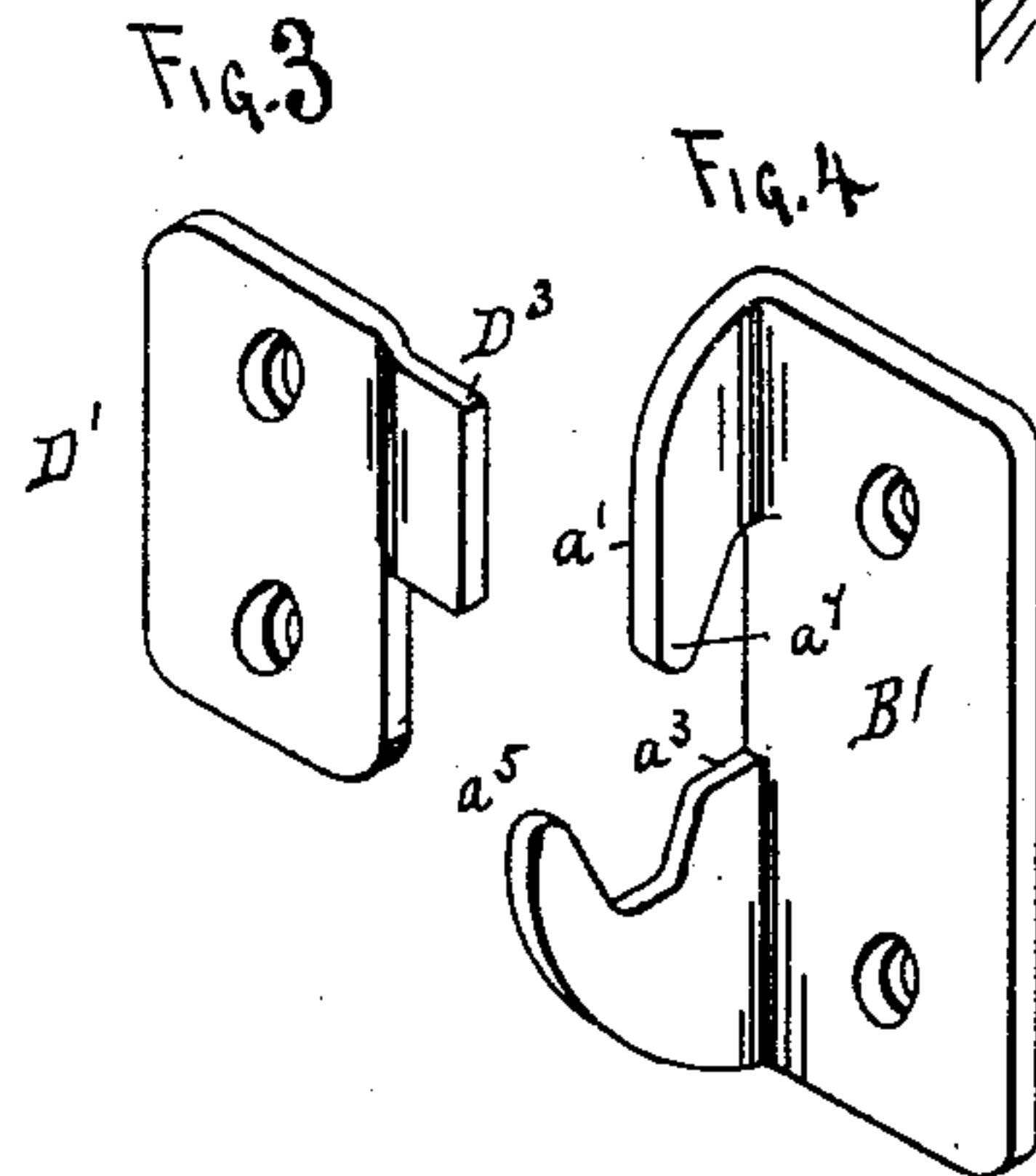
