

No. 678,216.

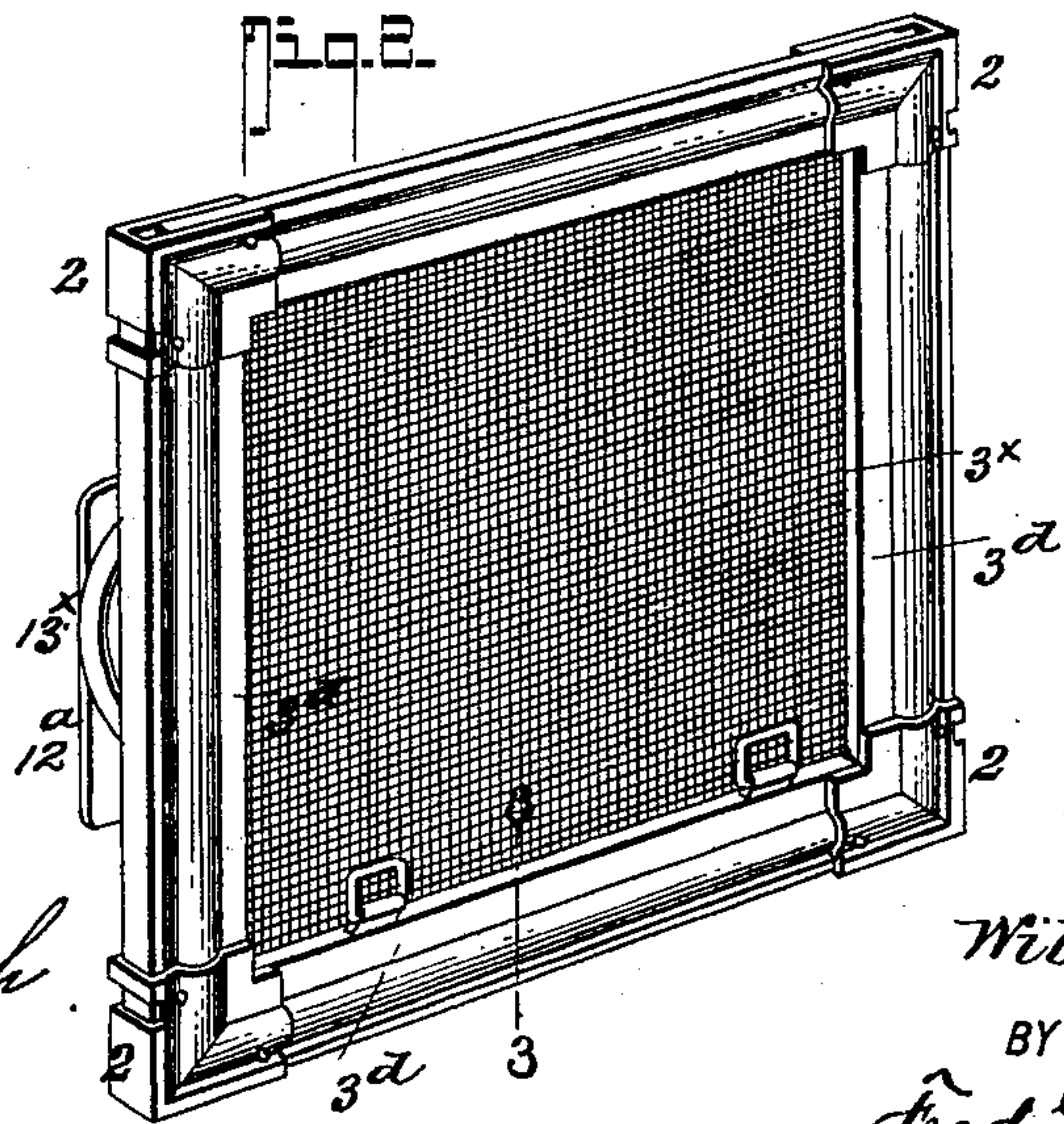
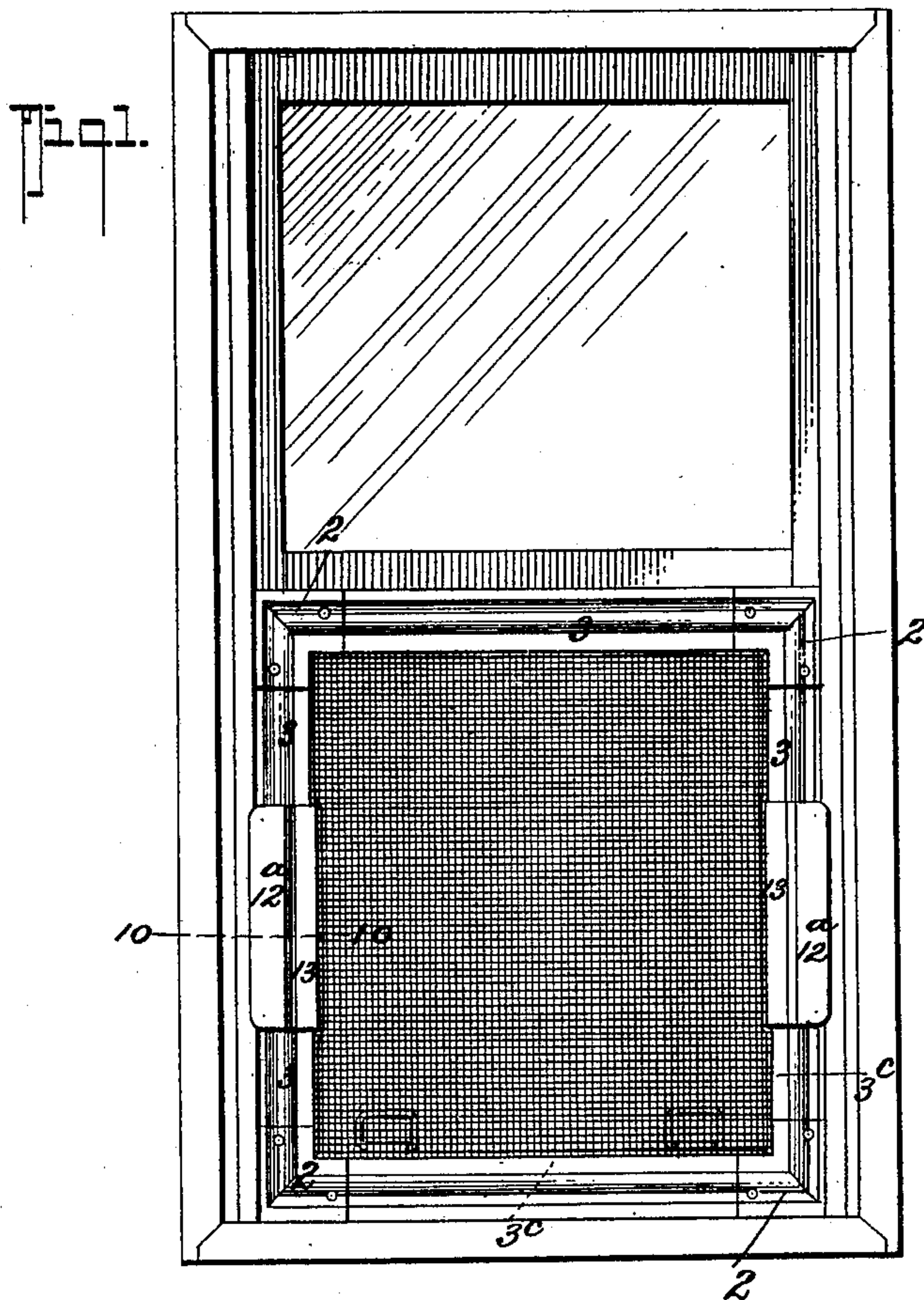
Patented July 9, 1901.

