

No. 610,257.

Patented Sept. 6, 1898.

E. T. BURROWES.

WINDOW SCREEN.

(Application filed Dec. 28, 1897.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

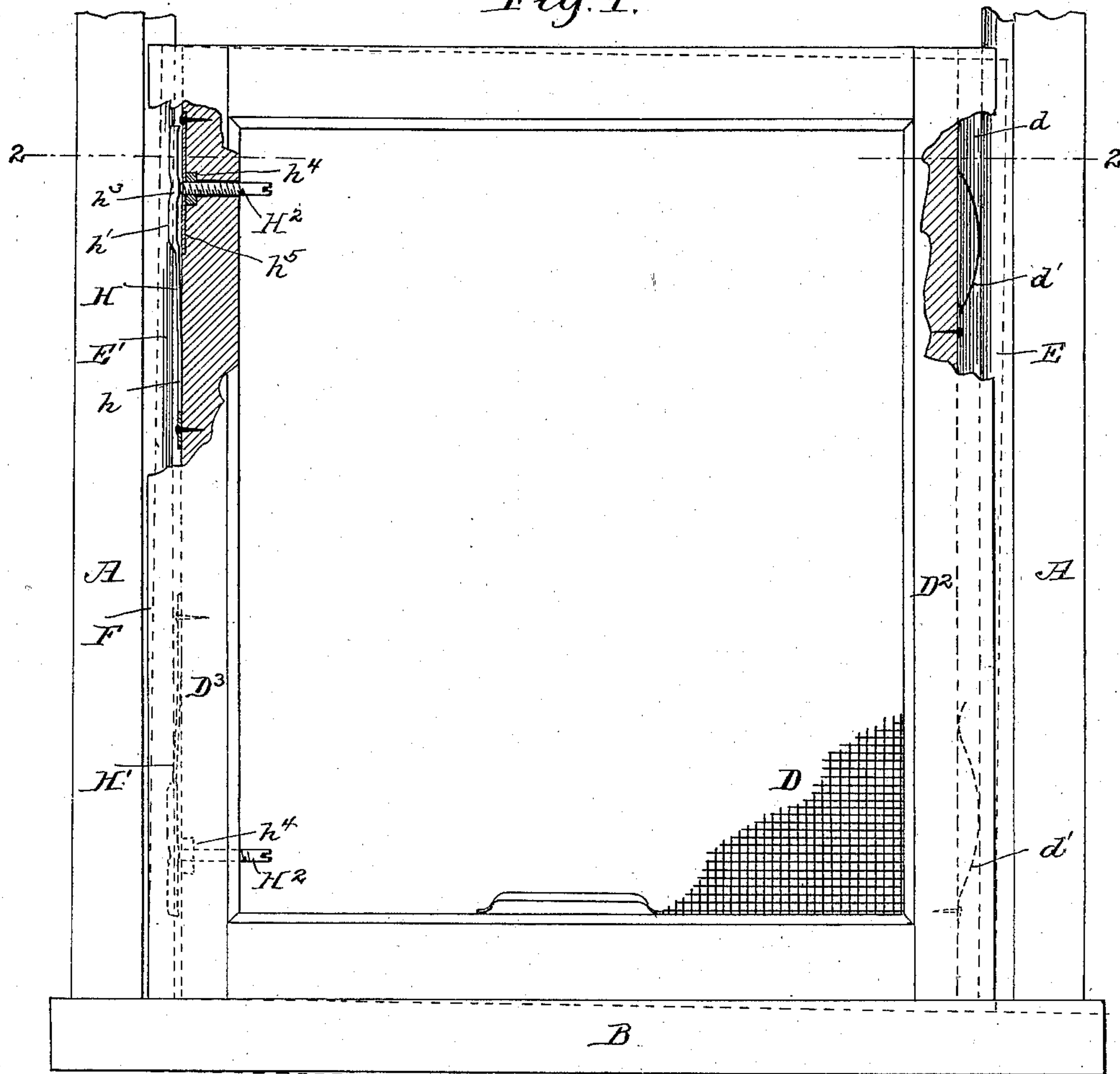
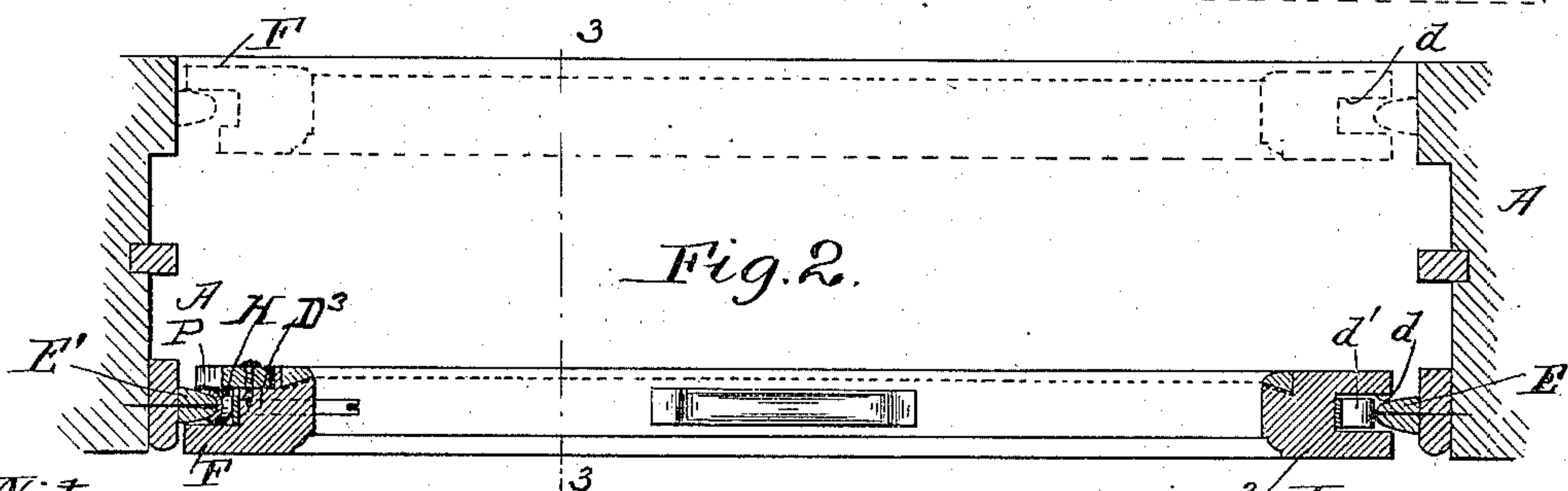


