

No. 705,999.

Patented July 29, 1902.

J. HORSFIELD.

WINDOW.

(Application filed Apr. 3, 1902.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

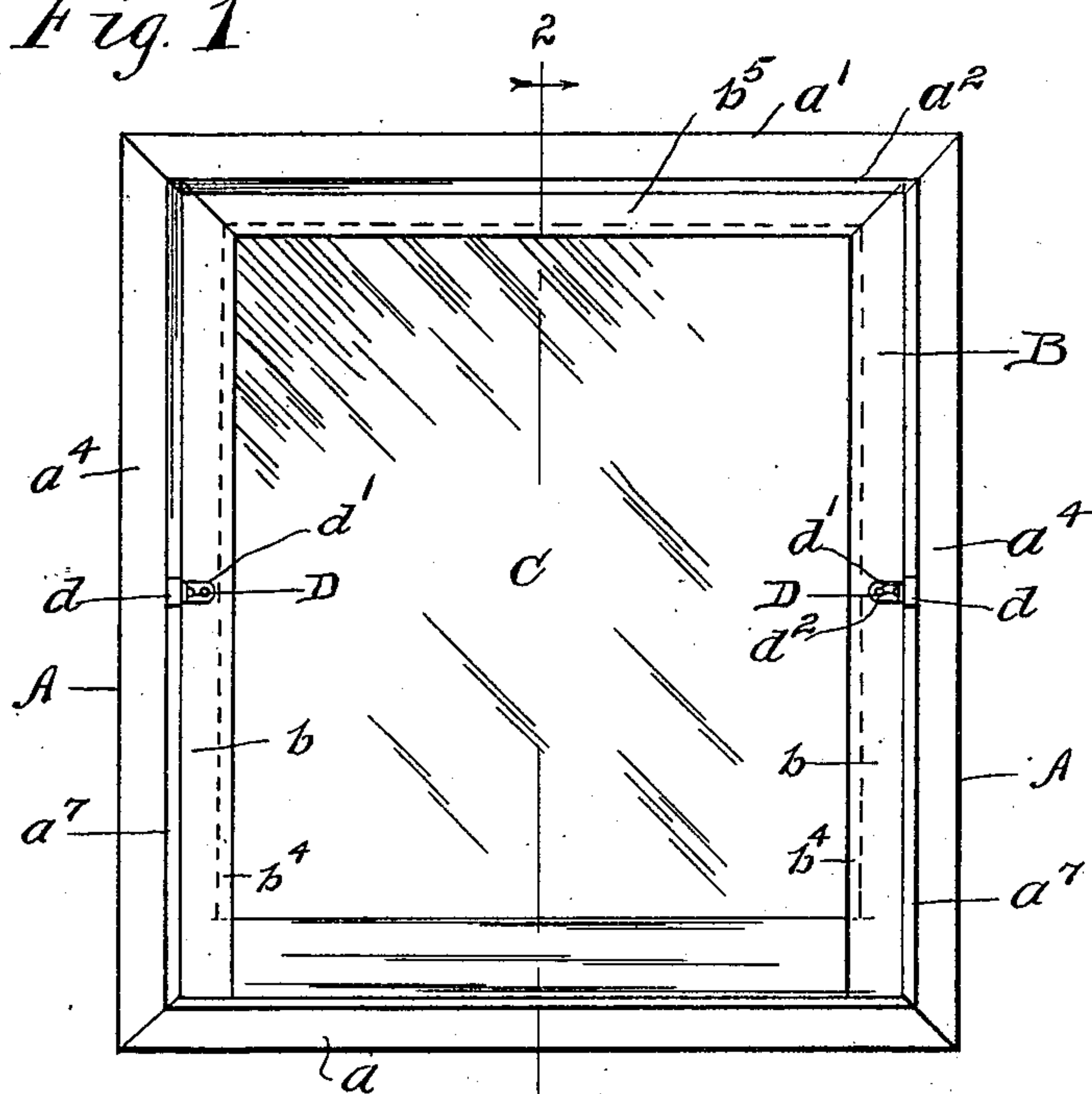


Fig. 2

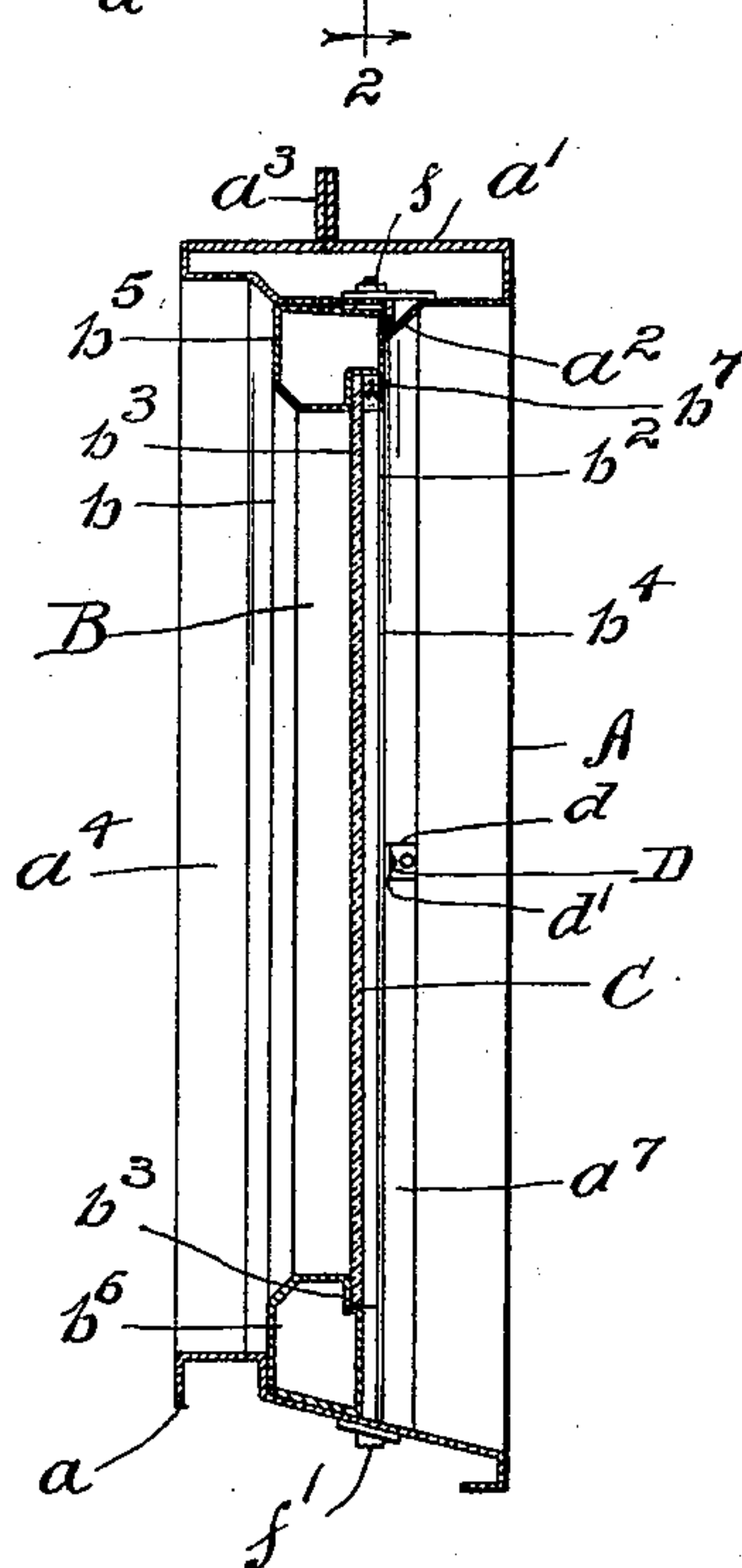
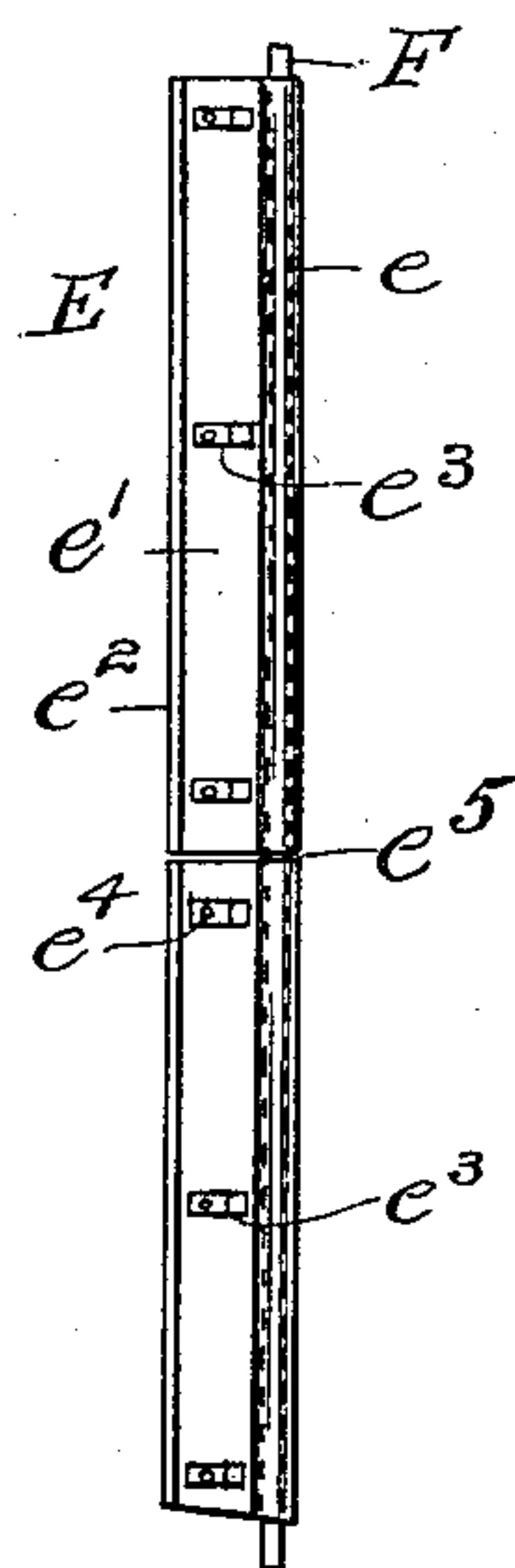


