

No. 687,788.

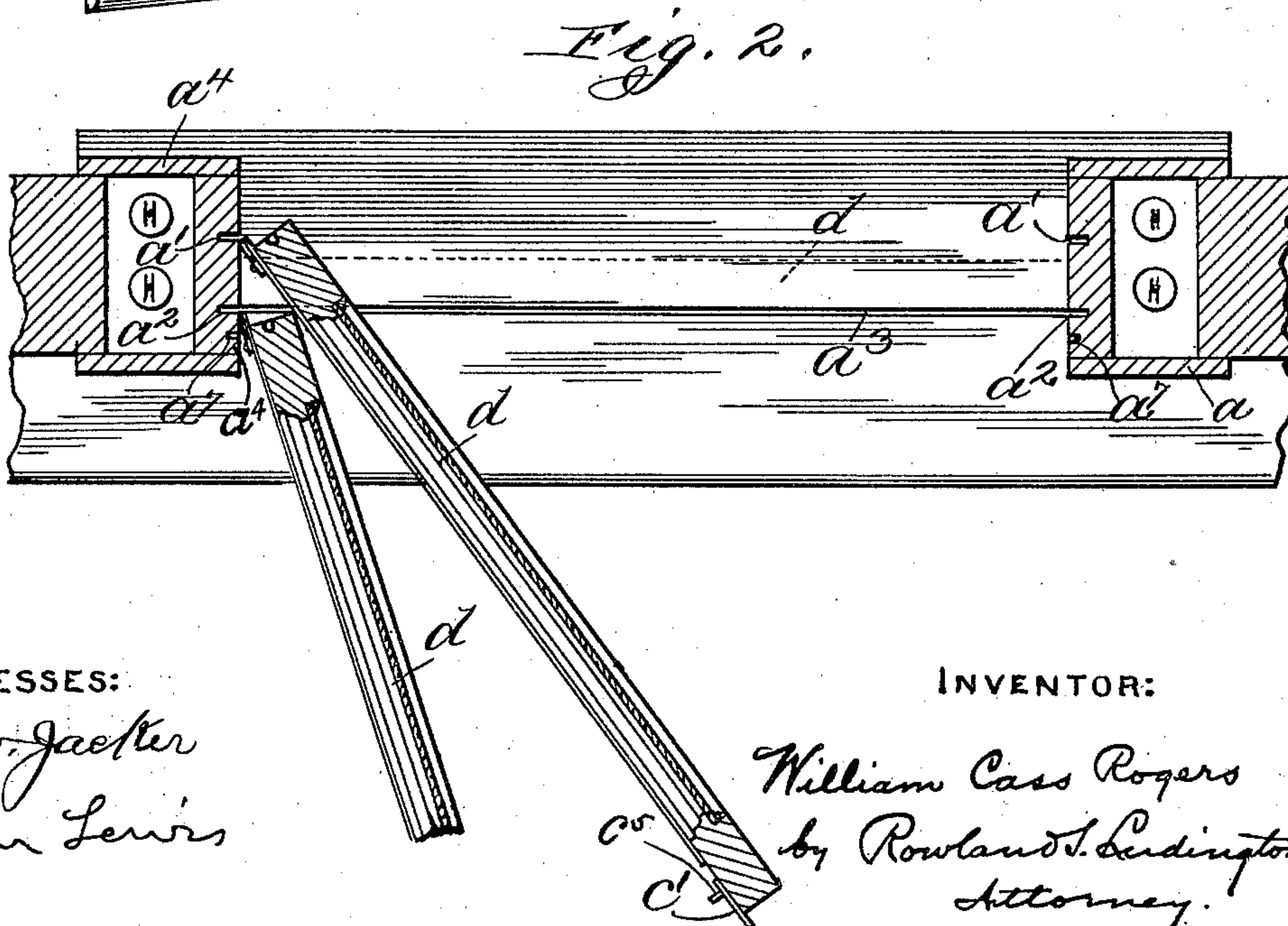
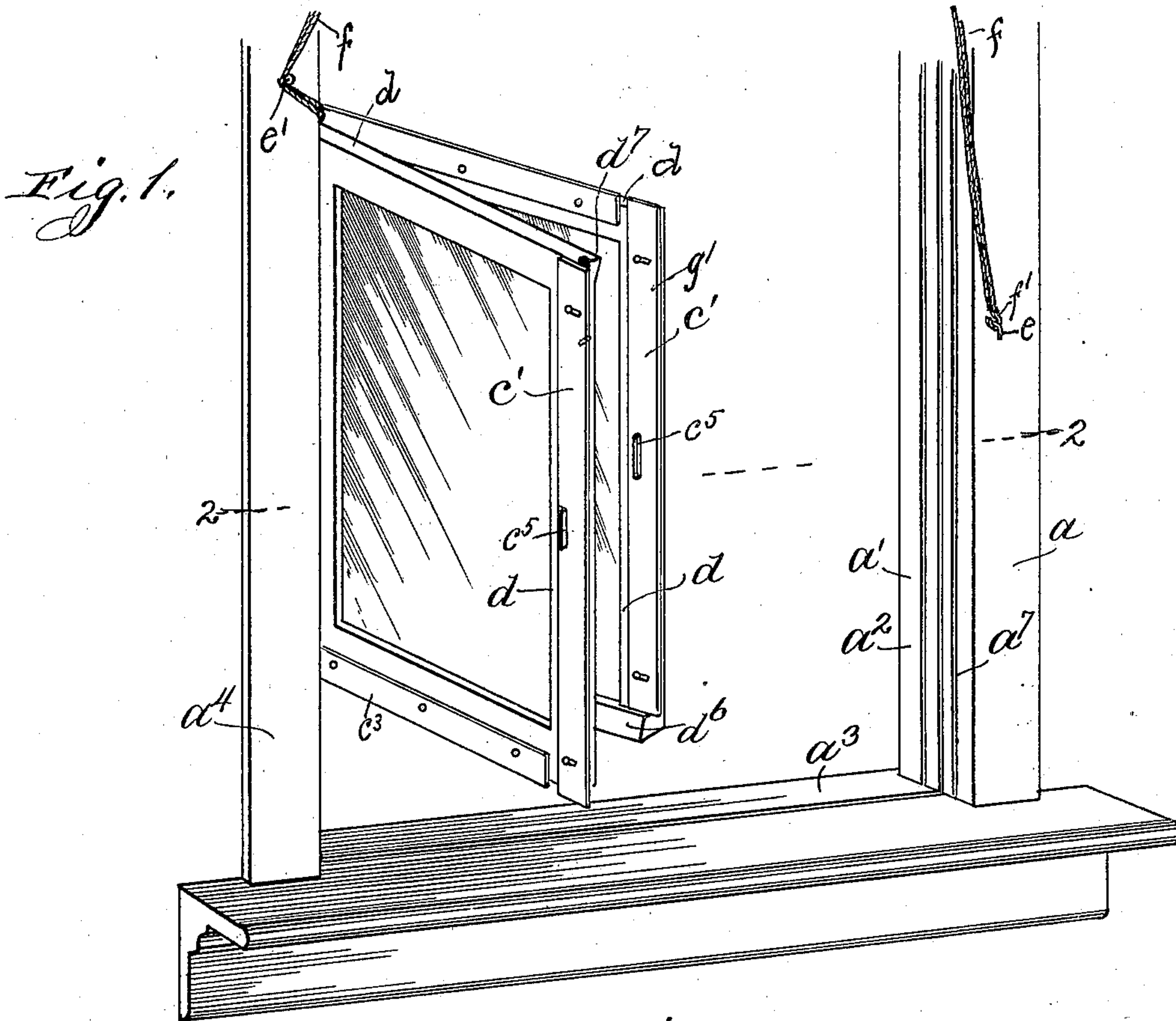
Patented Dec. 3, 1901.