Fig. 2.



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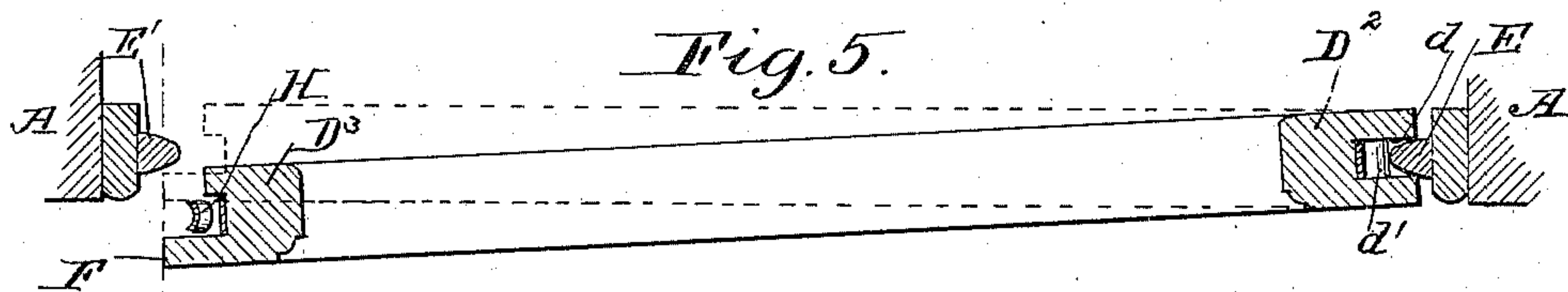