W. J. BAKER.
WINDOW SCREEN.

(Application filed Aug. 31, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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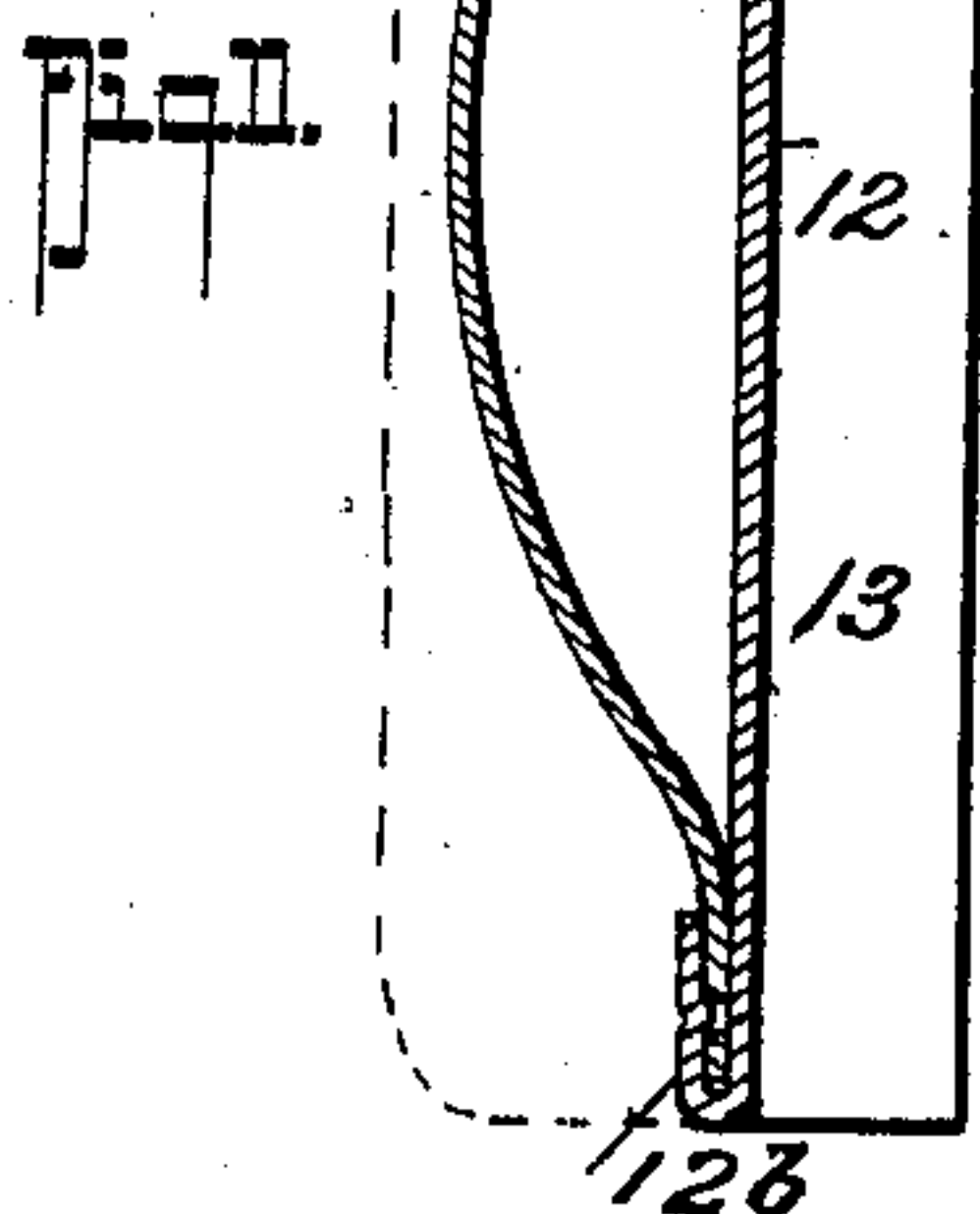
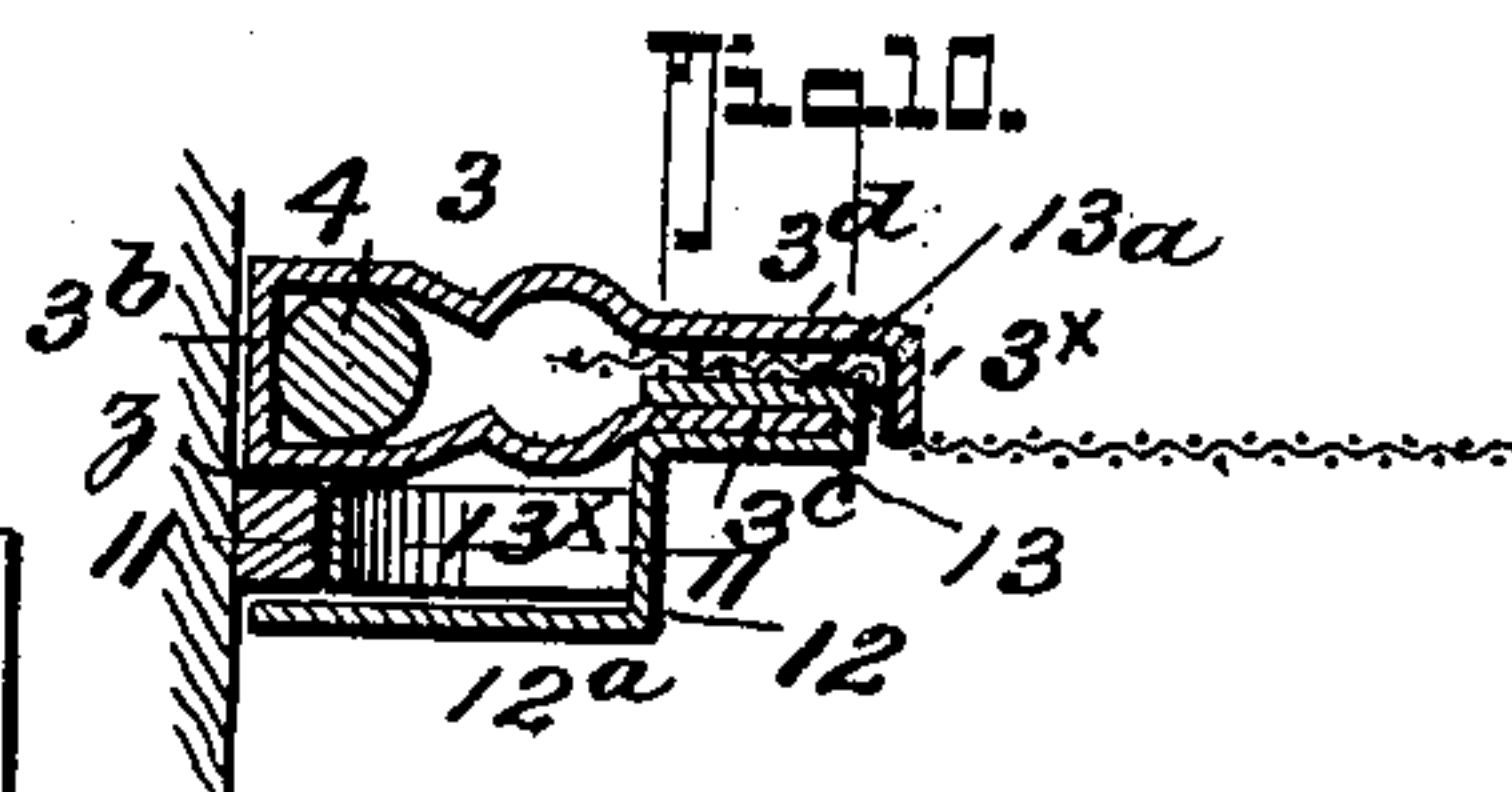
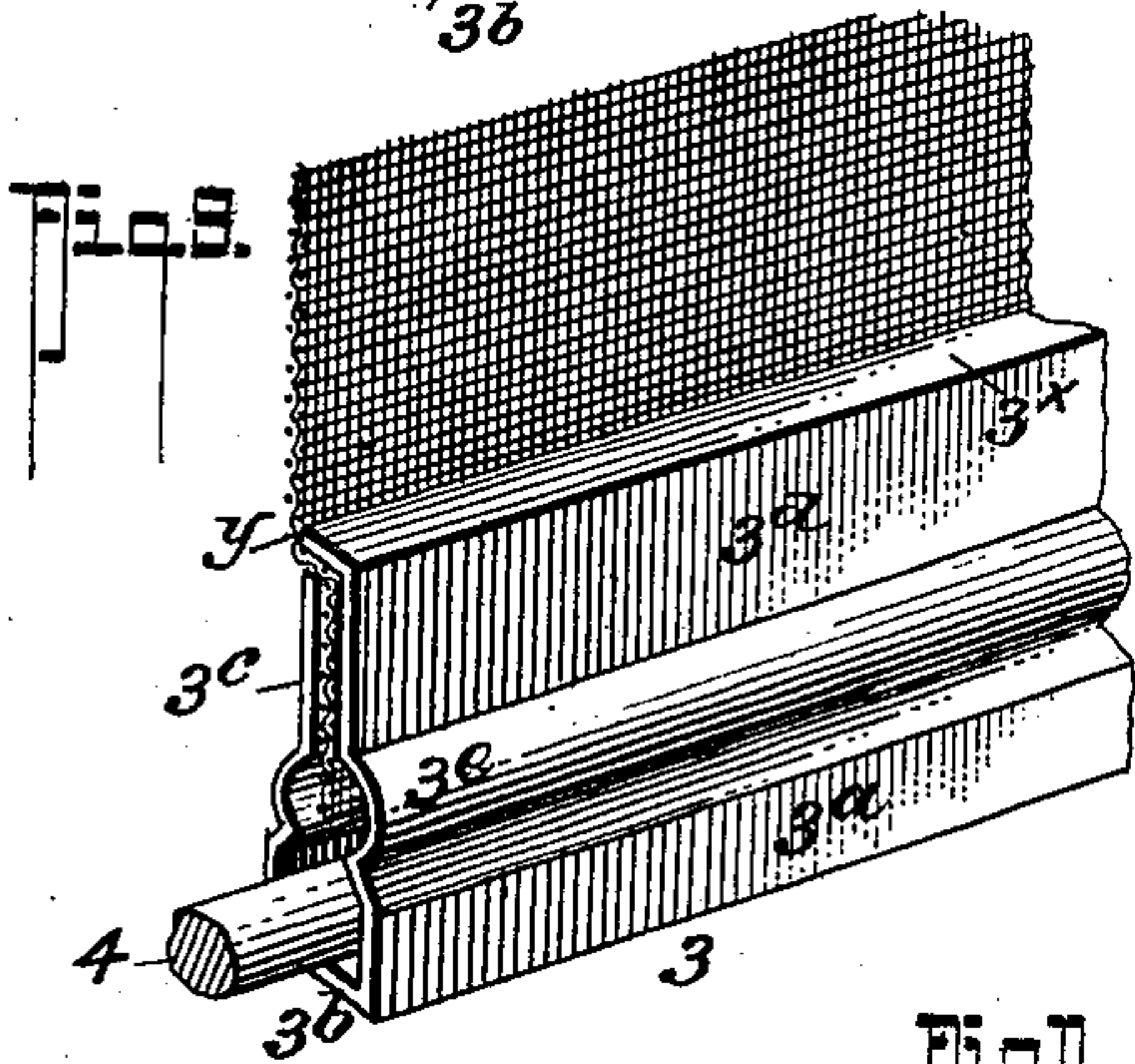