W. C. ROGERS.
WINDOW.

(Application filed Nov. 24, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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W. C. ROGERS.
WINDOW.

(Application filed Nov. 24, 1900.)

2 Sheets—Sheet 2.

(No Model.)

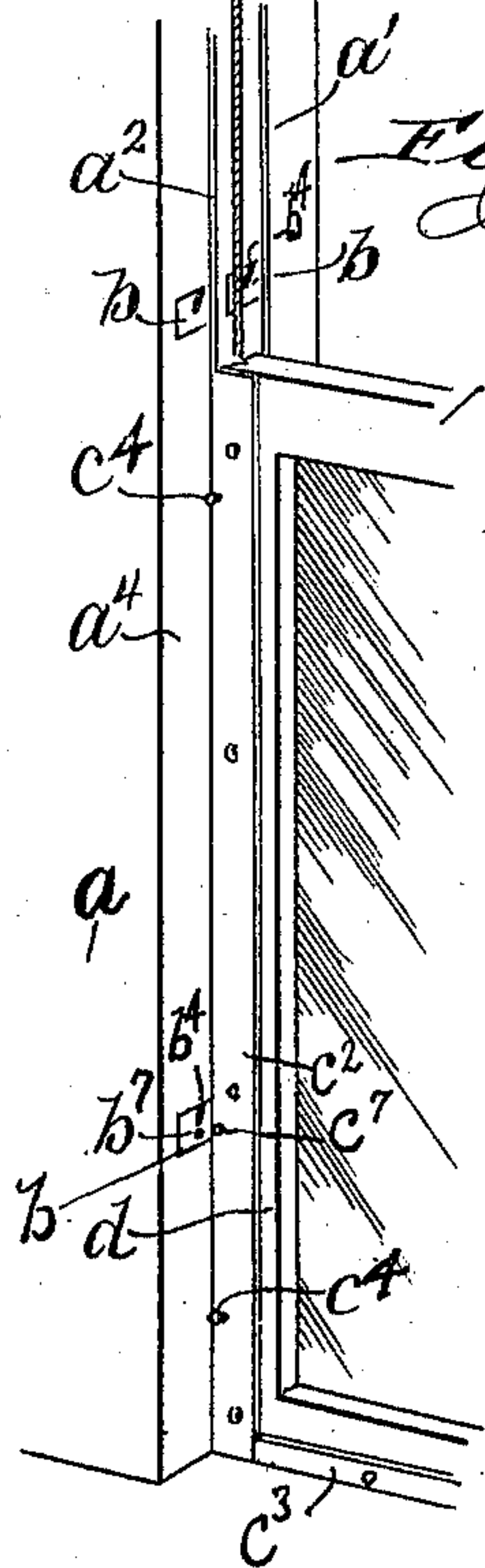


Fig. 3.