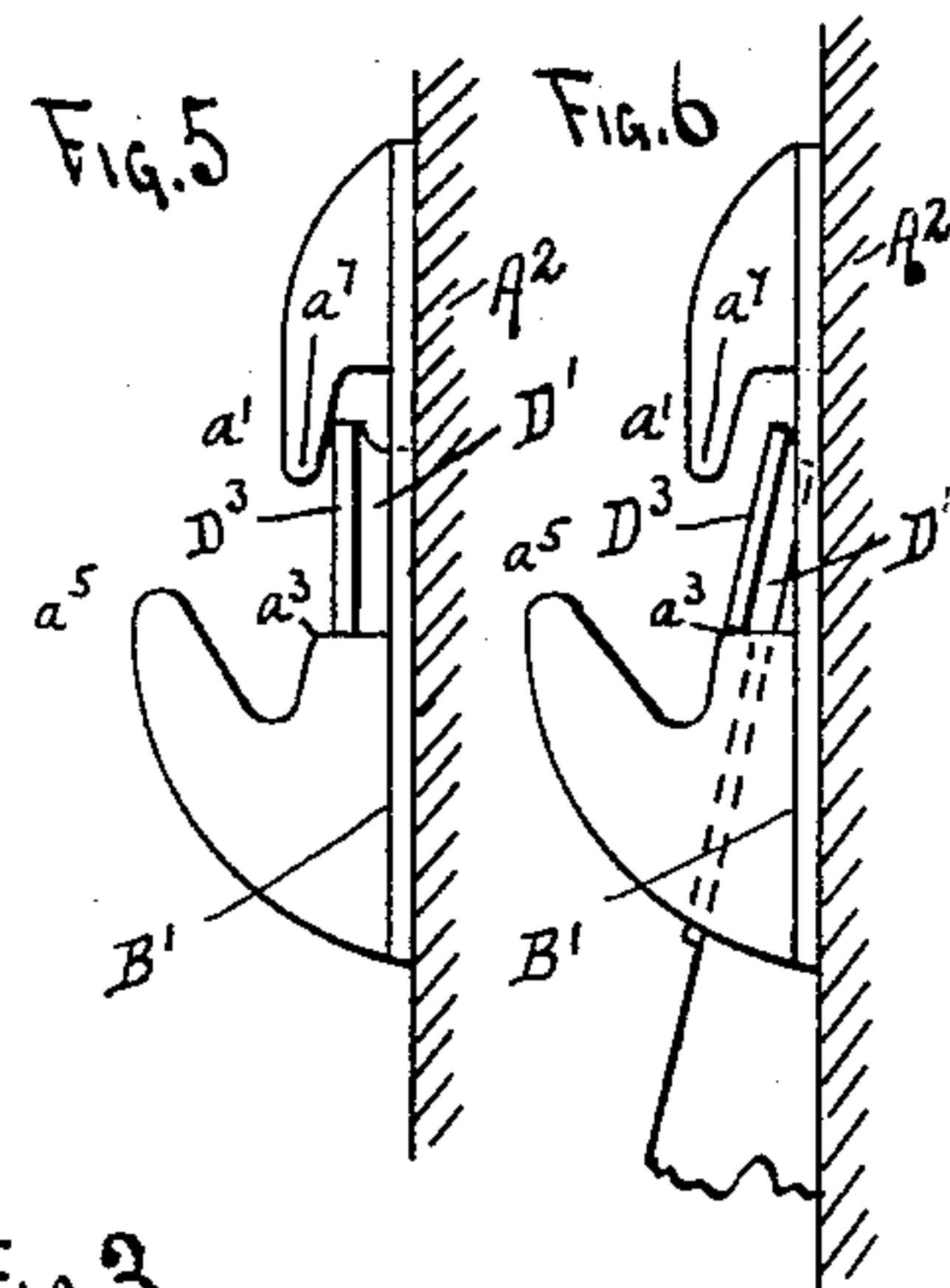
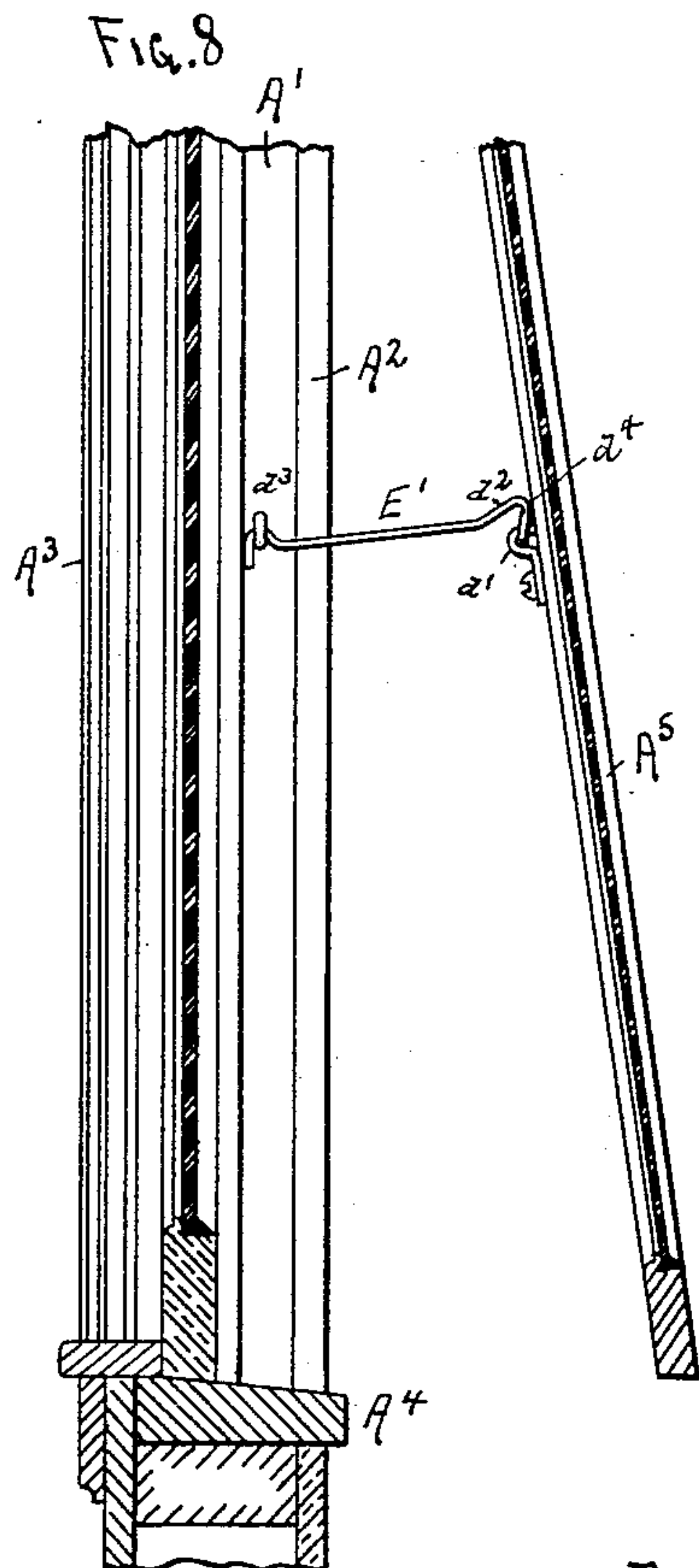