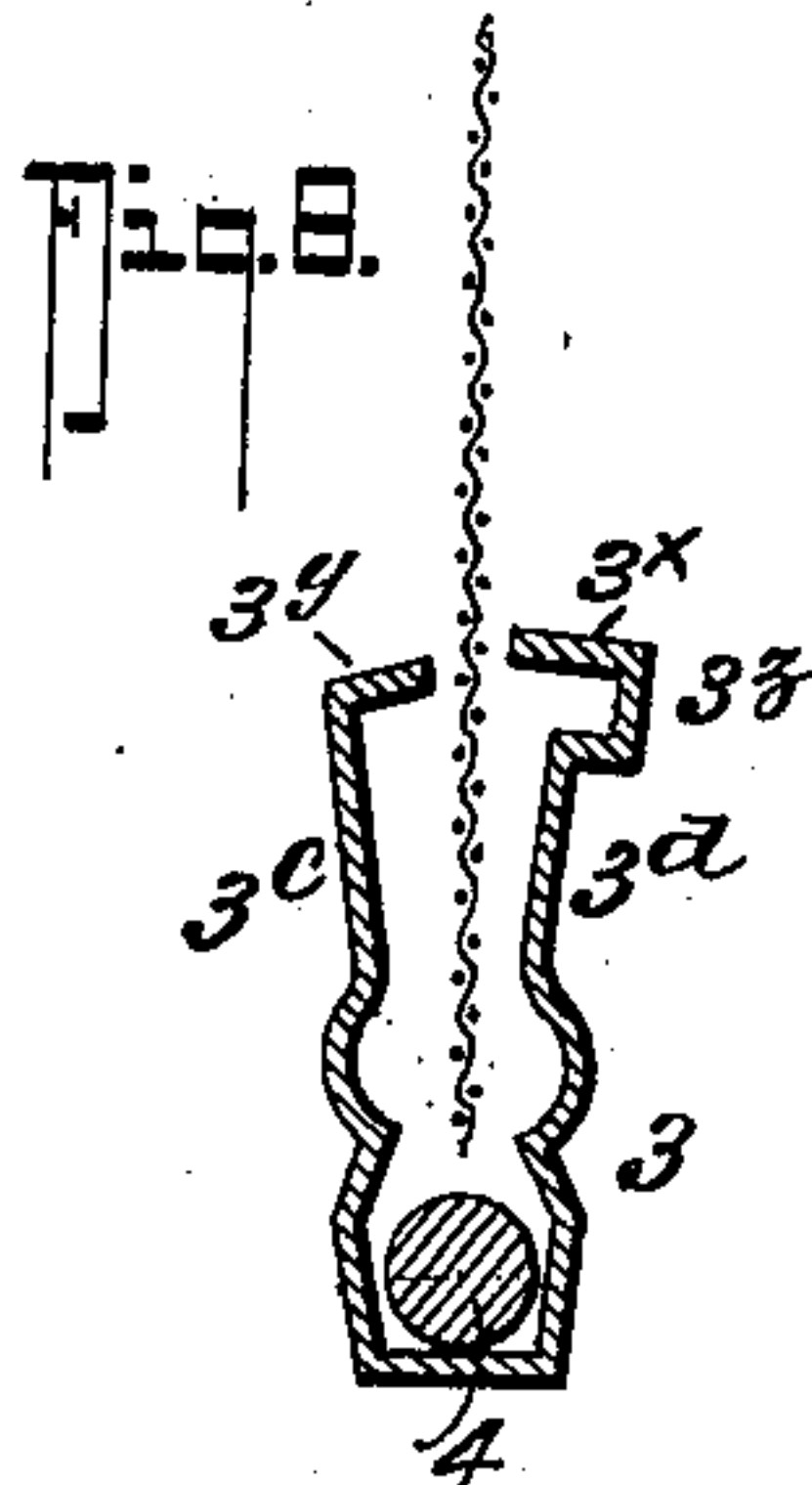
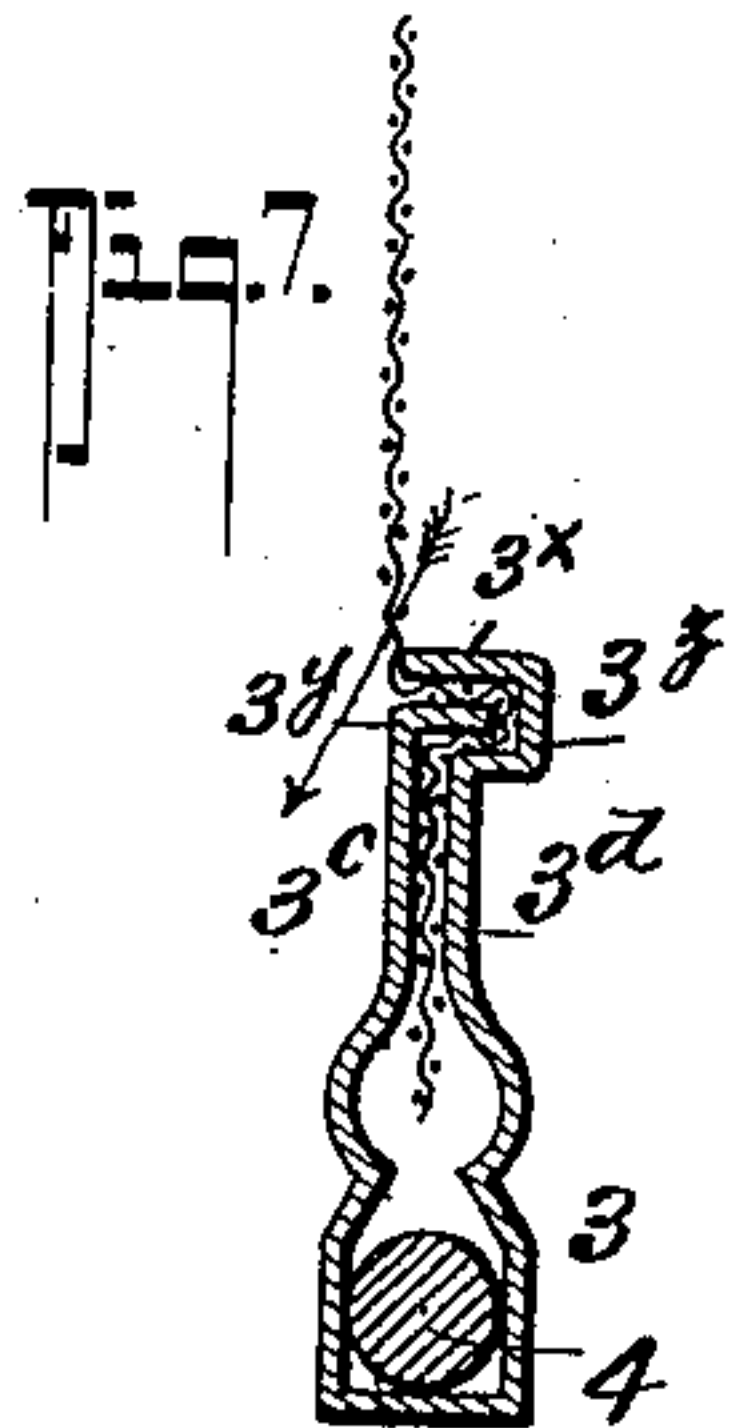
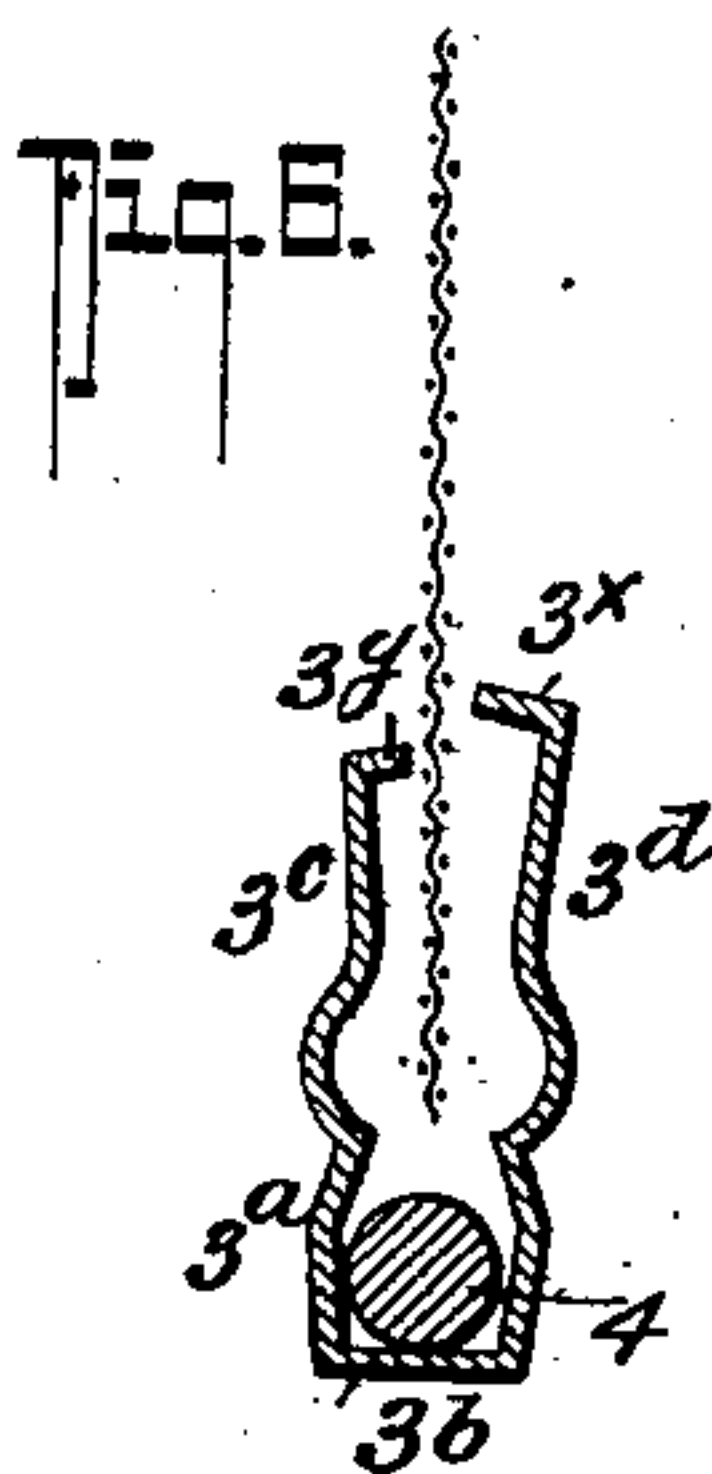
