

No. 775,915.

PATENTED NOV. 29, 1904.

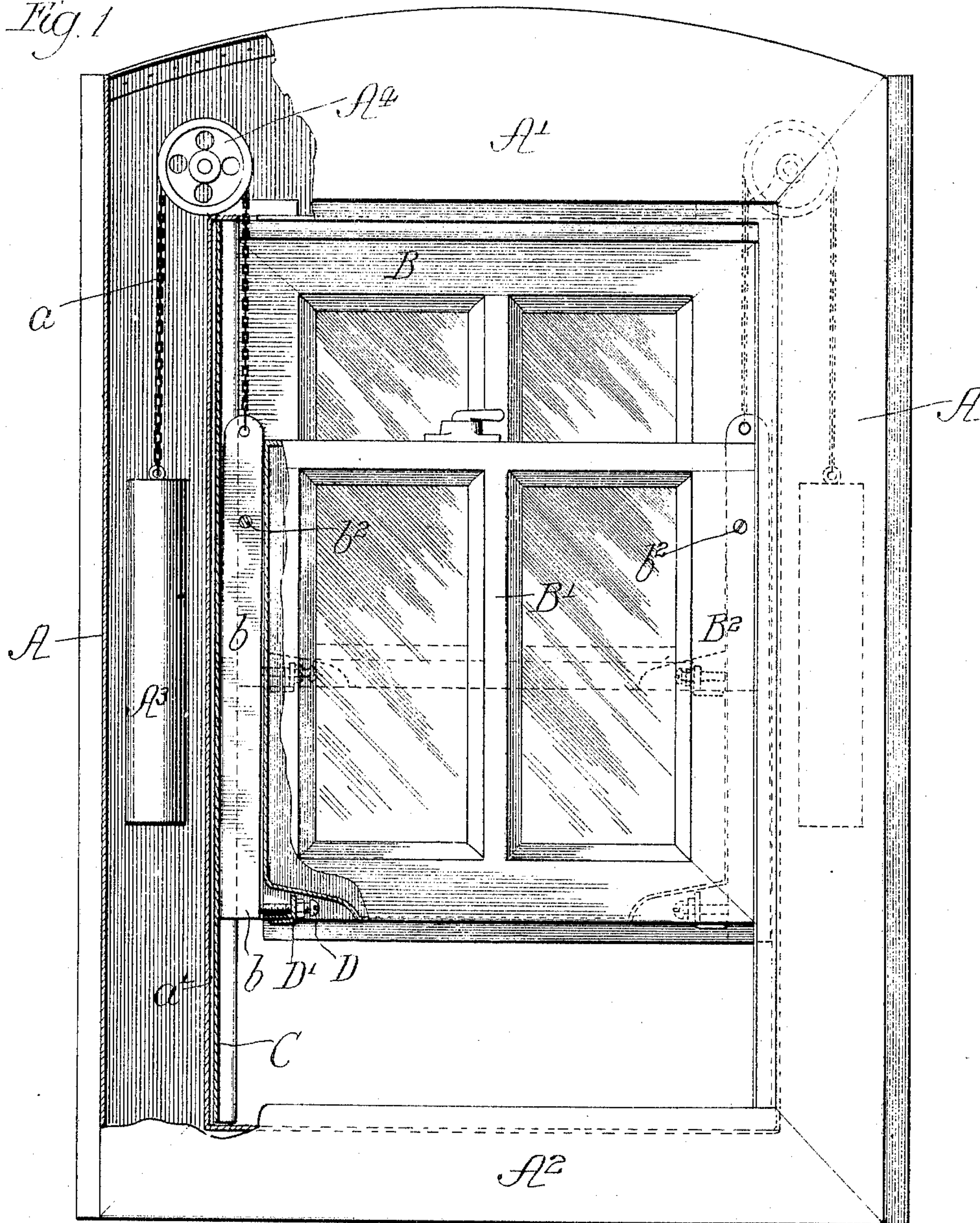
C. E. ERICKSON.
METALLIC SLIDING WINDOW.

APPLICATION FILED MAY 31, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1



Witnesses:

H. G. Barrett.

George Raymond Wilkins

Inventor:

Charles E. Erickson

by Poole & Brown

his Atty's

C. E. ERICKSON.
METALLIC SLIDING WINDOW.
APPLICATION FILED MAY 31, 1904.

NO MODEL.