Fig. 5



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2 Sheets—Sheet 2.

Fig. 3

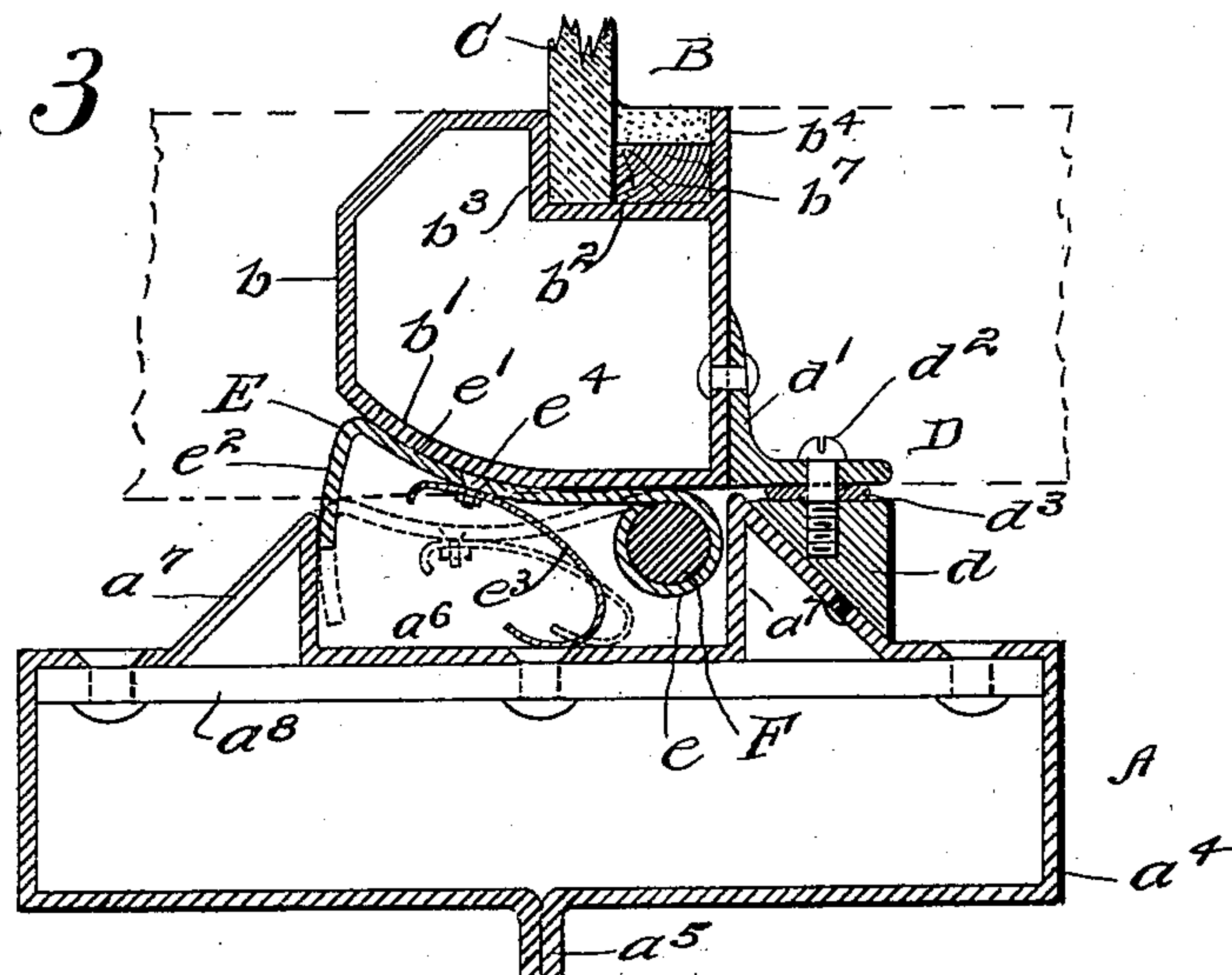
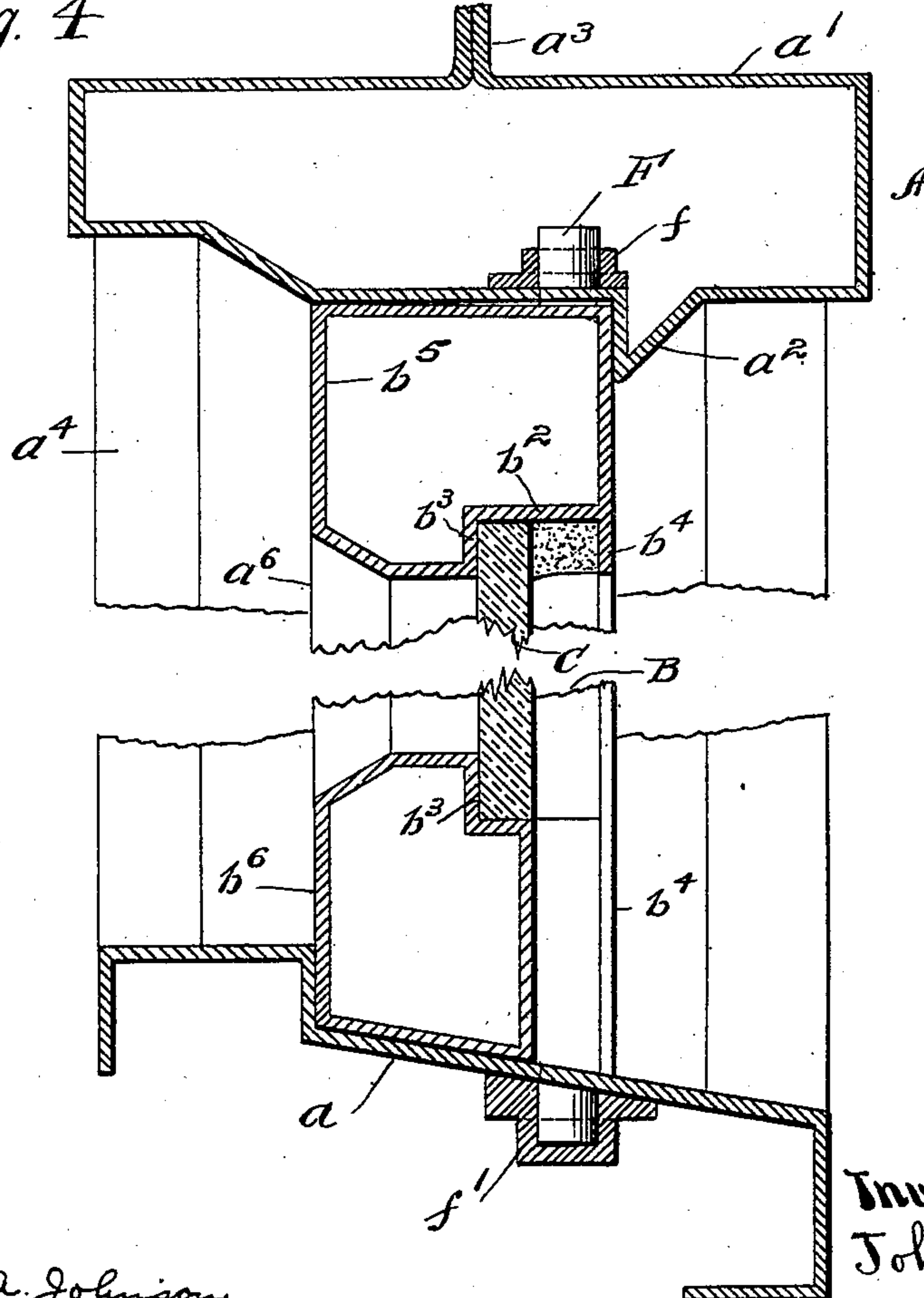