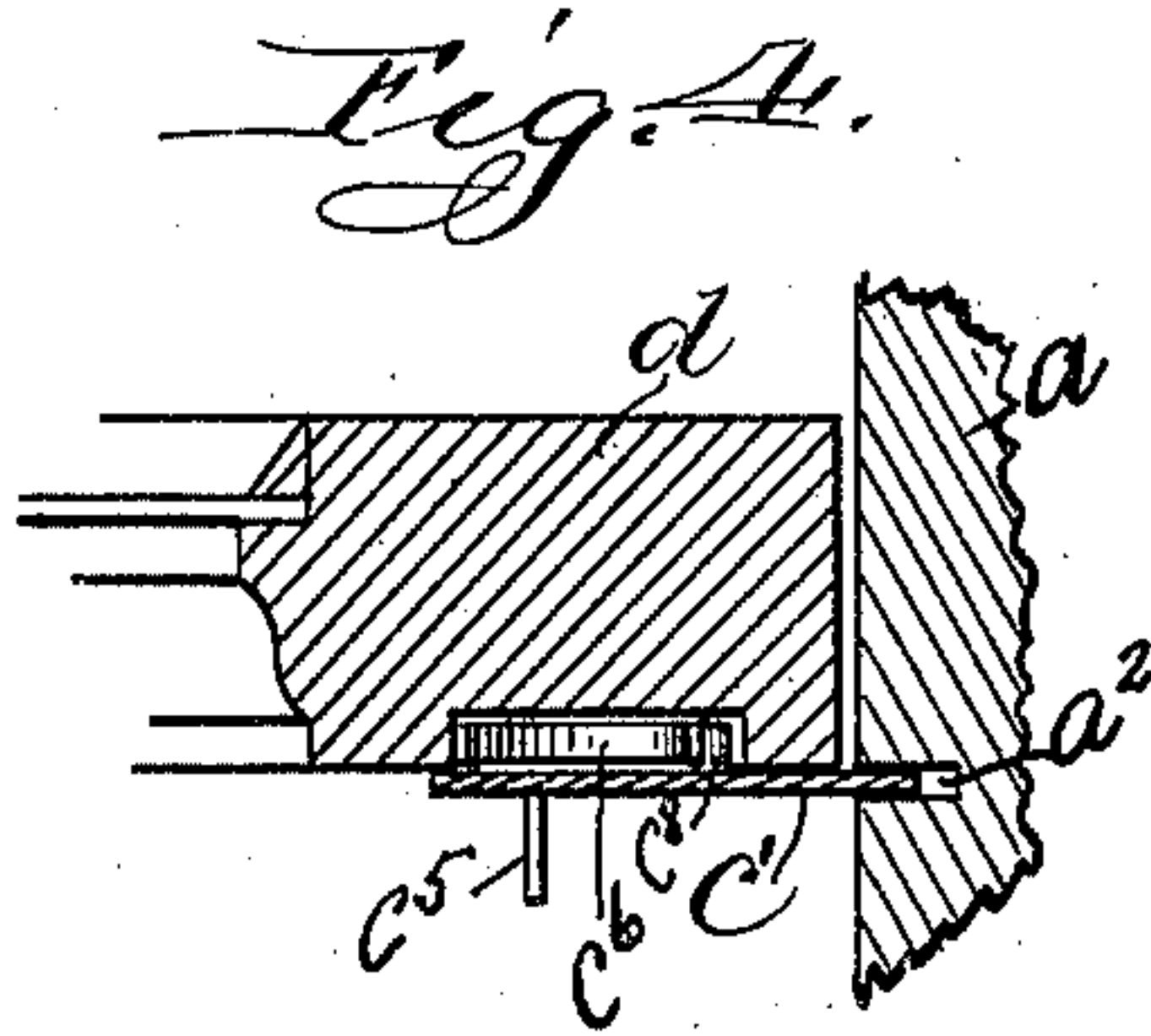


Fig. 4.

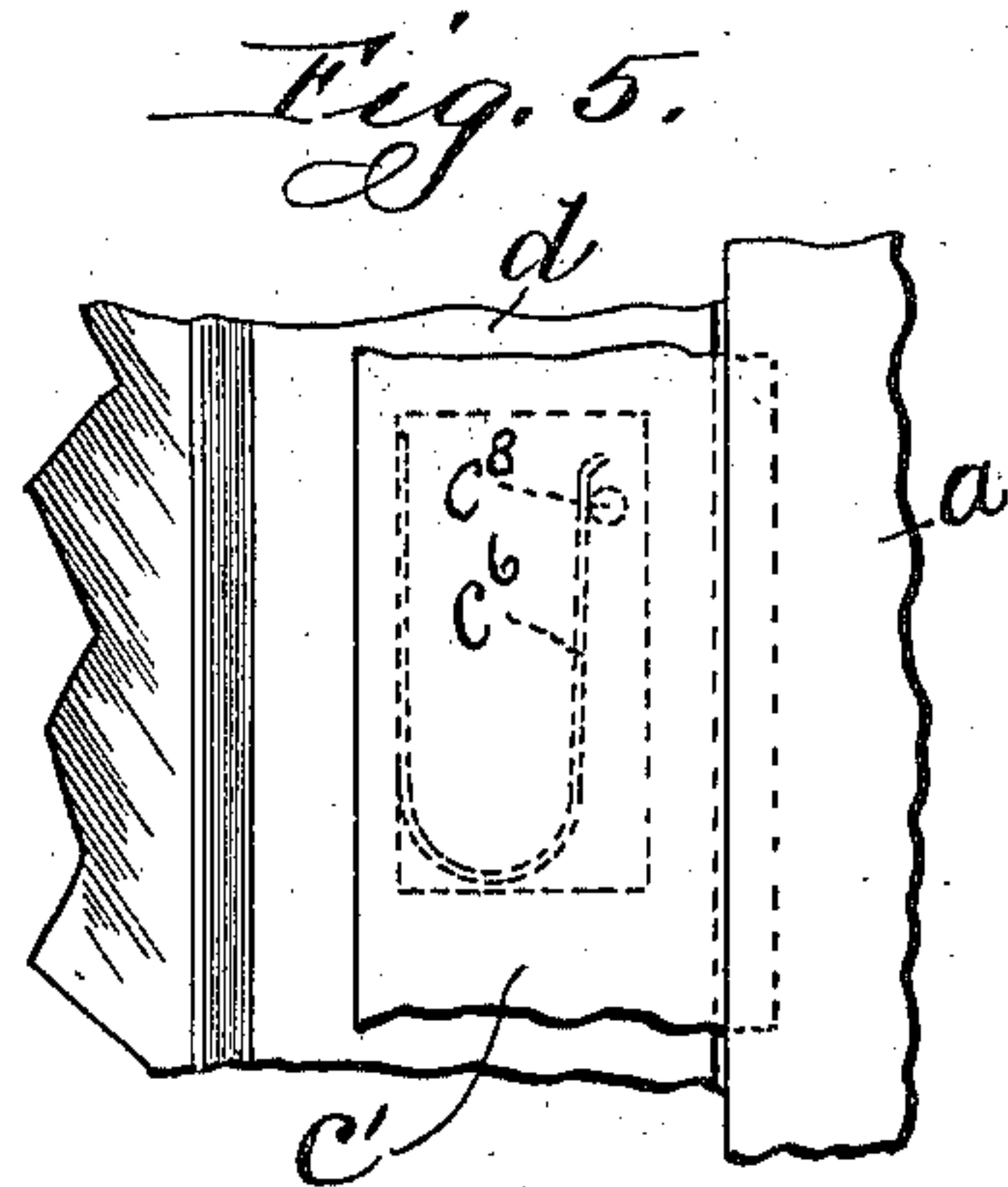


Fig. 5.