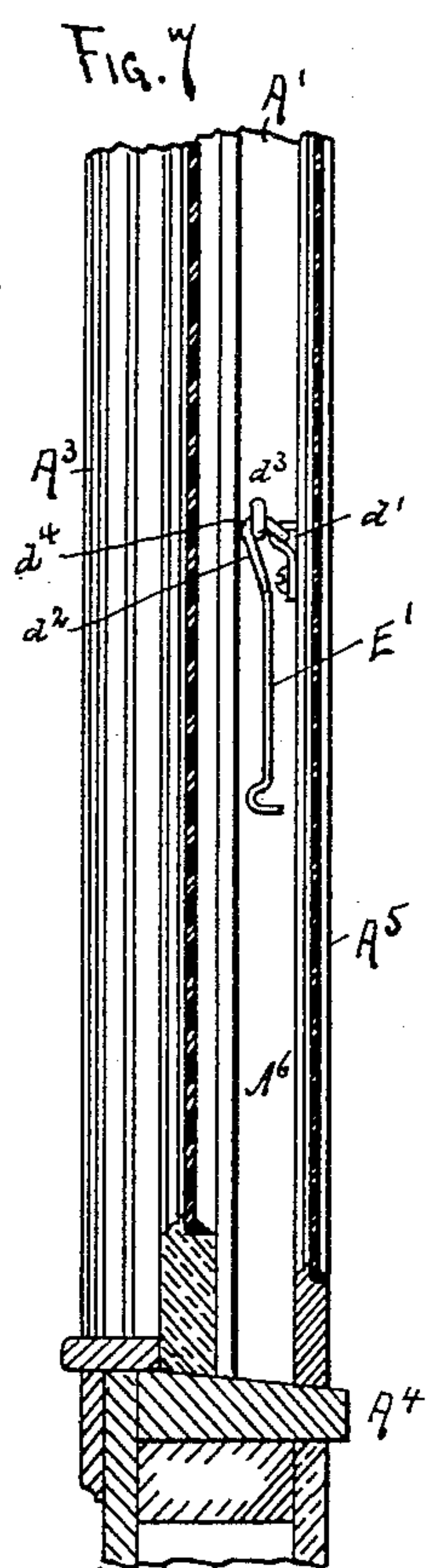