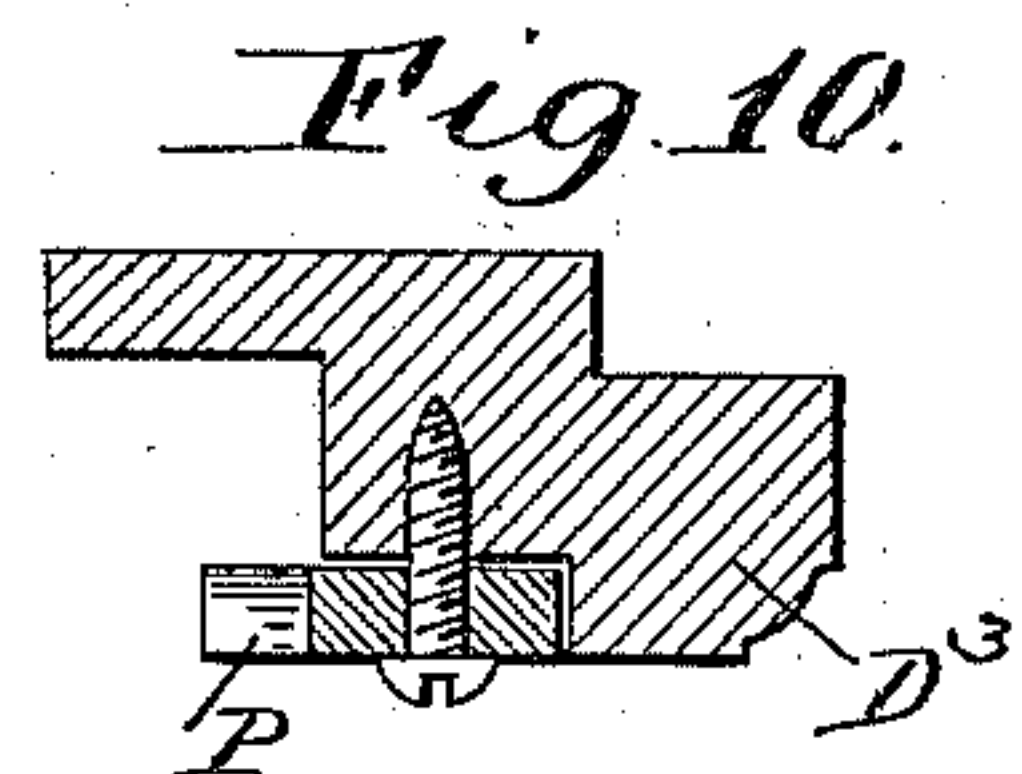
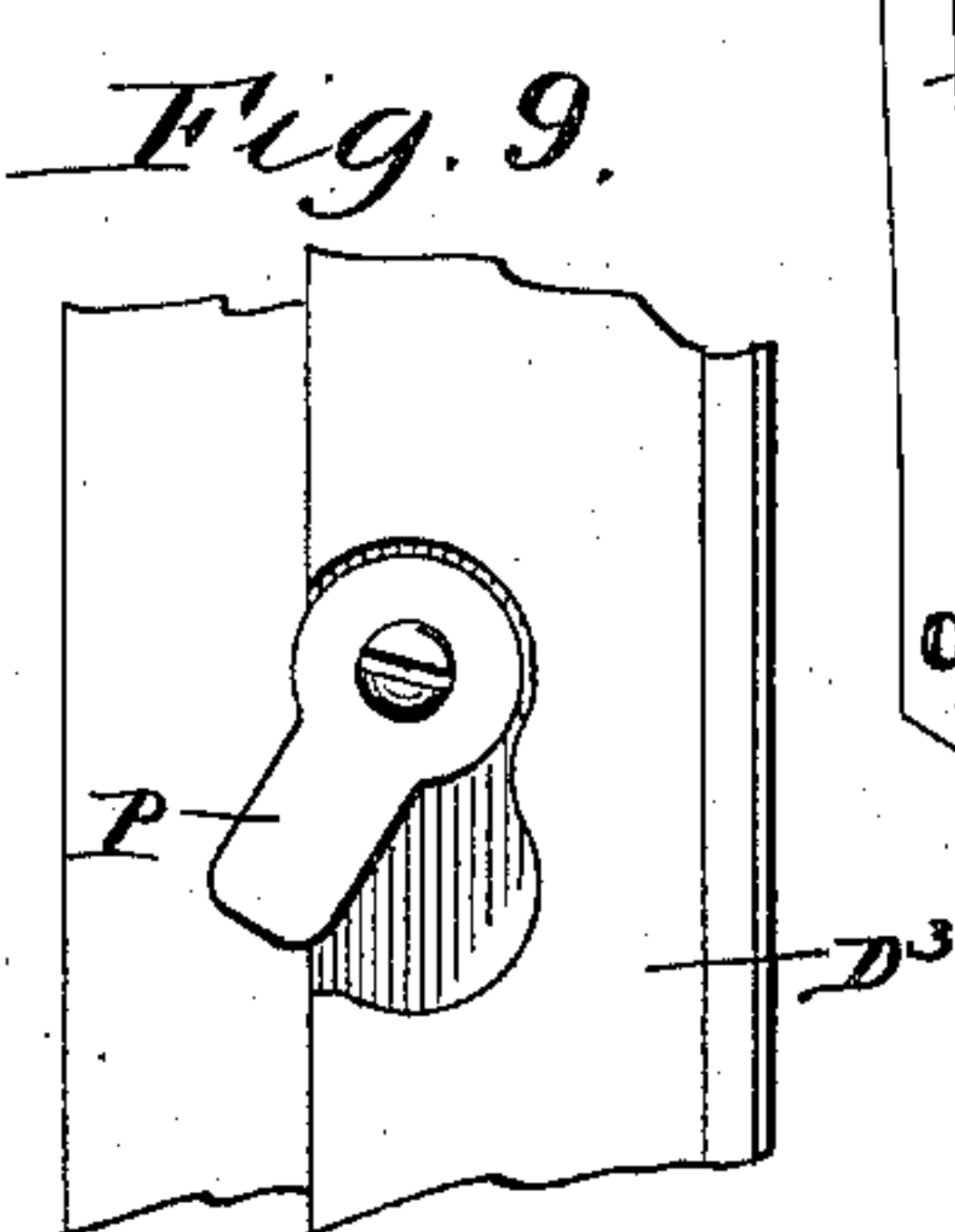