2 SHEETS—SHEET 2.

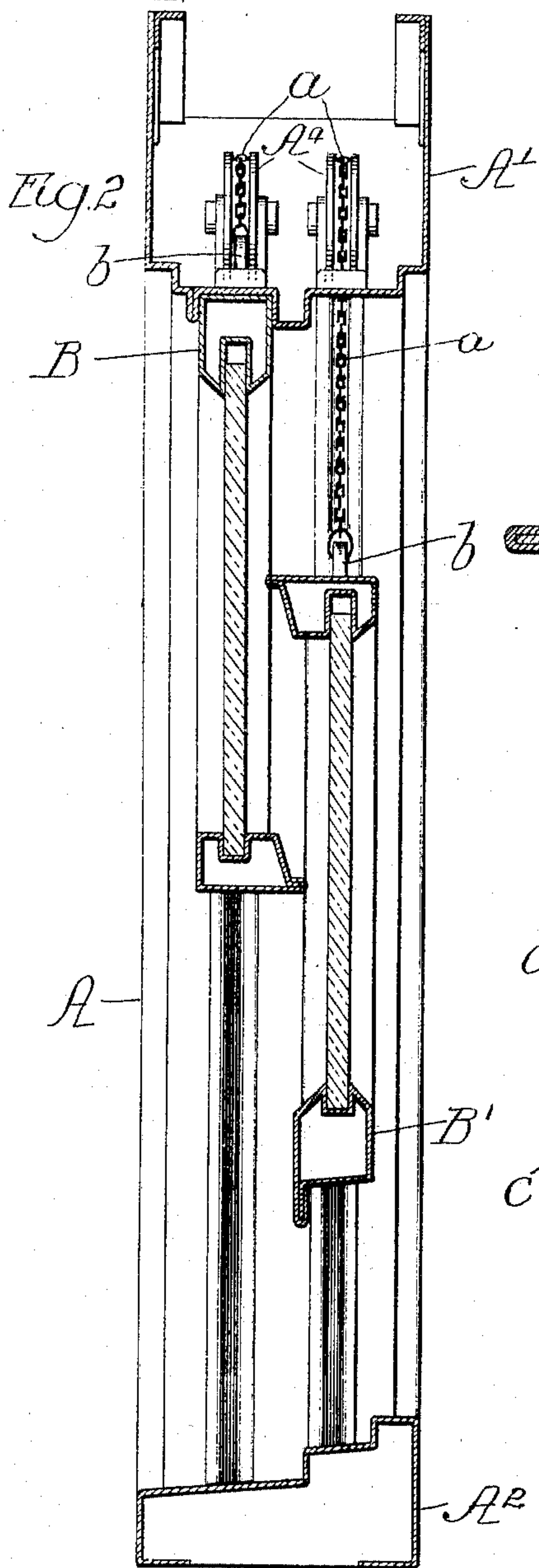


Fig. 3