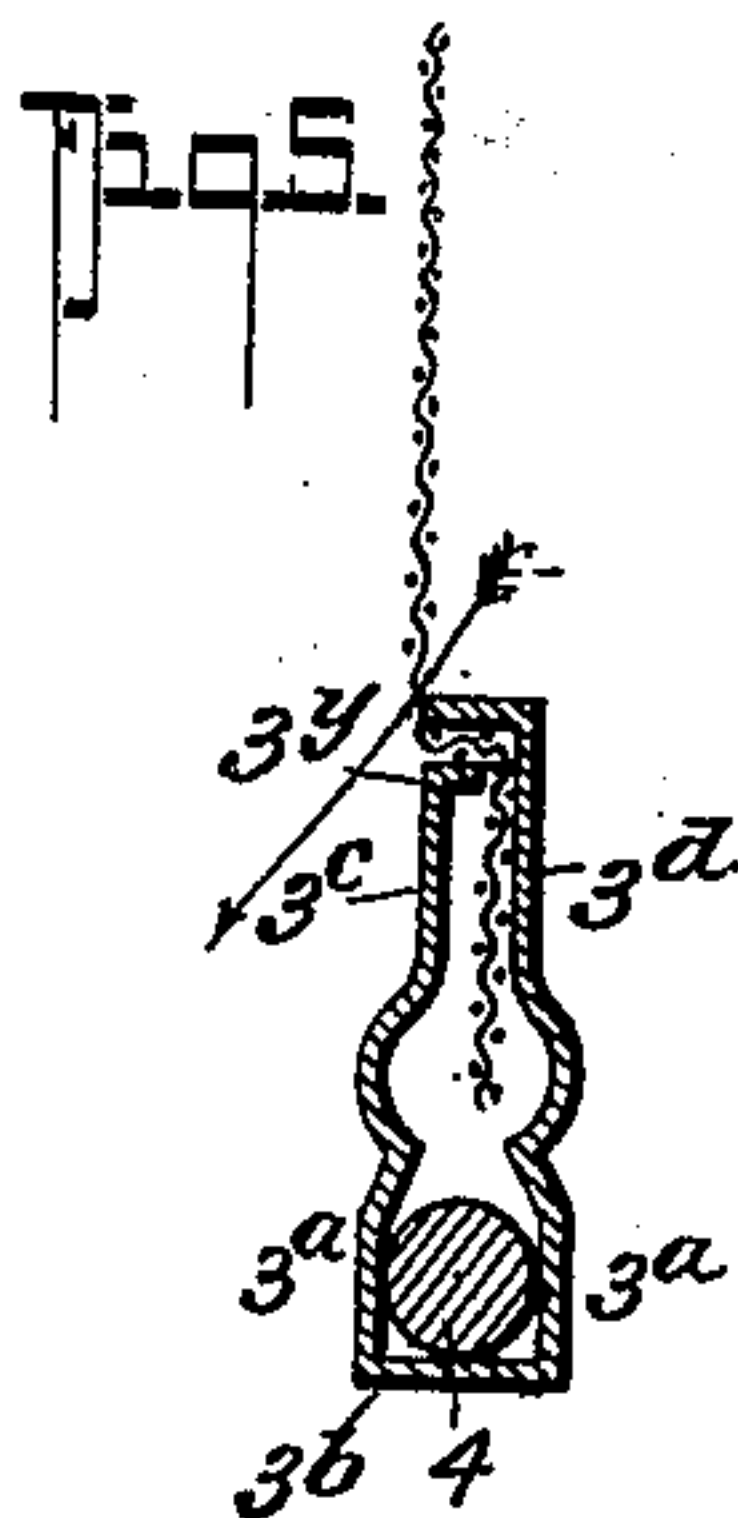
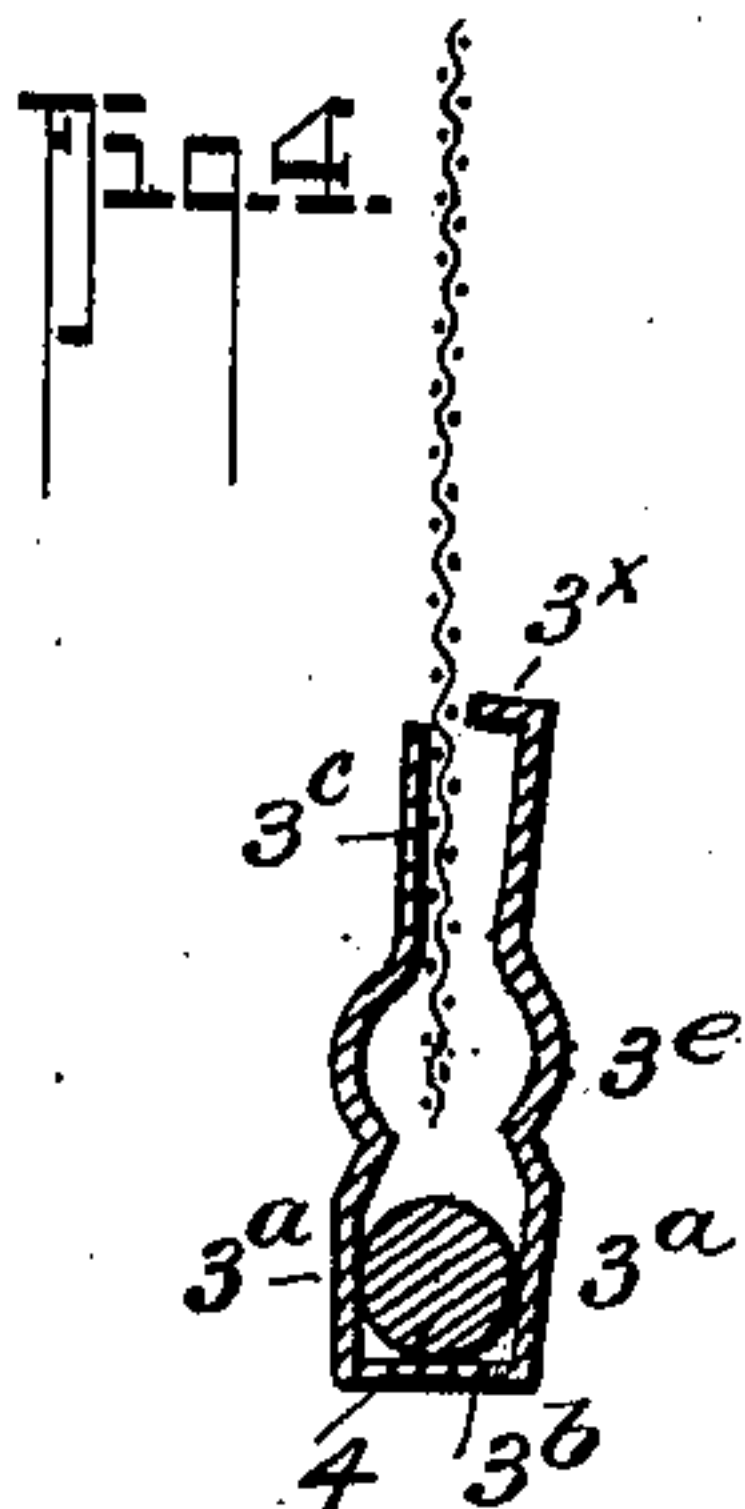
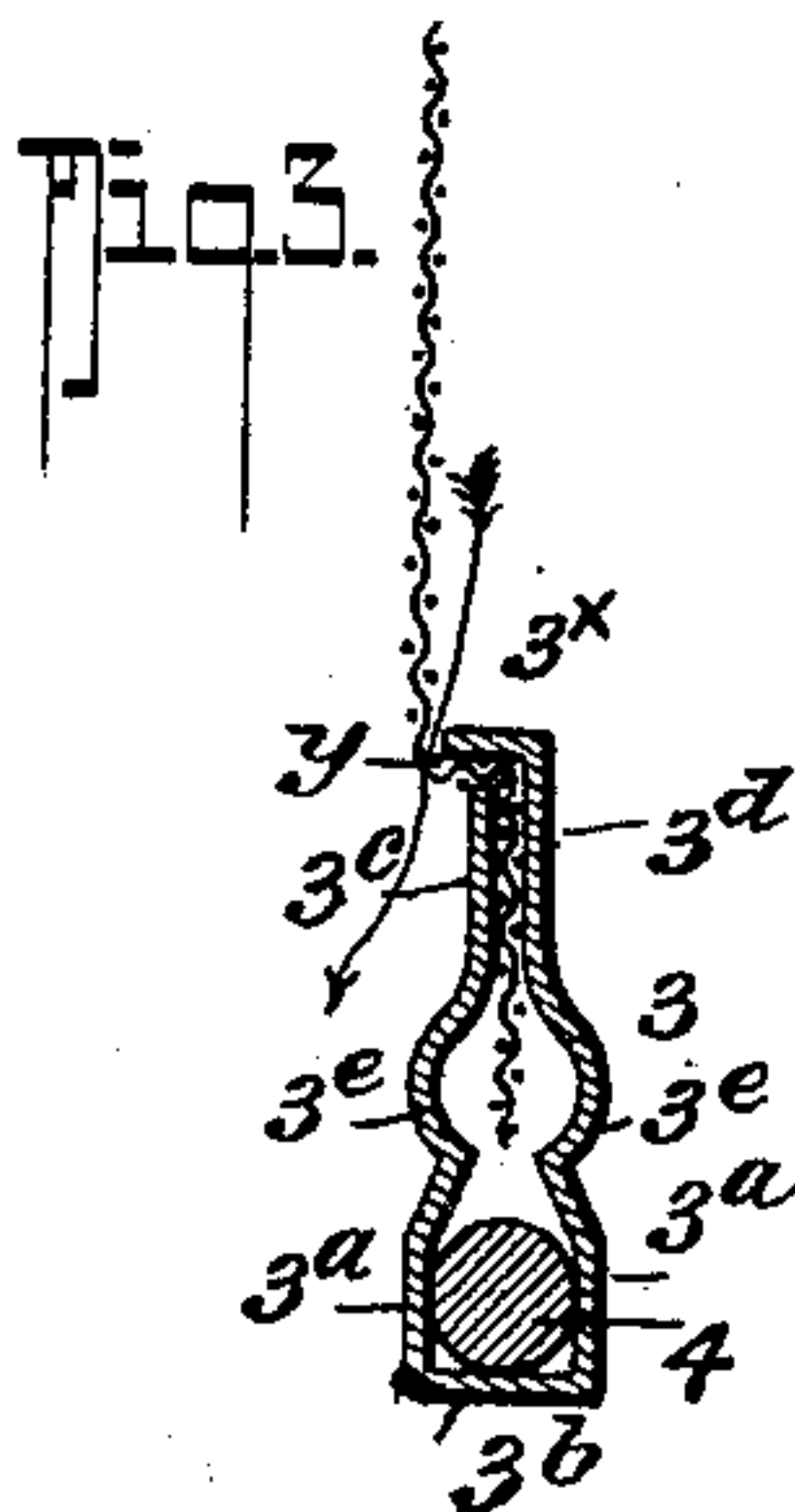
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2 Sheets—Sheet 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM J. BAKER, OF NEWPORT, KENTUCKY.

WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 678,216, dated July 9, 1901.

Application filed August 31, 1900. Serial No. 28,694. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. BAKER, residing at Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Window-Screens, of which the following is a specification.

This invention relates to improvements in metallic-frame screens; and it comprehends a novel and simple means for securing the screen-wire to the frame in such manner that in case of wear or its becoming broken said wire can be readily removed and replaced by a new wire.

My invention also seeks to provide an improved construction of frame, whereby the wire can be firmly held in such manner that water cannot enter inside the metal rim or frame, the correlation of the screen and the clamping portions of the frame being such as to deflect the water that may trickle down the screen to the outside of the frame.

In its more complete make-up my invention includes a special construction of the metal frame and cooperating spring slides or guides and other subordinate features of construction and combination of parts, all of which will hereinafter be fully described, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a face view of a window-casing with my improvement applied. Fig. 2 is a perspective view of the screen detached from the window. Fig. 3 is a cross-section, on an enlarged scale, of a part of the frame, taken on the line 3 3 of Fig. 2. Fig. 4 is a similar view showing the manner in which the clamping and the closure flange is bent back to remove an old or place in position a new screen-body. Fig. 5 is a detail cross-section illustrating a modified construction of the frame, the clamping ends being closed. Fig. 6 is a similar view of the same, the ends being sprung back to an open position. Fig. 7 is a section of a further modification of the frame, the clamping ends being closed. Fig. 8 is a similar view, the ends being sprung open. Fig. 9 is a detail perspective view of a section of the frame and part of the screen-body, illustrating the correlation of the ends of the screen-body and the clamping and closure flange of

the frame. Fig. 10 is a transverse section of the frame and taken through one of the spring guide and slide members, see line 10 10 of Fig. 1; and Fig. 11 is a longitudinal section of the guide and slide portion, taken on the line 11 11 of Fig. 10.

In its practical construction my improved window-screen includes the usual rod or stiffener-frame 4, upon which the metallic wire-cloth-clamping members are held.

In my form of screen the metal clamping members constituting the sides, top, and bottom may be braced or connected at the meeting ends or corners by angled corner-pieces (designated by 2) of any approved construction, as the said corner-fasteners form *per se* no part of my invention, which in its more essential feature relates to the peculiar construction of the wire-cloth-holding metal portions.

Referring now more particularly to Figs. 3 and 4, it will be noticed the frame 3 consists of a single piece of sheet metal, the opposite edges of which are bent up from a central flat bottom part, and straight sides 3^a, the sides and flat bottom 3^b producing a casing in which the wire rod or stiffener member 4 is held. The sides 3^a are creased inward at a point over the rod 4 and outward, as at 3^c, to add strength and rigidity to the frame, as also to hold the same firmly on the frame-rod 4. One of the sides 3^a, preferably the outer, terminates in a straight upper end 3^c, while the other extends parallel with the end 3^c, as at 3^d; but it is made sufficiently longer to provide a clamping-flange 3^e, having sufficient length so that when bent over at right angles, as shown in Fig. 3, it will project over the upper end 3^c of the opposite side member, the reason for which will presently appear.