Fig. 4



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UNITED STATES PATENT OFFICE.

JOHN HORSFIELD, OF CHICAGO, ILLINOIS.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 705,999, dated July 29, 1902.

Application filed April 3, 1902. Serial No. 101,286. (No model.)

To all whom it may concern:

Be it known that I, JOHN HORSFIELD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Windows, of which the following is a specification.

Although this invention is applicable to sliding windows, it is primarily adapted to apply to French or pivot windows; and its objects are to provide windows of this character that may be conveniently and cheaply constructed out of suitable metal and when so constructed will be efficient in producing a tight-closing and easily-operated window.

It consists in a tubular sash provided with channels for the introduction of the pane, which also form protecting-grooves for the putty or pane-retaining strips; in combining with a suitable sash having stiles with curved or rounded outer edges spring-pressed closure-strips; in combining with a pivoted sash and a channeled frame spring-pressed pivoted strips adapted to conform to the curved edge of the stile, and in such other novel features and details as will be fully described and claimed hereinafter.

In the drawings, Figure 1 is an outside elevation of a window embodying this invention. Fig. 2 is a sectional view of the same, taken on the line 2 2 of Fig. 1. Fig. 3 is an enlarged sectional detail showing the curved stile and the frame, with the swinging closure-strip engaging the stile also shown in dotted lines in the position it would assume when the window is opened. Fig. 4 is a sectional detail showing the sill and top of frame with the sash in place.

The window-frame A is preferably made of sheet metal, with the sill a formed, as shown, with a stop-ledge and in a suitable manner to be backed with brick or stone. The top of the frame a' is formed in a hollow section, with a beveled sash-top a^2 and the edges of the metal brought together at a^3 to form a flange to engage with the brickwork. The sides of the frame a^4 are also formed in a hollow section, with a similar flange a^5 to engage with the brickwork. The inner faces of the sides of the frame are suitably shaped to form longitudinal channels a^6 therein. The raised

parts or ridges a^7 forming these channels are preferably made with beveled outer faces, and stay-plates a^8 are placed at intervals across the inner surface of the frame to form a rigid construction.