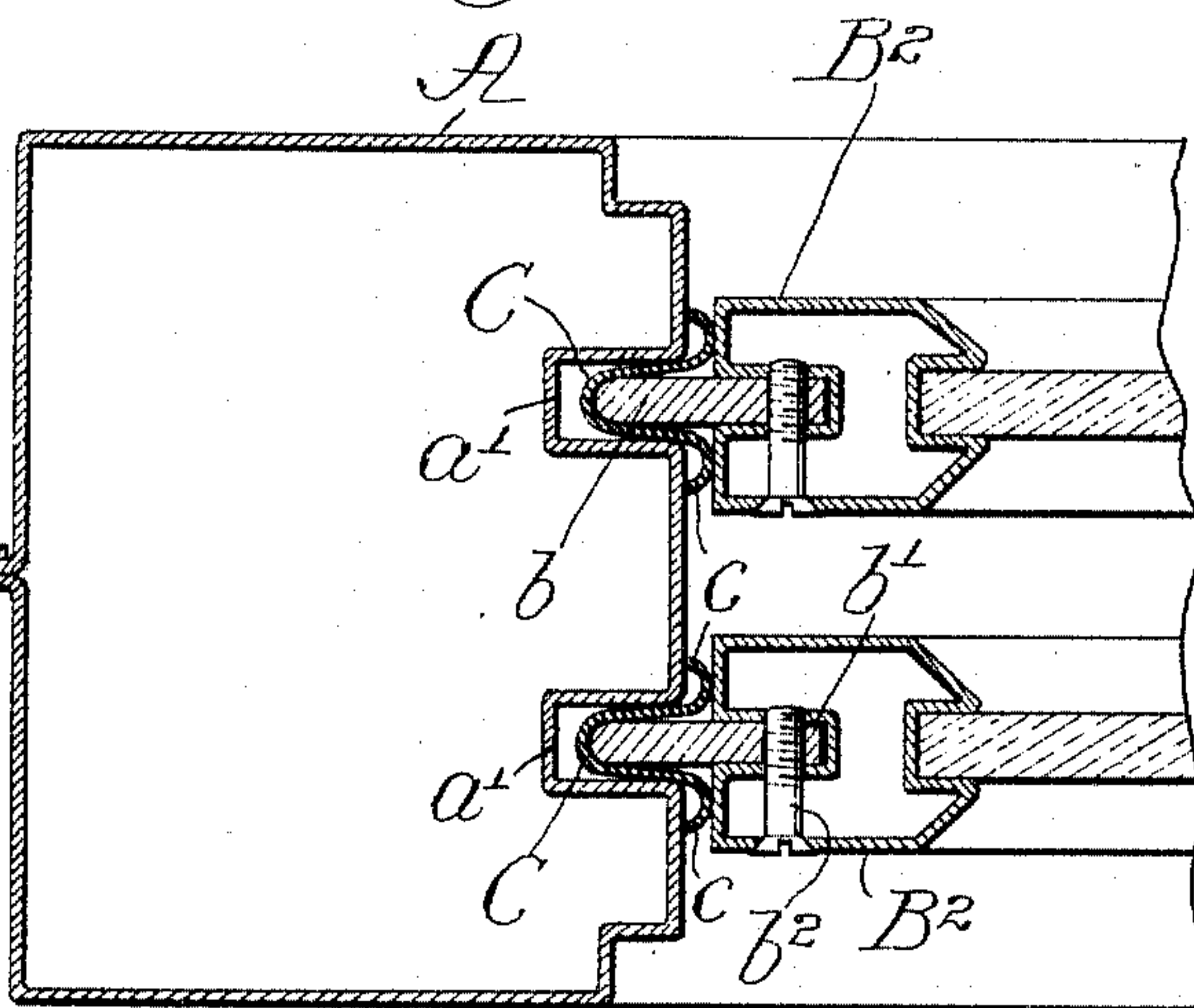


Fig. 4

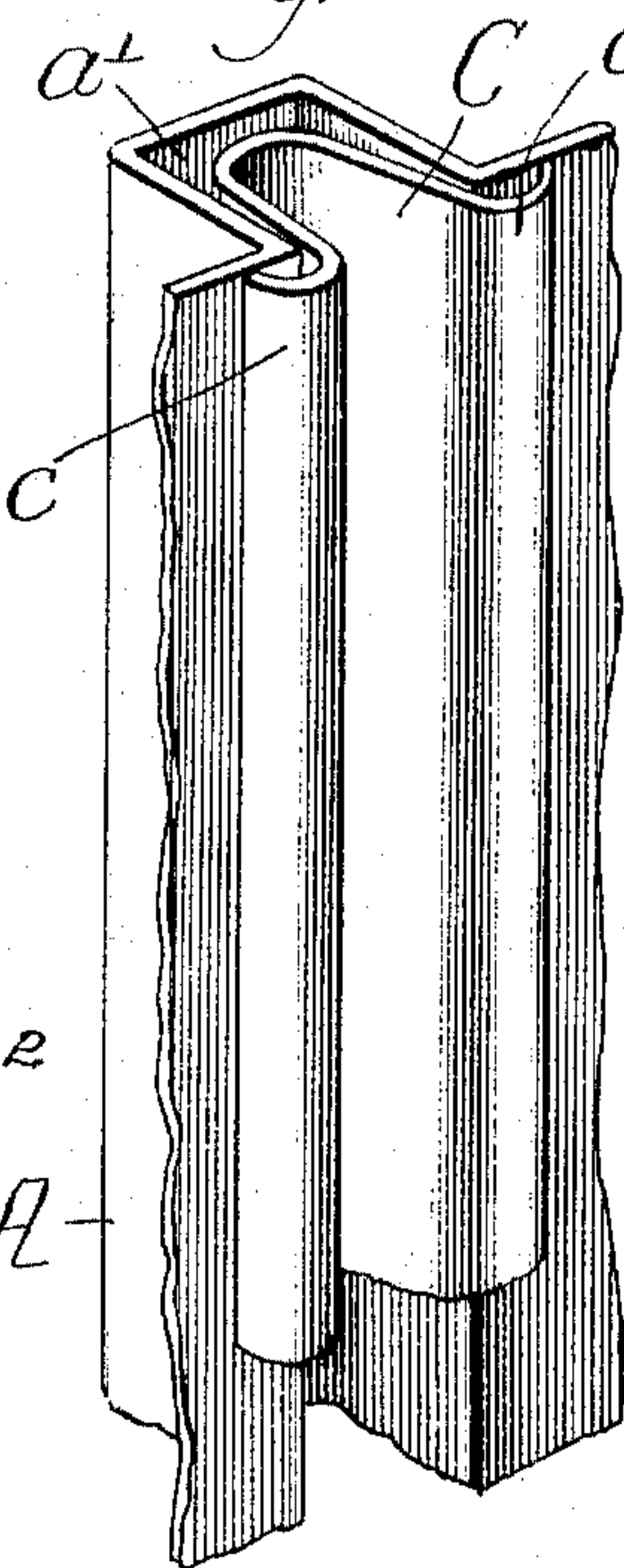


Fig. 5