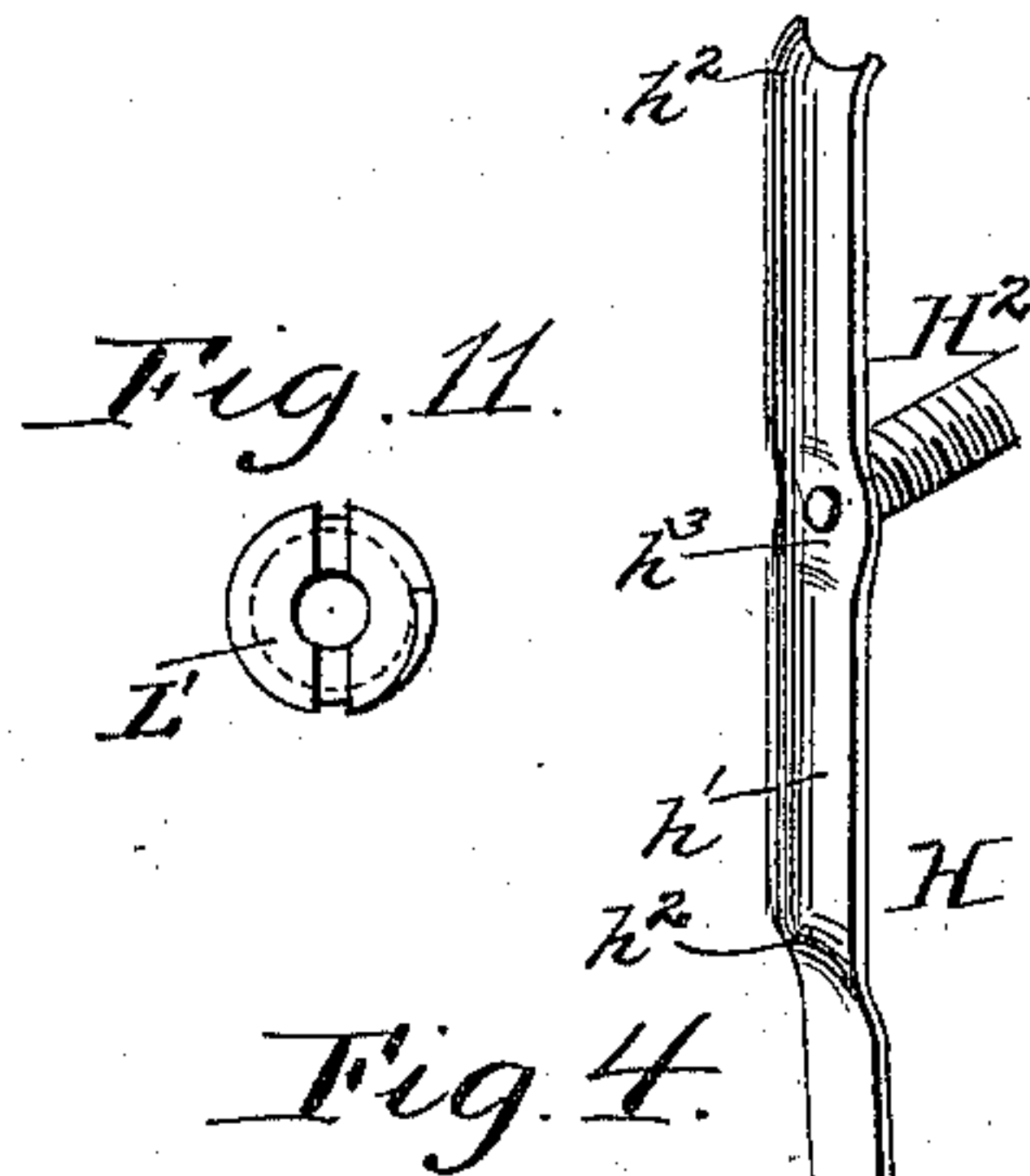
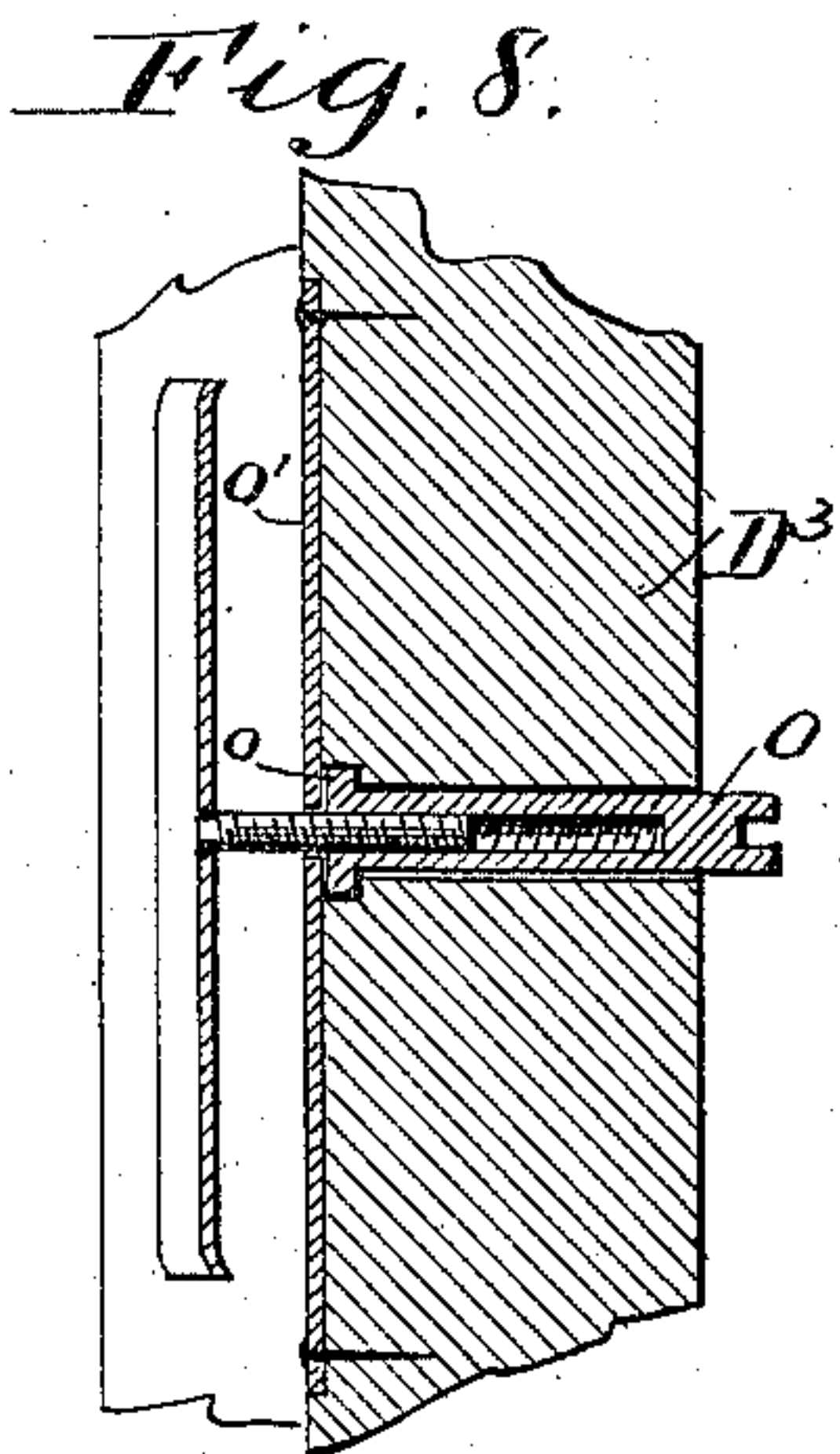