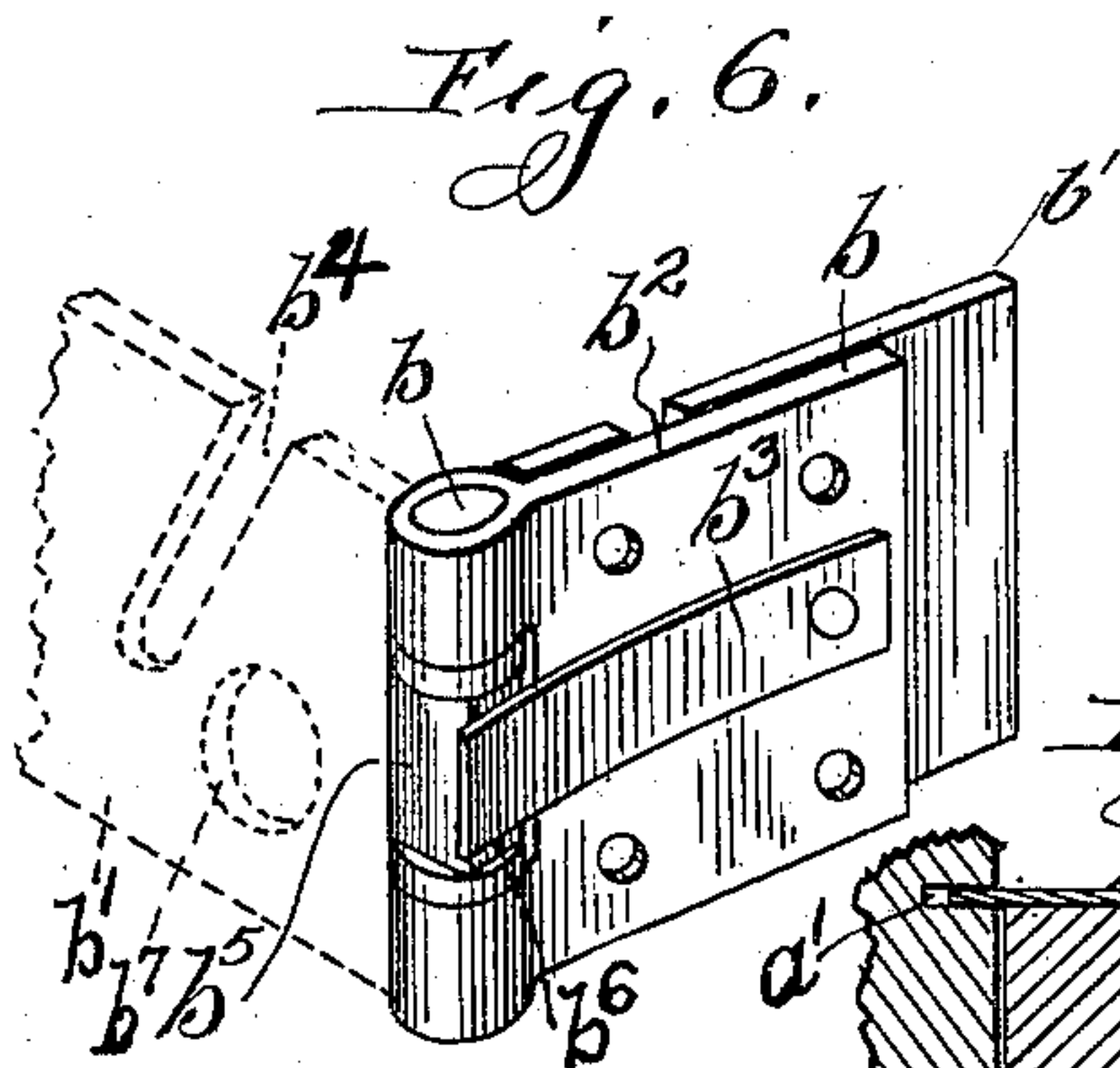


Fig. 6.