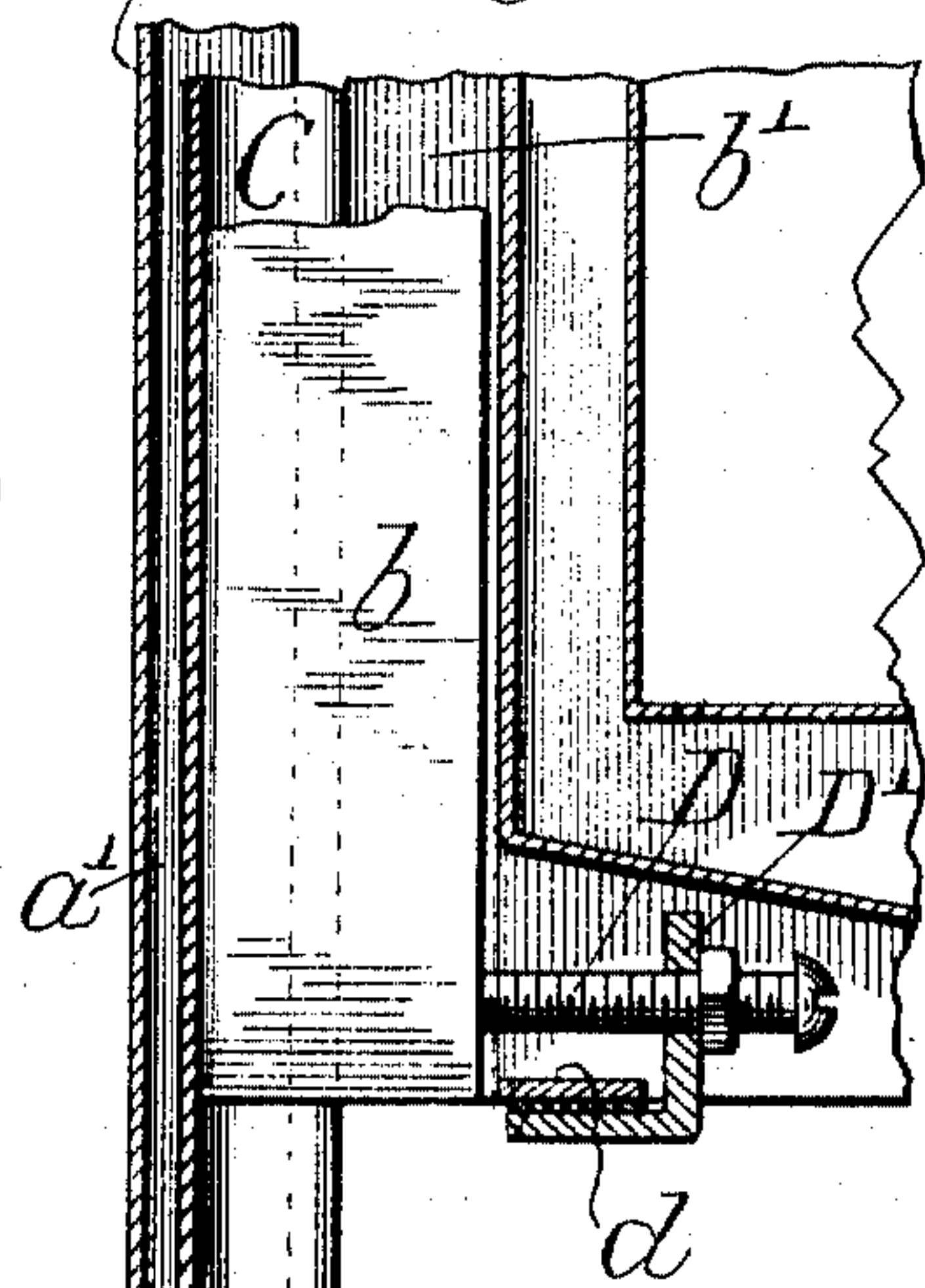
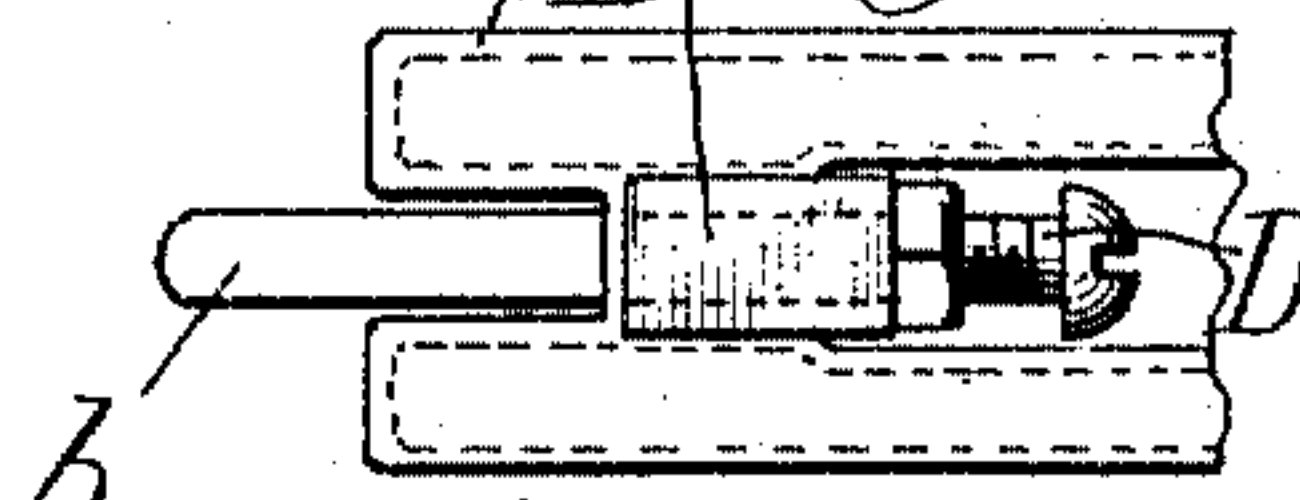