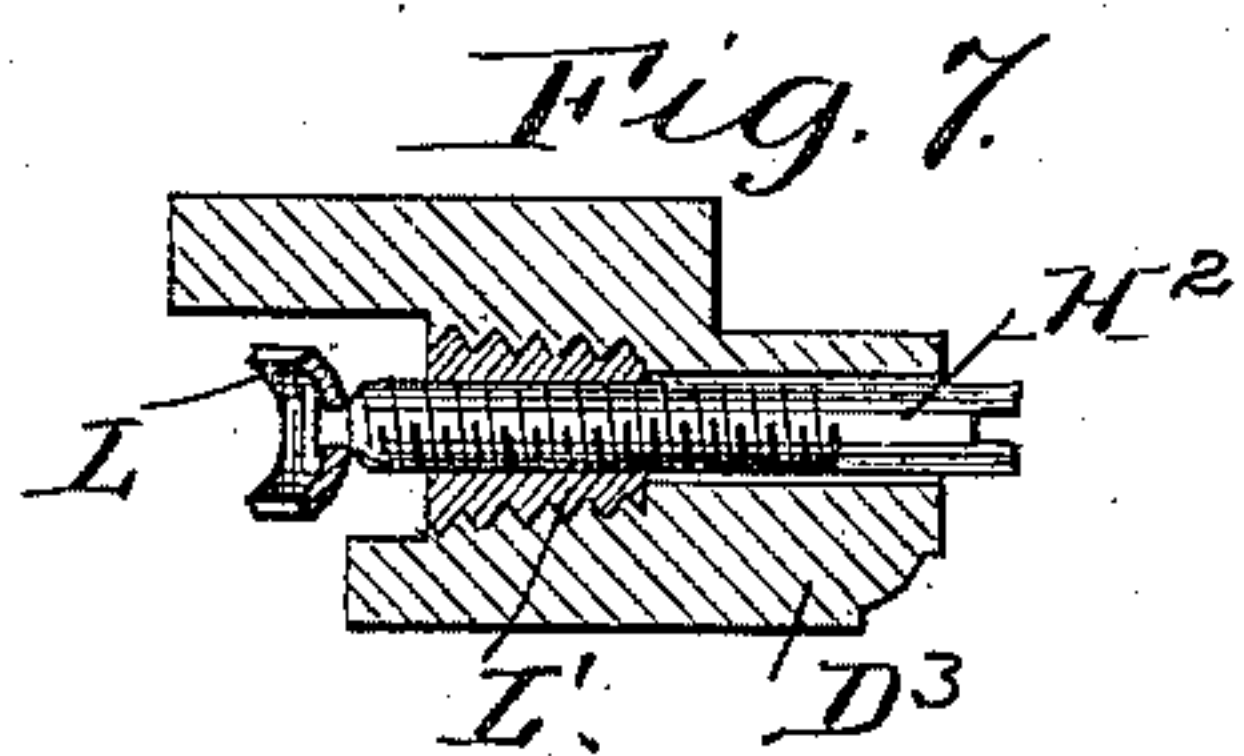
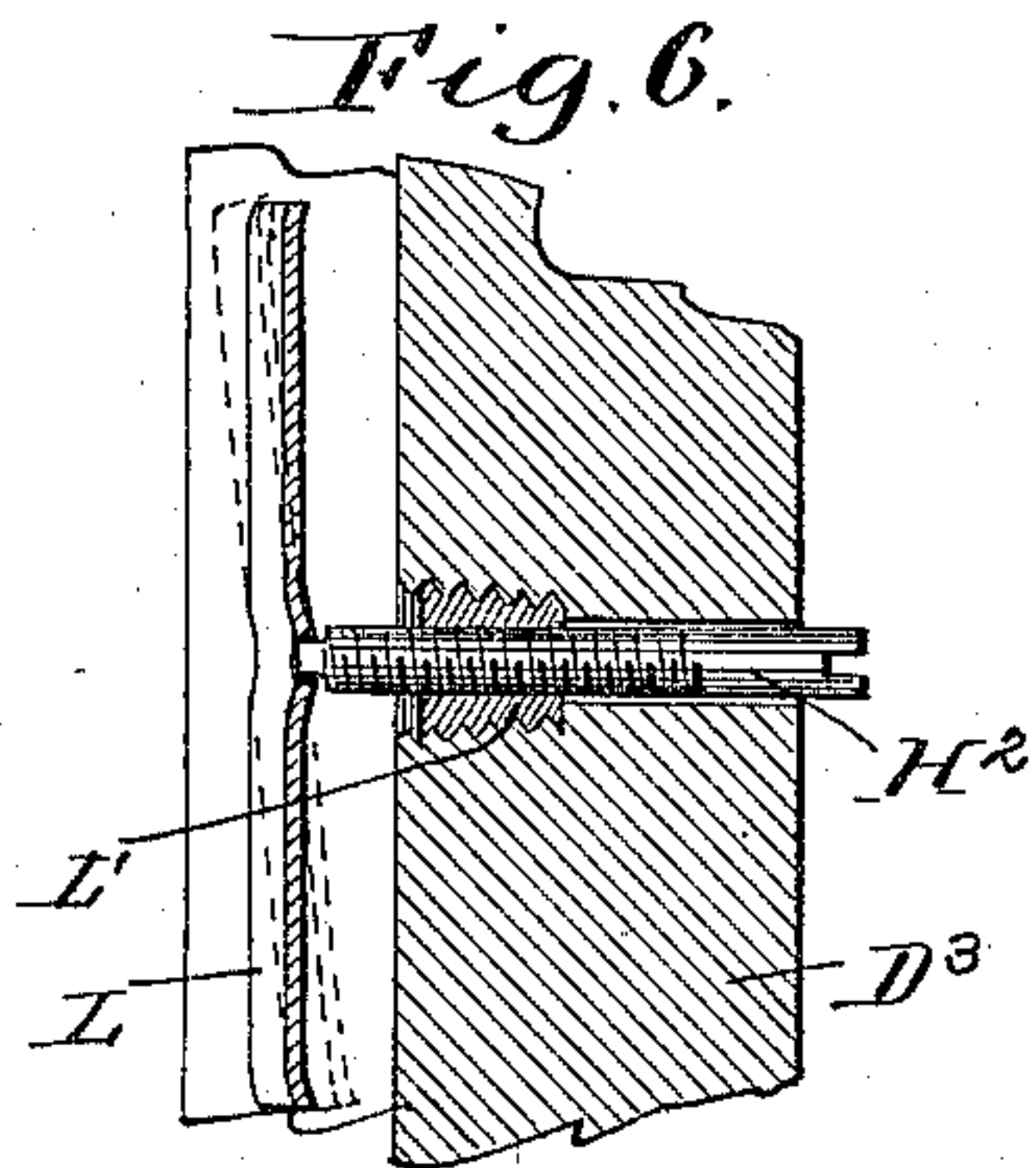