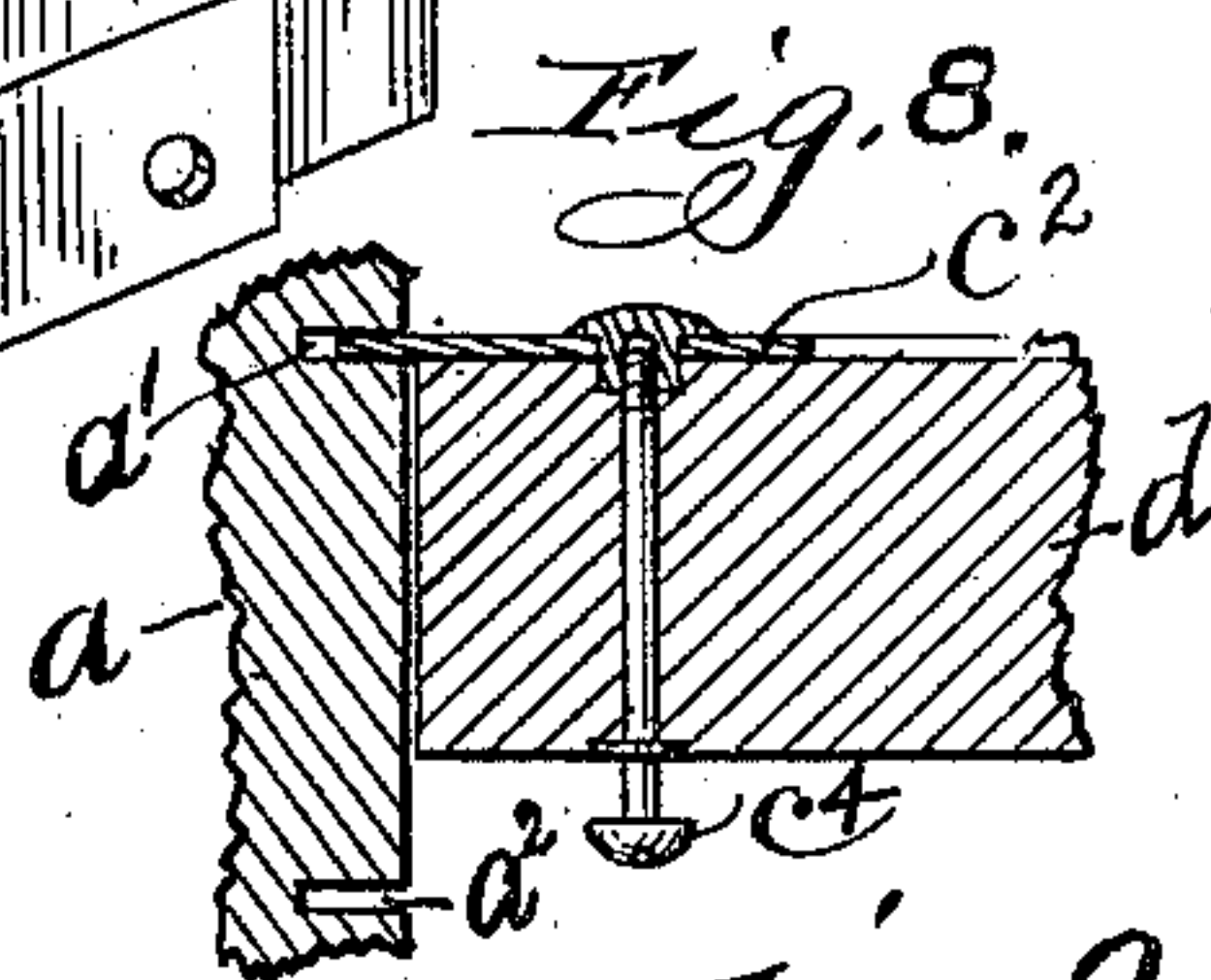


Fig. 8.

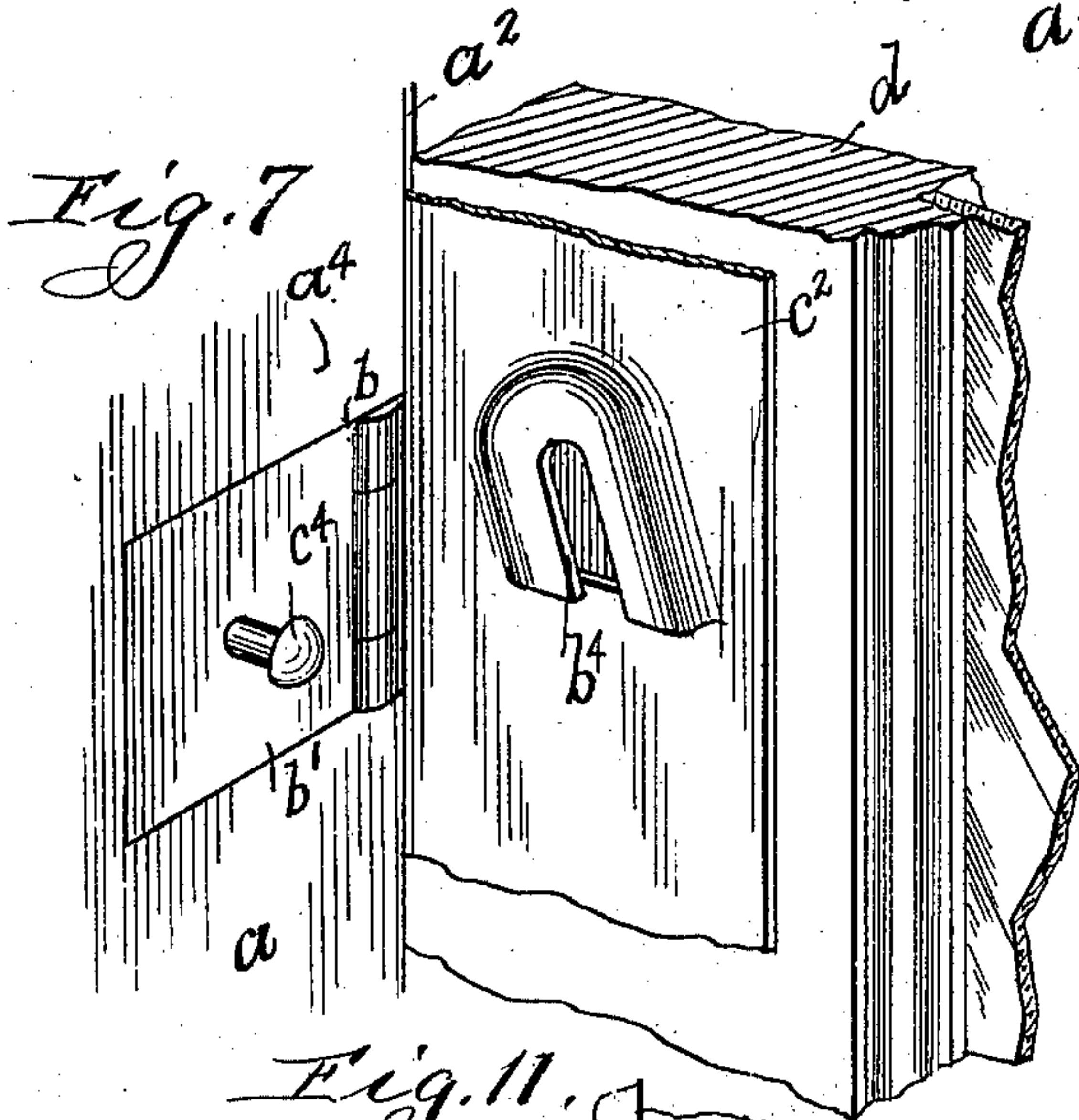


Fig. 7.