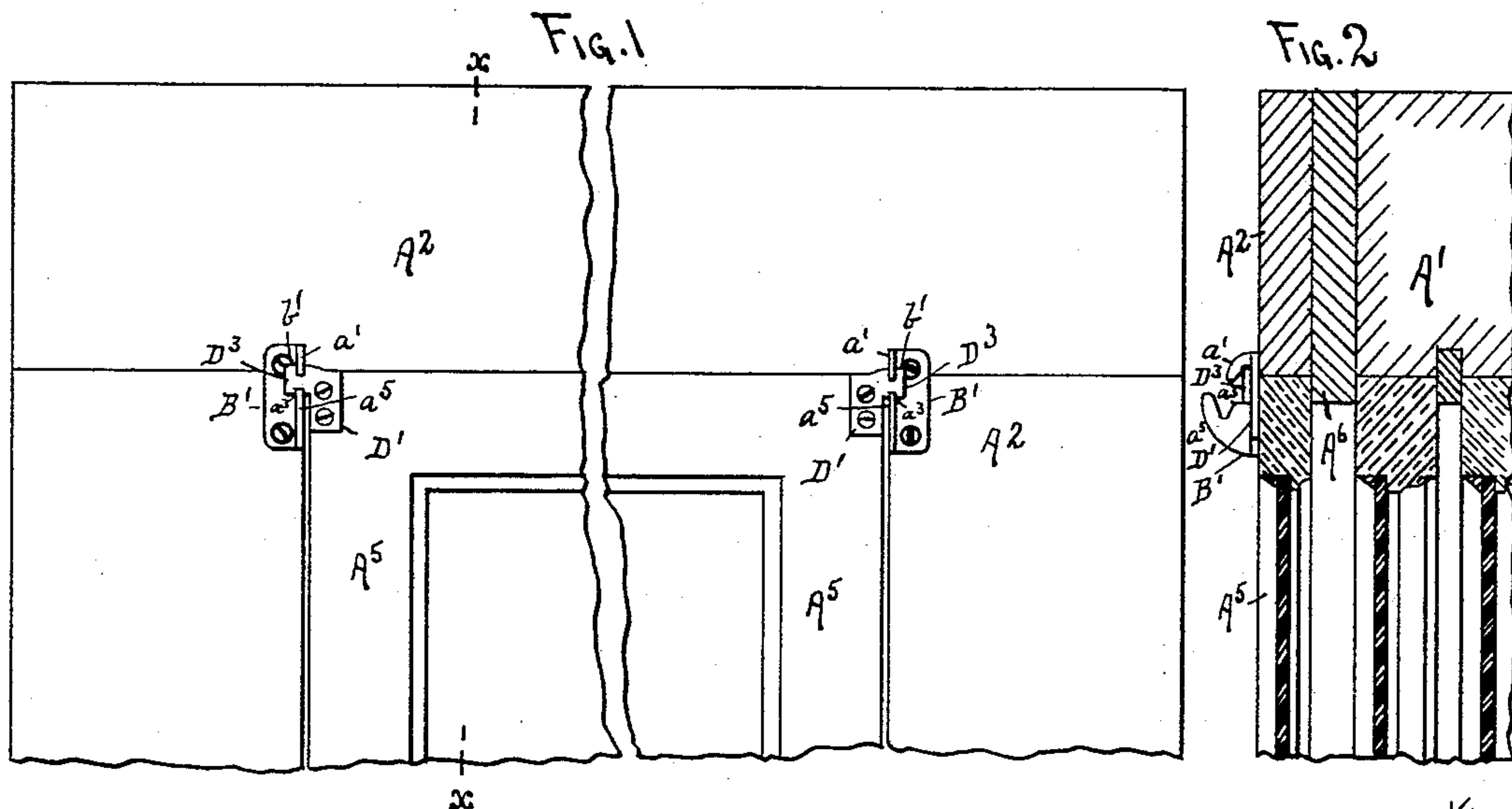