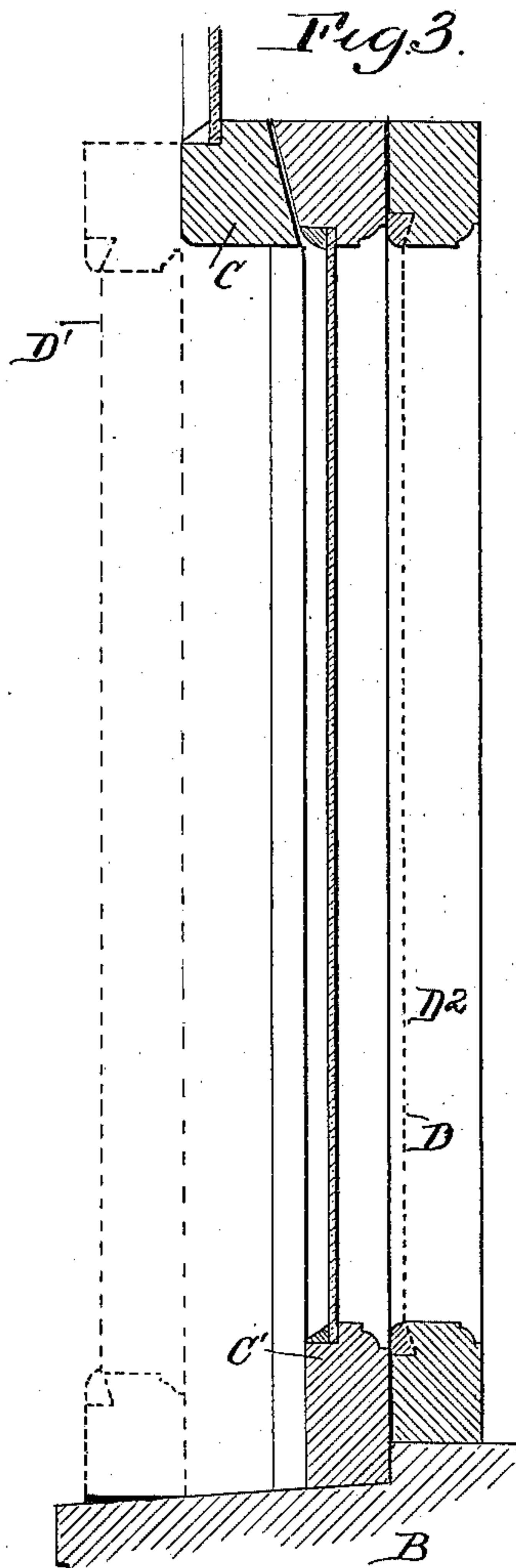
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE,