Fig. 6



Witnesses:

H. Barrett

George Raymond Wilkins

Inventor
Charles E. Erickson
by Poole & Brown Attys

UNITED STATES PATENT OFFICE.

CHARLES E. ERICKSON, OF CHICAGO, ILLINOIS.

METALLIC SLIDING WINDOW.

SPECIFICATION forming part of Letters Patent No. 775,915, dated November 29, 1904.

Application filed May 31, 1904. Serial No. 210,442. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. ERICKSON, 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 Metallic Sliding Windows; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in sliding windows, and refers, first, to an improved weatherproof connection between the side members or jambs of the window-frame and the window-sash, and, secondly, to an improved automatic thermally-actuated releasing device for the window-sash of that class wherein the window-sash and their counterbalancing-weights are so proportioned that when the sashes are released they are closed either by an overbalance of the weights or the sash, depending upon whether it be the upper or lower sash.

My improvements are herein shown as applied to windows of metallic construction; but in so far as they relate to the means for providing a weather-tight connection between the sash and frame the parts may be made of other suitable material.

As shown in the drawings, Figure 1 is a side elevation of a window provided with my improvements, showing the lower sash partly raised, parts of the sash and frame being broken away to better show the construction. Fig. 2 is a vertical section thereof. Fig. 3 is a transverse section taken through the window frame and sash at the vertical plane of the pivot-bolt b^2 for the guide-bar b . Fig. 4 is a fragmentary perspective view of a portion of the side member of the window-frame and the weather-strip in position therein. Fig. 5 is a fragmentary side view with parts broken away of the lower one corner of the sash and a portion of the adjacent side member of the window-frame. Fig. 6 is a partial bottom plan view of the lower rail of one of the sashes.