(No Model.)

J. D. BRAINARD.
STORM SASH AND WINDOW SCREEN HANGER AND OPERATOR.
No. 591,799. Patented Oct. 12, 1897.



G. A. Burnett,
Henrik Wallin

WITNESSES.

Julius D. Brainard
INVENTOR.
By Charles W. Woodward
Att'y.

UNITED STATES PATENT OFFICE.

JULIUS D. BRAINARD, OF ST. PAUL, MINNESOTA.

STORM-SASH AND WINDOW-SCREEN HANGER AND OPERATOR.

SPECIFICATION forming part of Letters Patent No. 591,799, dated October 12, 1897.

Application filed August 27, 1895. Serial No. 560,641. (No model.)

To all whom it may concern.

Be it known that I, JULIUS D. BRAINARD, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have made certain new and useful Improvements in Storm-Sash and Window-Screen Hangers and Operators, of which the following is a specification.

This invention relates to window-screens and storm-sash; and it consists in the construction and arrangement of the hangers by which they are supported and the means by which they are operated, as hereinafter shown and described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a foreshortened view of the upper outer corners of a window-casing and a storm-sash with my improvement attached thereto. Fig. 2 is a longitudinal section on the line xx of Fig. 1. Fig. 3 is a perspective view, enlarged, of the part attached to the sash, and Fig. 4 is a perspective view, on the same scale, of the part attached to the window-casing. Fig. 5 is a side view, on the same scale as Figs. 3 and 4, of the two parts, showing the sash closed; and Fig. 6 is a similar view showing the sash swung open for ventilation. Fig. 7 is an enlarged sectional detail of a portion of one of the side rails of the sash and the window frame and casing with one of the intermediate sash-holding cam-levers attached and holding the sash closed, and Fig. 8 is a similar view showing the cam-lever disengaged.

A' is the frame, A^2 the outside casing, A^3 the inside casing, A^4 the stool, and A^5 the storm-sash, all of the usual construction.

