to say, the stiles and rails of said frame—the invention being fully described in the specification here following, and more particularly pointed out in the claim.

Referring to the drawings, Figure 1 is a side elevation of a frame for a screen-door, for instance, the stiles and rails being grooved in accordance with my invention, with the novel fastening-plates secured in place at the joints; Fig. 2, a view of the upper left-hand corner of the frame, viewed in the same direction in which Fig. 1 is seen, drawn to a much larger scale to better show the fastening-plate and grooves in the members of the frame; Fig. 3, a view of the parts shown in Fig. 2, seen as indicated by arrow *x*, a part of the fastening-plate and rail being horizontally sectioned, as upon the dotted line *y*, to show the upper groove in the rail and the upper longitudinal tongue of the plate resting in said groove; Fig. 4, a view of the plate seen in the opposite direction from that in which the same is seen in Fig. 2, drawn to better show the form and arrangement of the longitudinal and transverse ribs thereon for entering the grooves; and Fig. 5, a slight modification in the form of the plate, the latter being seen in the same direction in which Fig. 4 is seen.

Referring to the parts, A are the stiles of the frame, and B, C, and D the rails, lettering from the bottom upward. These rails may be graded from the bottom upward, as shown, or they may be made uniform in width and of the same width as the stiles, at the option of the builder. These stiles and rails are formed with parallel longitudinal grooves *a a*, of any size or form of cross-section desired.

F is a rectangular metallic fastening-plate,

to be placed across the joints *f*, between the respective rails and stiles, as shown, the surface of which contiguous to said rails and stiles being plane, excepting as to transverse ribs *b b* and similar longitudinal ribs, *c c*, which are formed to fit the grooves aforesaid. The ribs *c* of the plate are at right angles to the ribs *b*, but do not touch the latter, there being a space, *g*, left between the ends of said ribs *c* and the nearest rib *b*, the distance between said ends of the ribs *c* and said rib *b* being equal to the distance between the right-hand groove *a* of the stile A, as appearing in Fig. 2, and the edge *h* of said stile. On account of this construction of the plates, no transverse grooves need be made in the stiles for said ribs *c* when the plates are put to place thereon, as would be necessary did the ribs *c* meet the rib *b* nearest them. No grooves are made in either of the parts, A or D, of the frame in which to receive the ribs *c*, save the regular longitudinal grooves *a*, already described. Forming the plate with sets of ribs at right angles to each other and separately by a space, *g*, as stated, in combination with grooved sticks, in which the distance between a groove and the edge of said stick is equal to the width of or distance across the space *g*, is substantially the novel part of my invention. Screw-holes *d* are formed through the plate, through which to pass common wood-screws, *e*, into the frame to hold the parts together.

One or more grooves, *a*, may be formed in the members of the frame, with a corresponding number of ribs upon the plate; but for ordinary purposes I prefer two, as shown. Also, the outer face of the plate, appearing in Fig. 2, may be made plain with chambered edges, or it may be ornamented by figures in relief, to suit taste. The ribs are intended to snugly fit the grooves, and when thus fitted they serve to resist any strain that tends to alter the form of the right angles *i* at the corners of the frame. The strain upon the ribs, resulting from an effort or tendency to rack or distort the frame, comes upon their sides, from which it will appear that the greater the number of grooves and ribs within practical limits the stronger the corner and the whole frame.

In doing cheap work long sticks suitable for the frames are got out and grooved to a gage,

and then simply cross-sawed into lengths for the stiles and rails. These make a frame in which the stiles and rails are all of a width. Should the rails differ in width from each other and from the stiles, as shown in Fig. 1, they may be grooved near either edge or at the middle, at pleasure, it being with the stiles alone that a correspondence in distance is required between a groove and the edge of the rail, and from the ends of the ribs *c* and adjacent rib *b*, as stated.

The fastening-plates may be made T-shaped, as shown in Fig. 5; but the form of a plane parallelogram, as shown in Fig. 4, is ordinarily preferred.

What I claim as my invention is—

A door or window frame composed of stiles and rails each formed with a longitudinal groove or grooves, in combination with fastening-plates for said stiles and rails, each provided with transverse and longitudinal ribs corresponding in number to said grooves, said longitudinal ribs of each plate being separated from said transverse ribs by a space, *g*, equal in width to the distance between a groove and the side of the stile, as described.

JOHN E. STUART.

Witnesses:

E. B. WHITMORE,
H. B. KNIGHT.