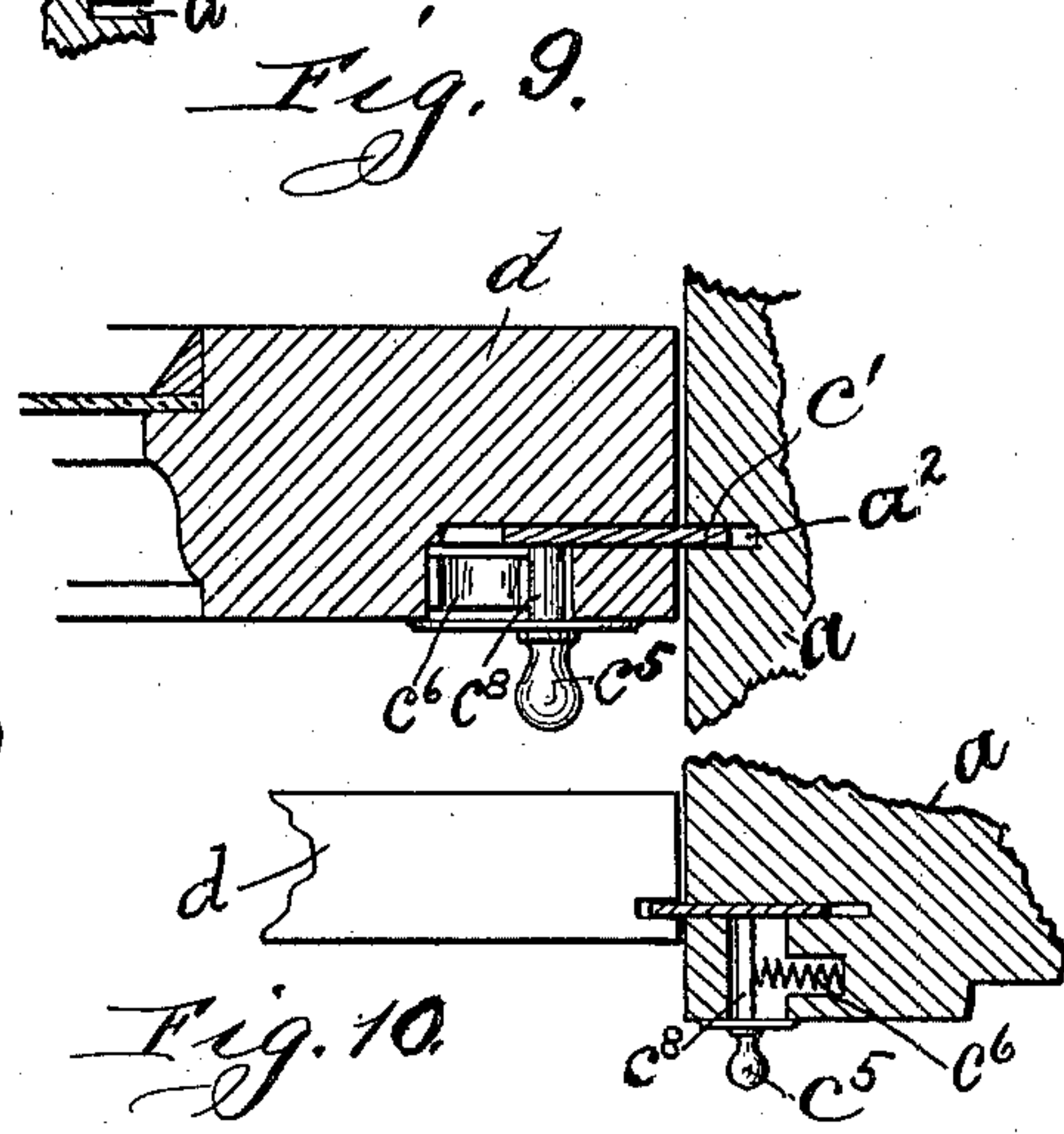


Fig. 9.