As shown in the drawings, A A designate

the side members, and A' A² the top and bottom members, respectively, of the window-frame, and B B' the two sliding window-sashes therein. Said window frame and sash members, as herein shown, are constructed of sheet metal, the metal plates or strips of which they are composed being suitably folded to constitute hollow or tubular members connected together in any suitable manner. The sashes B' are counterweighted by the usual weights A³, the chains a of which are trained over pulleys A⁴ and are attached at their other ends to the window-sashes. The inner walls of the side members A of the tubular side members of the window-frame are provided with guide-grooves a' to receive guide-bars b , extending laterally from the stiles of the sashes. As herein shown, said guide-bars b of the sashes are fitted in longitudinal grooves b' , which are formed in the outer walls of the tubular stiles of the sashes. In case the sashes be made of other construction the said guide-bars may be otherwise attached thereto. Each of said guide-bars is held in place in its groove b' of the stiles by means of a screw b^2 , near the top of the stile, which extends loosely through one side of the stile and through the bar and has screw-threaded engagement with the walls of the grooves b' . As herein shown, the counterweight-chains are fastened to the upper ends of said bars, which extend a distance above the sashes.

C designates a weather-strip fitted in each guide-groove a' of the window-frame and extending from the top to the bottom thereof. Said strips are made of general U form in cross-section and are fitted with their closed or U-shaped parts in said guide-grooves. The guide-bars b of the sashes fit closely and slide endwise in said channeled or U-shape weather-strips. The weather-strips are made of sheet metal possessing some resiliency, tempered sheet-brass being an approved material. They are provided at their side margins with reversely-bent flanges c , which are located outside of the grooves a' and the extreme margins of which bear against the inner faces of the frame members at the sides of the grooves therein in the manner more clearly shown in Figs. 3 and 4. Means are provided, herein-

after to be described, which force the guide-bars *b* laterally outwardly into engagement with the weather-strips, the side margins of said bars closely fitting the bottoms of the channel or U-shaped weather-strips. The engagement of the sash guide-bars *b* with the bottom or closed parts of the weather-strips tends to force said weather-strips into the grooves *a'*, said grooves being made deeper than the strips, and such tendency to force the strips into the grooves is resisted by the spring action of the reversely-bent flanges *c* of said strips. The effect of this action is to provide a tight joint between the inner margins of the sash guide-bars and the bottoms of the U-shaped weather-strip and also between the side edges of said strips and the inner side faces of the window-frame. It will thus be seen that the resilient or yielding parts of the weather-strips—to wit, the curved portions *c*—are located mainly outside of the grooves. The construction thus described maintains a constant pressure against the guide-bars of the sashes on the one side and the frame on the other, thus maintaining always a tight joint between the sash and frame, while permitting the sash to be moved without the application of great force thereto. The said pressure exerted between the sash and weather-strips acts to hold the sashes open so long as said pressure is maintained. When the pressure is released, the overbalance of the lower sash or the overbalance of the weights of the upper sash has the effect of closing the window.

The means for applying pressure to force the guide-bars outwardly into binding-contact with the weather-strips consists, as herein shown, of clamping-screws *D*, located one at each lower corner of each sash and bearing against the inner margins of the guide-bars *b* at their lower ends. Said clamping-screws have screw-threaded engagement with brackets *D'*, attached to the sashes and located, as herein shown, in recesses in the bottom face of the lower rails of the sashes. Said brackets have horizontal and vertical arms, the screws extending through the vertical arms. The brackets are fastened to plates *d*, affixed to the window. Thus when pressure is applied through the medium of said screws to the bars it presses the lower ends of the bars outwardly into close contact with the weather-strips, affording such pressure as is required to maintain weatherproof joints and to counteract the overbalancing effects tending to close the sashes.

The brackets *D'* are fastened to the plates *d* of the sashes through the medium of a solder which fuses at a low temperature. Upon the fusing of the solder, therefore, the brackets carrying the clamping-screws are free to fall away from the sashes. When this occurs, the pressure against the bars *b* is released, so that the sashes are free to close, the lower sash

by reason of its overbalance and the upper sash by reason of the overbalance of its weights. It is of course understood that the glass in the sashes *B B'* is of a fireproof nature, so as to afford protection against fire when closed. The purpose of the automatic thermally-actuated releasing device is to afford means whereby the window shall automatically close in the event of a fire occurring in the vicinity of the window, and thereby protecting the interior of the building.