EDWARD T. BURROWES, OF PORTLAND, MAINE.

WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 610,257, dated September 6, 1898.

Application filed December 28, 1897. Serial No. 663,976. (No model.)

To all whom it may concern:

Be it known that I, EDWARD T. BURROWES, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Window-Screens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in window-screens, and more particularly to that class known as "sliding" screens.

In fitting and adjusting screens to window-frames it is frequently found that the latter are not perfectly square and more or less irregular, which necessitates planing or cutting down the edges of the screen-frame to secure the requisite fit. When the window-frame is not perfectly square, the rigid square screen-frame will not lie sufficiently close to the jamb or sill at all points to exclude insects. In view of this fact manufacturers usually construct the screens somewhat larger than is necessary, so as to allow for this after planing off for fitting. When a finished painted screen is planed off, the wood is left exposed to the elements and soon deteriorates unless repainted.

An object of this invention is to provide a structure which will avoid the necessity of cutting the screen-frame or marring its finish and also repainting, and therefore one feature of the invention consists in the equipment of a screen with devices or instrumentalities for justifying the same to cause it to fit irregular window-frames.

A particular style of screen to which the invention is well adapted is that which is known as the "edgewise-movable" type, wherein a deep groove is formed in one of the side moldings, in which are placed yielding abutments or bowed springs, which latter normally rest against the beading or track on the window frame or jamb. In such screens the groove is deeper than the width of the beading, so that the screen can be moved toward the beading when sufficient force is applied to overcome the strength of the springs.

By moving the screen the opposite beading escapes from the relatively shallow groove in

the opposite molding, and the screen can thereafter be swung out and removed. When screens of this class are justified to properly fit the window-frame, there would in many cases be a gap or space left between the shallow grooved molding and bead. To avoid this objection and as an additional feature of the invention, I form a flange on the shallow grooved molding, at one side only thereof, of such shape and size that while the screen can be moved or tilted edgewise, yet the flange will at all times overlap the beading and close the space between the same and screen-frame and also to prevent the screen from accidentally being forced out of the window-frame.

The invention is embodied in the construction and arrangement of parts hereinafter described and defined in the claims.

In the accompanying drawings is illustrated a practical embodiment of the invention, the construction being shown, however, simply for the purpose of illustration and not for the purpose of circumscription or limitation.

In the drawings like letters of reference designate corresponding parts in the several views.

Figure 1 is an elevation of a window-frame, showing a screen in position, parts being broken away. Fig. 2 is a cross-section on the line 2 2, Fig. 1. Fig. 3 is a vertical section through a window-frame, showing the position of different screens, taken on the line 3 3, Fig. 2. Fig. 4 is a perspective view of the preferred form of justifying-shoe. Fig. 5 is a detail cross-section through the screen and beading, showing the manner of applying and removing the screen. Figs. 6, 7, and 8 are detail longitudinal and cross-sectional views of modified forms of justifying devices and shoes. Figs. 9 and 10 are detail views in elevation and cross-section of a securing-button, and Fig. 11 is an end view of the anchor-nut shown in Fig. 6.

In the drawings, A designates the side posts or jambs, and B the sill, of the window-frame.

C designates the upper and C' the lower sashes, arranged in the usual manner.

D and D' designate the screens.

Sliding screens are usually applied at the inside of the lower sash, as shown in full

lines, Figs. 2 and 3, or at the outside, as shown in dotted lines, same figures, and the screens can be moved upward to serve as top or upper screens when it is desired to lower both sashes and admit the air from the top of the window.

Adjacent to the sash-grooves are secured the tracks or beads $E E'$, which are conveniently of U shape in cross-section, although any desired or approved form can be employed. On these beads the screens slide and are held. The bead at one side fits the deep groove d in the molding D^2 of the screen-frame, wherein are secured the bowed spring-abutments d' , normally resting against the bead E . The depth of the groove d is greater than the width of the bead, so that the screen can be moved sidewise toward the bead. The construction thus far described is well known and has long been in use. On the opposite molding D^3 is formed a broad lip or flange F , extending entirely across or from end to end of the molding. This flange is located at one side only of the molding and is of a width greater than the extent of edgewise movement of the screen-frame, so that irrespective of the degree of movement of the screen-frame edgewise the flange will overlap or project beyond the plane of the edge of the retaining-bead E' , thus preventing the formation of a gap or opening along the edge of the screen. The screen after adjustment can be moved sidewise in but one direction by virtue of the flange F , as is apparent.

When the screen is designed for inside application, the flange F is formed on the inner edge of the molding, as shown in full lines in Fig. 2, while it is oppositely arranged when intended for outside application, as shown in dotted lines in Fig. 2.

On the flat edge of the flanged side of the screen, conveniently opposite the springs d' , are secured the justifiers $H H'$. These devices consist, conveniently, of metallic strips having flat extended connecting portions h , having suitable means by which the same is secured to the molding, and the concaved shoe portions h' , which latter are formed with rounded ends h^2 , and a depressed central portion h^3 .

With the shoes h' are loosely engaged the adjusting-screws H^2 , the engaging ends of which are located in the depressions h^3 . They are conveniently of the form shown in Fig. 1 and pass loosely through transverse perforations in the molding E' , extending inwardly beyond the same. h^4 is an anchor-nut seated in a cavity in the molding and through which the screw passes. The nut is held in place by a cap-plate h^5 , screwed in or otherwise secured to the edge of the molding. The concaved face of the elongated shoe rests against the bead E' and moves up and down thereon when the screen is moved, and owing to the curved or rounded ends and the depressed center the danger of the shoe ends or screw end coming in contact with the bead-securing brads is avoided.