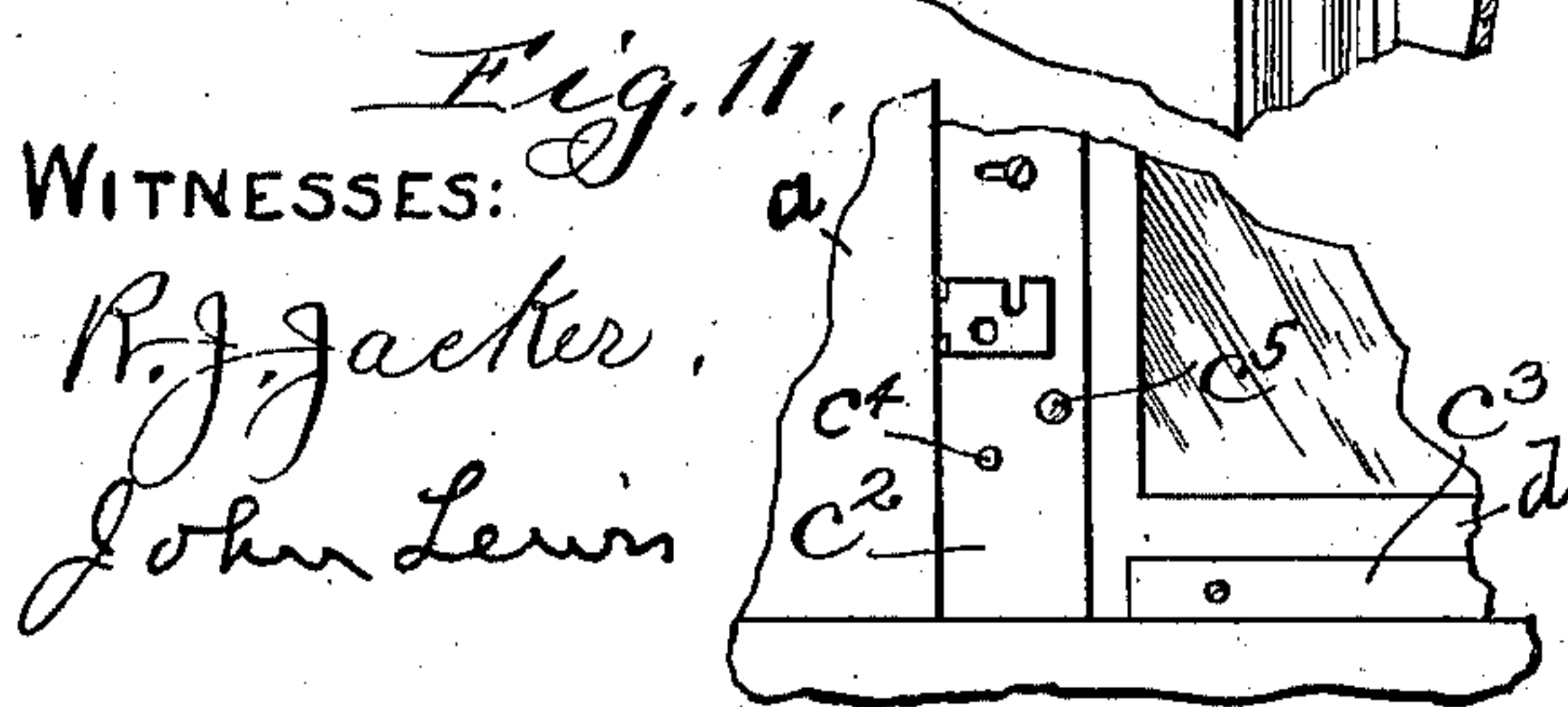


Fig. 11.

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UNITED STATES PATENT OFFICE.

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WINDOW.

SPECIFICATION forming part of Letters Patent No. 687,788, dated December 3, 1901.

Application filed November 24, 1900. Serial No. 37,622. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CASS ROGERS, a citizen of the United States, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Windows, of which the following is a specification.

My invention relates to improvements in windows, in which I provide metallic flanges and very narrow grooves therefor between the stationary frame and the movable sash or curtain. One or more of the flanges are retractable, and between the sash and frame are hinges adapted in one position to hang the movable part or sash, whereby the same may be swung out from the frame upon the retraction of the movable flange.

The object of my improvement is to provide a simple, cheap, and easily-manufactured window with the movable parts tight-fitting and easily operated; also, to secure a sash that may be readily and easily swung side-wise out from the frame for cleaning, painting, and replacing lights. This is particularly desirable in buildings of more than one story, where in order to reach the entire outside of the window it is usually necessary to climb out on the ledge or sill at the risk of falling.

In the device of my invention in the preferred construction I provide metal flanges between the frame and the movable part of the window to form with the very narrow slot or groove in the other part the guideway along which the movable part travels. By having the flange of metal a tight, cheap, strong, and efficient joint is obtained with but a minimum amount of friction. By having one of the flanges movable and by having hinges between the frame and the sash adapted in one position to engage the sash I am enabled to swing the sash sidewise out from the frame, so that the light can be cleaned, replaced, or the sash painted on both sides from the inside and without the discomfort or danger that ordinarily accompanies such actions.

I have illustrated my invention in the accompanying drawings, in which—

Figure 1 is a view in perspective, showing the sash swung out from the frame. Fig. 2 is a sectional view on line 2 2, Fig. 1. Fig. 3

is a view of a portion of the frame and sash, showing location of the hinges. Fig. 4 is a sectional view of one of the side pieces of the sash, showing in section the movable flange and the handle and spring by which the flange is operated. Fig. 5 is a side view showing position of the spring. Fig. 6 is a detailed view of one of the hinges. Fig. 7 is a modification of the hinge with the button on the hinge and the slot in the sash. Fig. 8 is a modification in section, showing flange on the outer side of sash and the means of securing same from the inside. Fig. 9 is a modification showing the flange recessed in the sash. Fig. 10 is a modification showing the flange recessed in the frame, and Fig. 11 is a modification where both of the upright flanges are movable.

Like letters refer to like parts in the several figures.

The stationary window part or frame *a*, Fig. 1, is provided with the saw cuts or slots *a'*, *a²*, and *a³*, and except for these slots or grooves the inner surface of the frame is flush. On one of the upright members of the frame *a⁴* the hinges *b b* are mounted in proximity to the slots *a' a²*. The hinge *b* in the preferable construction is provided with a slanting slot *b⁴* in one of its members or leaves *b'*, which slot *b⁴* is adapted to engage when the hinge is open and the sash is lowered the button *c⁴* on the sash or movable part *d*. The hinge *b* is also provided with the flat spring *b³*, properly attached to one of the hinge leaves or members *b²* and adapted to contact with the two plane surfaces *b⁵ b⁶* on the other hinge leaf or member, whereby the hinge is normally held either closed, as illustrated in Fig. 3, or is held open at an angle of ninety degrees, as illustrated in Fig. 6 by the dotted lines. The sash *d* is provided on two edges with the metal flanges *c² c³* and on one edge with the movable metal flange *c'*.

The fourth edge in windows having two sliding sashes does not of course need a flange, as the ordinary lips *d⁶ d⁷* make a sufficiently tight joint when the window is closed.

The movable flange *c'* is mounted on the edge of the sash *d* opposite the edge adjacent to the hinges *b b* and is laterally movable to a distance a little greater than the depth of the grooves *a' a²*. The handle *c⁵* is provided

on the movable flange c' , whereby the flange may be retracted or drawn back out of the groove a^2 when it is desired to swing the sash out from or into the frame. Connected with the movable flange c' by the pin c^8 is the spring c^6 for holding the movable flange normally out from the sash.

The weight-cords f for the sash are provided on the ends with a bent portion f' for engaging the sash. In the sash at the place where the weight-cord is usually attached is a screw-eye or horizontal pin g' , on which the end of the cord is hooked by means of the bent portion or hook f' . This construction is simple and enables the weight-cords to be disattached without any difficulty or loss of time. On the face of the frame a are provided pins or hooks $e e'$, on which the weight-cords may be hooked when the sash is to be swung out. The cords may also be the more readily reached on the pins e and e' when it is desired to connect the weights with the sash after having the sash swung out.