B represents the window-sash, and comprises in its construction a novel means for receiving and firmly securing the pane C, which effectually protects the glass-retaining strips or putty fastening. The tubular stiles b are curved on their outer edges b' and are channeled at b^2 to receive the glass. The channels are formed by shoulders b^3 in the stile and flanges b^4 , formed by extending the metal of outer edge. The top rail b^5 is similarly channeled and flanged, and it will be noted that the width of this channel is about twice the thickness of the glass. The bottom rail of the sash, however, has no flange and is simply shouldered to receive the glass, making it somewhat narrower than the top rail, as shown. The pane is put in place by sliding it up into the grooves formed by the channels in the stiles and top rail and pressing it over against the shoulder b^3 . It now rests upon the lower rail and may be bedded in putty in the usual manner. To securely hold the glass in position, strips of metal or wood b^7 may be forced in between the same and the flanges b^4 and putty spread over them or putty alone used. The flanges form a perfect protection from the weather in either case and prevent the breaking away of the putty and loosening of the glass, as frequently happens in the old form of windows. The sash is pivoted at D to the frame and when closed is in alignment with the channels a^6 , which are substantially the same width as the stiles. The pivot is formed by fastening a lug d in any suitable manner on the frame and an angle d' on the sash, which form suitable bearings for the pivot-pin d^2 . A washer d^3 may be inserted between the lug and angle, as shown. In the channels a^6 are pivoted longitudinal closure-strips E, which are yieldingly held in engagement with the sash-stiles. These are preferably made by bending a suitable strip of metal to form a tubular hinge-socket e to engage with a pintle or pivot-rod F, then curved, as at e' , to conform to the curve of the stiles b , and then bent at an angle to form a second

curved portion e^2 , adapted to slidingly engage the wall of the channel, but sufficiently narrow to allow the window to swing open. Any kind of springs may be used to urge the strips into close contact with the stiles; but I prefer to use flat springs e^3 , bent as shown and secured to the strips E in any convenient manner, as by small bolts e^4 with counter-sunk heads. These springs may be placed at intervals along the strip and as many used as desired. The rod F is pivoted in bearings f in the top of the frame a' and f' in the sill a , the latter being preferably a socket-bearing to support the rod and the former an open bearing. The rod is readily put in place by sliding it up through the top bearing, then swinging the bottom into position over the socket and dropping the rod into the socket. If the window is long, the closure-strip may be divided at a point opposite or slightly below the pivot, as shown at e^5 in Fig. 5. By separating it at this point the top section only will be forced in when the window is opened and the bottom section will swing out only to the limit of the expansion of the springs.

It will be observed that in the operation of opening this window with the arrangement as shown the portion of the sash below the pivots passes directly out of engagement with the closure-strips, and consequently the only resistance which the sash meets in pressing back the closure-strip is above the pivot. This is found to obviate a serious objection to other devices intended for this purpose and furnishes an easily-operated window.

Other forms of swinging closure-strips may be used without departing from the spirit of this invention, which I do not wish to limit to the exact form of construction herein shown; but

What I claim, and desire to secure by Letters Patent, is—

1. A window-sash having the top rail and side members provided with flanges adapted to form channels for inserting and retaining the pane, said channels being substantially twice the thickness of the pane, and a bottom rail sufficiently narrower than the other members to allow the glass to be inserted in said channels, and provided with a shoulder corresponding with shoulders on the other members so that the pane when inserted in said channels may be pressed against said should-

ers for permanent fastening, substantially as described.

2. In a window the combination of a sash provided with stiles having curved outer edges and yielding closures adapted to engage said stiles.

3. In a pivot-window, the combination of a sash having the outer edges of the stiles thereof curved, and pivoted yielding closure-strips engaging said stiles.

4. In a window, the combination of a frame, a sash pivoted to said frame, and pivoted closure-strips yieldingly engaging said sash.

5. In a window, the combination of a frame, longitudinal channels in said frame, a sash, and closure-strips pivoted in said channels adapted to yieldingly engage said sash.

6. In a window, or equivalent device, the combination of a frame provided with channels, a sash having curved edges pivoted in said frame, longitudinal closure-strips pivoted in said channels, said strips being provided with curved faces to engage said sash and curved reversely-bent flange adapted to engage the walls of said channels, and means for holding said strips in yielding engagement with said sash.

7. A window-frame constructed of sheet metal, having the inner faces of the frame sides bent out at substantially right angles and reversely bent at a bevel to form channels therein and inner stay-plates at intervals along said faces substantially as herein described.

8. In combination a frame having longitudinal channels or grooves, a sash having stiles with curved edges pivoted in said frame in alignment with said channels or grooves, closure devices pivoted in said channels having curved faces engaging said stiles and curved flanges slidingly engaging the walls of said channels and springs adapted to press against said closure devices to urge them against the sash-stiles.

9. In combination with a pivot-window and its frame, a yielding closure-strip divided at a point opposite or near the pivot whereby only one portion of said strip is pressed back when the window is opened.

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Witnesses:

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