When the window-frame is not true or inclined, as shown in dotted lines, Fig. 1, it is only necessary to force the upper shoe H out by turning the screw attached thereto and, if necessary, draw the lower shoe in. This will force the screen over, as shown in dotted lines, Fig. 1, the springs d' permitting the movement. Should the frame be inclined in an opposite direction, the reverse adjustment is made. It will thus be seen that by these adjusting devices the screen can be properly fitted and adjusted to the window-frame and its bottom edge made to closely fit the sill at all points, and so without cutting or marring the screen-frame. An additional advantage in the employment of these adjusting devices is that the pressure in the springs d' can be varied, which is important, inasmuch as the springs serve to hold the screen when it is raised, and, further, if the screen is too narrow or too wide the same can be compensated for by the justifiers.

In lieu of the form of adjuster shown in Figs. 1 to 5 and above described a form similar to that shown in Figs. 6 and 7 can be employed, wherein the shoes L have no long attaching extension, but are supported wholly by the screws. In this case the anchor-nut L' is exteriorly screw-threaded and secured into the molding. This form of nut avoids the use of the extra securing-plate.

In Fig. 8 I have shown a construction wherein the screw is secured in a hollow threaded bushing O , which latter is held in place by a flange o and plate o' , but is free to rotate. By turning the bushing O the screw is forced out or in. In other respects the construction is the same as that of Figs. 6 and 7.

I have shown the shoes as being located in a shallow groove in the molding, so that the same will be partly obscure. While this is a desirable feature, it is not wholly essential.

Should it be found necessary to positively secure the screen in place, as securing-button P is used, the same lying in a recess in the side of the molding D^3 opposite that of the flange F . By turning the button it will overlap the bead, preventing any undue pressure from forcing the shoes from the beading.

It is thought that with the above description the manner of operating the screen will be fully understood. I would state, however, that in practice by the employment of the independent justifiers the screen can be adjusted to perfectly fit practically all irregular window-frames.

I desire it understood that the invention is not limited to the particular construction shown and described, as many changes can be made without departing from the nature and principle of the invention, and in this connection it will be understood that while the bowed-spring type of frame is shown and described the invention is applicable to any type of edgewise-movable screen; also, that the depression in the shoe can be omitted, as is obvious. It is also to be understood that

whether or not the screws are attached to the shoes the latter will be held against the ends of the former by the spring-pressure.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a window-screen, the combination with a screen-frame, of independent positively-adjustable screen-justifying devices at the edge of the frame, substantially as described.

2. In a window-screen, the combination with a screen-frame, of yielding abutments at one edge thereof, and means for justifying the screen on the opposite edge, substantially as described.

3. In a sliding screen, the combination with a screen-frame, of yielding abutments secured at one edge of the same, and independent positively-adjustable justifying devices at the opposite edge substantially as described.

4. In a screen, the combination with a frame, of separated justifying-shoes located at the edges thereof, and means for independently moving the shoes toward and from the frame and maintaining the same in their adjusted positions, substantially as described.

5. In a sliding screen, the combination with the frame having abutment-springs secured at one edge thereof, of independently-adjustable shoes at the opposite edge of the frame, and means for maintaining the shoes in their various positions of adjustment, substantially as described.

6. In a window-screen, the combination with the screen-frame, of yielding abutments secured at one edge thereof, independent, positively-adjustable justifying devices at the opposite edge of the frame, and a flange projecting from one edge of the frame beyond the plane of the justifying devices, substantially as described.

7. In a screen, the combination with a frame having one of its side moldings grooved, of spring-abutments located within the groove, a fixed bead fitted within the groove against which the abutments rest whereby the frame can be moved edgewise, a bead at the opposite edge of the frame, positively-adjustable independent justifying devices opposite the

spring-abutments and a single flange on the edge of the frame opposite the grooved edge of a width greater than the extent of edge movement allowed the frame, substantially as described.

8. In a screen, the combination with an edgewise-movable frame, of positively-adjustable independent adjusting devices on the edge of the frame, and a flange on the frame projecting beyond the adjusting devices of a width greater than the edgewise-movable distance of the frame, substantially as described.

9. In a screen, the combination with an edgewise-movable frame, of independent screen-adjusting shoes at the edge of the frame, and screws resting against said shoes and engaging the frame for moving the shoes outward from the frame, substantially as described.

10. The combination with an edgewise-movable screen-frame, of a justifying-shoe comprising an elongated transversely-curved bead-engaging portion, rounded end portions, and means on the frame for adjusting the shoe outwardly, substantially as described.

11. The combination with an edgewise-movable screen-frame, of a justifying-shoe consisting of a curved bead-engaging portion and an extended securing portion, and adjusting means on the frame engaging with the bead-engaging portion of the shoe, substantially as described.

12. A justifying-shoe having a concaved bead-engaging portion formed with rounded ends, and a depressed center, and an adjusting-screw having its end secured to the depressed portion, substantially as described.

13. The combination with an edgewise-movable screen-frame having a single flange at one edge, of independent positively-adjustable justifying-shoes secured on the edge at the side of the flange, and a securing-button on the flanged edge opposite the flange, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD T. BURROWES.

Witnesses:

H. W. ROBINSON,
F. L. RICKER.