In the operation of the device of my invention (the sash and cords being in place) the hinges are folded back against the frame and the sashes are raised so that the buttons $c^4 c^4$ are above their corresponding hinges $b b$. The hinges are then opened. The inner or lower sash is then lowered until the buttons $c^4 c^4$ engage the top of the slanting slots $b^4 b^4$ on the hinges $b b$. Then the button or handle c^5 on the movable flange c' is pressed backward against the spring c^6 to retract the movable flange, and the sash is pulled outward (and slightly downward) from the frame a , the button c^4 being permitted to follow down the slanting slot b^4 . The slot b^4 being slanting will cause the sash to move laterally and outwardly, so that the fixed flange c^2 does not remain in its groove a^2 to bind the movement of the sash in its swinging outward, nor can the flange be bent by engagement with the sides of the groove a^2 when being so moved. When the edge of the sash provided with the movable flange is brought out from the frame, the end of the weight-cord can then be detached and caught on the hook e , while the opposite weight-cord can be pulled down and hooked over the pin e' on the frame a , whereby the weight and cord will then act as a spring to hold the sash out or open. For opening the other sash the operation is exactly the same. In practice I preferably have the hinges located high enough so that a pail may be set on the sill and be cleared by the bottom of the sash. This enables a window-washer to clean the lights with the least amount of exertion and movement. In returning the sash to the frame the operation above described is reversed. The weight-cord over the pin e' is released. The other weight-cord is attached to its pin g' in the sash d . The sash is then swung into the frame as the handle c^5 and the movable flange c' are retracted, while the window is raised slightly, so that the button c^4 will rise out of

the slanting slot b^4 to enable the fixed flange c^2 to enter its groove a^2 . The sash meanwhile may be pushed into position and until the movable flange c' is opposite its groove a^2 , when the handle c^5 is released and the sash is in position. The hinges are then thrown back or folded, and the window is as far as appearances similar to all other windows in its operation and office. It will be observed that the same result can be obtained by having the slot on the sash and the button on the hinge, as shown in Fig. 7, or a hook instead of a button, or by placing the hinge on the sash and the button on the frame, or by having the flanges on the frame and the grooves in the sash, and all such similar devices having the same function are considered as an equivalent construction within the purview of my invention.

By having the movable flange held outward a firm, continuous, and constant contact is secured for the flanges with their respective grooves, so that there is no space for play (and consequent rattling) of the sash, and neither is there space for air or dust to get around the sash past the window. This construction in practice has been found to give a uniform contact, that makes the sash very firm and steady, yet easily moved.

The fixed flange c^3 at the bottom (or top) of the sash fits into a corresponding groove in the sill (or in the top of the frame) and becomes a very cheap, strong, and efficient weather-strip, as well as assisting to hold the sash rigid when the window is closed.

By placing the hinges lower on the frame, so that when the sash is mounted on the hinges the sash will just clear the sill, an efficient lock can be made for the lower sash by lowering the sash until the buttons $c^4 c^4$ are below the hinges $b b$ and then opening the hinges $b b$. It will be observed that by this operation it will be impossible to raise the window from either side above the hinges without closing the hinges or without breaking either the buttons or the hinges, which would require great power. The same result can also be obtained by the hole b^7 in the hinge b , Fig. 3, adapted to engage the button c^7 in the sash when the window is closed. Upon opening the hinge and engaging the buttons $c^4 c^4$ or c^7 by the hole b^7 it would be impossible to move the window either up or down. By this means also weights and cords may be dispensed with in windows having light sash, for the sash can be held open at several different heights by means of the buttons $c^4 c^4 c^7$ and the two hinges $b b$.

By having the strength of the spring c^6 stiff the flange may also be used as a catch for holding up the sash at various positions.

Instead of being fixed the flange c^2 may also be made retractable, (see Fig. 11,) in which case the slot in the hinge could be made straight instead of on a slant without departing from the spirit of my invention. It will be observed that the curtains may also

be guided by the narrow slot a^7 , and in Figs. 1 and 2 the slot a^7 for that purpose is illustrated.

By placing the flanges on the outside of the window-sash, as illustrated in Fig. 8, it would be of course practically impossible for burglars to get a jimmy under the sash to force it open.

The handle c^5 on the movable flange does not extend out beyond the lip in the lower edge of the upper sash. When there is no lip on the upper sash, a recess may be provided in lieu of the protruding handle, as illustrated in Fig. 1.

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

1. In a window having stationary and movable parts, of metallic flanges on one of said parts, and means for retracting said flanges, hinges between the parts and attached to one only of said parts, means on the other of the parts adapted to engage the hinge when in one position and means in connection with the engagement of the hinge adapted to laterally move the movable part as the said movable part of the window is swung sideways, substantially as described.

2. In a window having stationary and movable parts, of metallic flanges on one of said parts and means for retracting said flanges, hinges between the parts and attached to one only of said parts, means on the other of the parts adapted to engage the hinge when in one position and means adapted to retract the flange from the groove or runway as the movable part of the window is swung sideways, substantially as described.

3. In a window having stationary and movable parts, of metallic flanges mounted on the movable part, one only of which flanges is movable, hinges between the parts and permanently attached to one only of said parts, means on the other of said parts adapted to engage the hinge when in one position, and

means in connection with the engagement of the hinge adapted to retract the fixed flange together with the movable part of the window from the stationary part or jamb as the movable part or sash is swung sideways, substantially as described.

4. In a window having sash provided with fixed and movable flanges, a hinge on the window frame or jamb adjacent to the fixed flange and provided with a free leaf and with a slanting slot in said free leaf, a button on the sash adapted to engage the opening of the slot in the hinge and means for retracting the movable flange whereby the sash may be swung sideways and the button descend the slanting groove to move the sash and the fixed flange out and away from the jamb to which the hinge is attached, substantially as described.

5. In a window having stationary and movable parts of a hinge on one of said parts and permanently attached thereto, and having one free leaf, means on the other window part adapted to engage the free leaf of the hinge, when in one position, and a spring b^3 , on said hinge adapted to hold said hinge open or closed, substantially as described.

6. In a window the combination with a sash, of a hinge therefor provided with a slanting slot in one member and on the other member a spring adapted to hold the hinge closed or open and means on said sash for engaging said hinge by means of said slanting slot, substantially as described.

7. In a window the combination with the sash and the frame, of the flanges c' , c^2 , c^3 , the slots a' , a^2 , a^3 , the hinges b , and the buttons c^4 , substantially as described.

In witness whereof I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM CASS ROGERS.

Witnesses:

R. T. LUDINGTON,
DUNCAN M. MOORE.