Attached to the outside casing about opposite the upper corners are two parts B' , formed right and left and having downwardly-trending hooked projections a' at right angles thereto at their upper ends and with shouldered stops a^3 at right angles thereto at their lower ends, leaving sockets or cavities between them, as more clearly shown in Fig. 4. Projecting from the shouldered stops a^3 are upwardly-trending safety-hooks a^5 , as shown. Attached to the upper outer corners of the storm-sash A^5 are two plates D' , having projections or lugs d^3 adapted to fit into the cavity between the hooks a' and shouldered stops a^3 , by which means the sash is supported, as

shown in Figs. 1, 5, and 6. By this simple arrangement a storm-sash may easily be placed in position from the interior of the house and without the use of ladders or other appliances from the outside, a very desirable advantage, especially in the case of windows in the second or higher stories of buildings.

The shouldered stops a^3 are formed wide enough so that the sash may be pushed out at the bottom for a considerable distance before the lower edges of the lugs D^3 leave the shouldered stops, as shown in Fig. 6. Thus the lugs riding on the shoulders act as hinges to permit the sash to be swung outward at the bottom for ventilation without unshipping the lugs from the shouldered stops. At the same time if the lower end of the sash be pushed farther out the lugs will slip off from the shouldered stops and allow the sash to drop down until the lugs D^3 catch on the hooks a^5 , which will also free the lugs from the upper hooks a' and enable the sash to be easily removed from the window.

The upper edges of the lugs D^3 project slightly above the main portions of the plates D' , as shown at b' in Fig. 1.

The inner edges of the hooks a' are inclined from the points a' inward, as shown in Figs. 4, 5, and 6, so that the upper end of the sash will be drawn closely into its place against the outside stops A^6 when the lower end is brought home in closing the window.

Means should be provided for holding the sash closed and for supporting it in its open position for ventilation, as shown in Figs. 7 and 8, and these holding devices should be so arranged as to have the power of drawing the sash close home against the stops to exclude the cold or moisture. I have shown a simple and effective means of accomplishing this result consisting of a lever E' , pivoted by one end at d' to the sash and with inclined or cam surface d^2 near the pivoted end fitting through a screw-eye or staple d^3 in the stop A^6 or in the stool A^4 , or both, as circumstances may require.

The outer end of the lever E' is formed into a hook d^4 , adapted to catch into the eye d^3 when the sash is opened to support it open, as in Fig. 8.

The effect of turning the lever downward parallel to the sash, as will be readily under-

stood, is to "draw" the sash A^5 home against the outside stop A^6 and hold it firmly in place, as shown in Fig. 7. It will also exert considerable force upon the sash to draw it home even when warped or sprung. The locking cam-levers may be employed at as many points upon the sash as may be required upon the sides or upon the bottom. By this means the sash A^5 may be opened and "locked" open, as in Fig. 8, or closed and locked closed, as in Fig. 7.

The point d^4 will be long enough to press against the sash when the lever is elevated, as in Fig. 8, to cause the hook d^3 to press downward with sufficient force to be held in place and prevent the accidental removal of the lever from the staple, while at the same time leaving the lever free to be readily removed by the exercise of some force.

While I have shown the device attached to a storm-sash, it will be equally as effective for window-screens.

Having thus described my invention, what I claim as new is—

1. Socket-plates attached to the window-casing and having depending hooks and shouldered stops, and lugs attached to the

sash and adapted to fit behind said hooks and resting upon said shouldered stops, whereby the sash is supported and capable of being swung open at the bottom for a sufficient distance for ventilation without unshipping said lugs, substantially as and for the purpose set forth.

2. Socket-plates attached to the window-casing and having depending hooks and shouldered stops, and lugs attached to the sash and adapted to fit behind said hooks, and resting upon said shouldered stops, and safety-hooks projecting from said socket-plates beneath said shouldered stops, substantially as and for the purpose set forth.

3. A lever having a cam-surface near one end and pivoted to a storm-sash, and a pin upon the window-frame over which said cam-surface may be placed, to draw the sash home when the lever is actuated, and a hook upon the outer end of the lever adapted to support the sash open for ventilation, substantially as and for the purpose set forth.

JULIUS D. BRAINARD.

In presence of—

C. N. WOODWARD,
A. LINDAHL.