It is obvious that the structural details of the window herein shown may be considerably varied without departing from the spirit of my invention, and I do not wish to be limited to such details except as hereinafter made the subject of specific claims.

I claim as my invention—

1. The combination with a window-frame member provided with a longitudinal guide-groove and a sash member, of a weather-strip of general U form in cross-section fixed stationary in said groove and bearing at its side margins against the inner face of the frame member at the lateral sides of said groove, and a longitudinal guide extending laterally from said sash member and entering and having sliding engagements with the channel of said strip.

2. The combination with a window-frame provided with a longitudinal guide-groove and a sash member, of a channeled weather-strip fixed stationary in said groove and bearing at its side margins against the inner face of the frame member at each lateral side of said groove, and a longitudinal guide-bar extending laterally from said sash member and entering and having sliding engagement with said strip, the outer face of said sash member at the sides of said guide-bar bearing against said strip.

3. The combination with a window-frame provided with a longitudinal guide-groove and a sash member, of a channeled weather-strip fixed stationary in said groove, the margins of which strip extend outside the groove, and are curved laterally and rearwardly and bear against the side face of the frame member at the sides of the groove therein, a guide-bar extending laterally from said sash member and entering and having sliding engagement with the channel of said weather-strip, the sash member engaging the curved parts of the strip outside of the groove.

4. The combination of a window-frame member provided with a longitudinal guide-groove and a sash member, of a weather-strip of U form in cross-section fitted in said groove, the side margins of which bear against the inner face of the frame member at the sides of said groove, a guide-bar extending laterally from the sash member and having sliding engagement with the channel of said weather-strip, and means for adjusting said bar laterally on the sash member.

5. The combination with a window-frame member provided with a longitudinal guide-groove and a sash member, of a spring sheet-metal weather-strip of U form in cross-section fitted in said groove, the side margins of which bear against the inner face of the frame member at the sides of said groove, a longitudinal bar extending laterally from said sash member and having sliding engagement with the channel of said strip, and means carried by the sash member for forcing the said bar laterally into close engagement with said weather-strip.

6. The combination with a window-frame member provided with a longitudinal guide-groove and a sash member provided with an opposing groove, of a sheet-metal weather-strip of U form in cross-section fitted in said guide-groove and bearing at its side margins against the inner face of the frame member at the sides of said groove, a guide-bar in the groove of said sash member, extending laterally therefrom and having sliding engagement with the channel of said weather-strip, and means for forcing said guide-bar laterally into close-fitting engagement with said weather-strip.

7. The combination with a window-frame member provided with a longitudinal groove and a sash member provided with a registering longitudinal groove, of a spring-metal weather-strip of U shape in cross-section fitted in said frame-member groove and bearing at its side margins against the inner face of the frame member at the sides of said groove, a guide-bar in the groove of the sash member, a pin extending through the sash and through the upper end of said bar to hold the bar in place, and a clamping-screw carried by the lower part of the sash and acting to force the lower end of said bar into close-fitting engagement with said weather-strip.

8. The combination with the upright member of a window-frame provided at its inner face with a guide-groove, a spring sheet-metal, channeled weather-strip fitted stationary in said groove, of a sliding window-sash member provided with a longitudinal guide-groove, a bar in said groove pivoted between its ends to said sash member and extending laterally from the sash member and having sliding engagement with said channeled weather-strip, and a rigid clamping device carried by said sash member and bearing against one end of said pivoted bar to force the same into engagement with the spring-metal channeled weather-strip, said clamping device embracing a fusible joint.

9. The combination with the side members of a window-frame provided with guide-grooves and a widow-sash, of weather-strips of U form in cross-section fitting in said grooves and the side margins of which bear against the inner faces of said frame members at the sides of said grooves, longitudinal guide-bars extending laterally from the sashes and having sliding engagement with the channeled weather-strips, balancing-weights provided with chains which are attached to said sash, and clamping devices carried by the sash and bearing against the lower ends of said bars to force the same into close-fitting engagement with said weather-strips, said clamping devices being connected with the sash by means embracing fusible joints.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 27th day of May, A. D. 1904.

CHARLES E. ERICKSON.

Witnesses:

C. CLARENCE POOLE,
GEORGE RAYMOND WILKINS.