I deem it proper to here say that I am aware that metallic clamping members for securing the wire-cloth mounted fast upon a rod-frame has heretofore been provided, and I therefore made no claim, broadly, to such generic structure.

My form of wire-cloth-holding frame differentiates from what has heretofore been provided, so far as I know, in that by reason of making the outer edge of the frame flat and bending the sides up at right angles and in

such manner as not to clamp tightly over the rod 4 the sides 3^a will have sufficient resiliency or spring to cause the upper or clamp edge 3^x to normally spring over the opposing ends 3^c, and thereby prevent the upper ends of the two sides from pulling open under ordinary usage. So far as described the manner in which the wire-cloth is fitted to the frame and the coöperative relation of the two when fitted together is as follows:

By referring to Figs. 3, 4, and 9 it will be noticed that by bending out the clamp end 3^x straight, or nearly so, as in Fig. 4, ample room is provided for slipping the end of the wire-cloth between the two side members of the frame, and, assuming the opposite end of the screen as already made fast to its coincident frame-section, it will be manifest that by bending down the end 3^x the wire-cloth will be drawn with its end extended down between the sides 3^a 3^a, said end of the wire-cloth being creased, as at *y*, to form an interlocking flange, which will effectively prevent the wire-cloth from contracting back to a sagging condition or from being pulled out of the frame. The clamping member 3^x when bent down to the position shown in Fig. 4 forms a double function—first, that of clamping the screen to the frame, and, secondly, as a closure member for effectively closing the interior of the frame in such manner as to keep out water.

Another advantage of my construction of frame is that by extending the clamping member 3^x sufficient to cause it to project over the member 3^c the screen-body will be projected in a plane outside the member 3^c, and by reason thereof any water that may run down the screen-body will pass over the outside of the frame, and thereby prevent water collecting on the sill between the sash and screen-frame. To remove an old wire-cloth, it is only necessary to bend the clamp ends 3^x back by means of a chisel or other suitable implement. This also leaves the frame in condition to receive a new screen-wire.

Figs. 5 and 6 illustrate a slightly-modified form of my invention. In this form the upper end of the part 3^c of the frame bends inwardly to form a flat bearing and clamp flange 3^y, against which the clamping-flange 3^x of the opposing member 3^d holds the wire-cloth, said construction serving to produce a more positive clamping action on the wire-cloth.

In Figs. 7 and 8 is illustrated a still further modification of my improved construction of metallic frame, which embodies generally the construction shown in Figs. 5 and 6, and in addition the member 3^d has a socket 3^z to receive the end 3^y of the member 3^c. In this form the closure of the two ends 3^c 3^d tends to positively tighten the screen-cloth and also to effect a more positive interlocking of the cloth with the clamping ends and reducing the danger of the cloth ends pulling out (by contraction) of the frame. In this

latter form the connection of the cloth ends and the frame is substantially fluid-tight and all danger of the wire-cloth rusting or rotting out of the clamping ends is avoided.

One of the most essential advantages obtained by my construction of frame is that a very simple and inexpensive means is provided for fitting the cloth to the frame and for speedily removing a worn-out screen-cloth when it is desired to rewire the frame, and by reason of the clamping ends being arranged so that the point of bend or clamp edge of the screen-cloth is in a plane beyond the outer edge of the frame water cannot run down into the frame or inside it between it and the window-sill.

While I prefer to use the ordinary form of stiffener-rod 4, I desire it understood it is not absolutely necessary that the said rod be used. It may be omitted entirely or used only for the top and bottom sections, with angle corner-pieces sufficient to add rigidity to the corners of the frame. The sliding edges of the sides of the screen may be made to run in grooves in the window-casing or on other suitable guide members. I prefer, however, to provide my frame with metallic spring guides or slides, one for each side. In my construction these guides or slides form a coöperative part of the frame, and each consists of a sheet-metal body having a single piece bent up to form an outer guide-flange 12^a, the inner end of which terminates in a right-angled portion 12, upon which the bearing-spring 13^x rests, said spring being held in place by an in-turned lip 12^b, as clearly shown in Fig. 7. From the base of the member 12 extends a flat portion 13, which projects inward and which is bent upon itself to form a clamping-flange 13^a, by means of which the slide member is made fast to the frame, as clearly shown in Fig. 10, by reference to which it will be seen the flange 13^a extends over the end 3^c of the frame and is held from pulling outward by the clamp-flange 3^x of said frame. By providing a slide and guide member, as described, and joining it to the frame in the manner shown the guide-flange 12^a, together with the outer edge *z* of the frame, forms the groove in which the slide-strips on the window-casing fit. I desire it understood, however, that while I prefer to use the guide-slide herein described and shown I do not limit myself to such form of slide, as other means may be used for such purpose. In the present construction, however, the peculiar arrangement of the frame coacts with the special construction of the slide in that the flange 3^x forms the means for clamping the wire cloth or net and for locking the slide in place.

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

1. In a metallic window-frame, a spring-metal frame-section, having a flat base and parallel sides, the upper ends of which are

bent inwardly toward each other, one of said ends overlapping the other, said ends extending over the opposing clamping-faces of the parallel side portions of the frame, all being
5 arranged substantially as shown, whereby to bring the body of the screen in a plane outside of the frame to prevent the water trickling down into the frame-section, as set forth.

2. The combination with the rod or stiffener member, and the screen-wire; of a frame-section formed of a single strip of sheet metal having a flat base and parallel sides, said base and sides forming a casing to receive the rod, said sides being closed in against each other
15 at a point above the rod, then curved outward and then projected upward, to form opposing clamping-surfaces to receive the end of the screen-wire, the upper end of one side section having a socket and the other an int
20 turned clamping-flange to engage the wire and project with the wire into the socket of the other clamping portion, whereby to press the screen-surface in a plane outside of the

said other clamping portion, substantially as shown and for the purposes described. 25

3. In a metallic window-screen of the character described, the combination with the frame-section 3, having a straight base and parallel sides, which terminate in opposing clamping-surfaces open at the outer ends to
30 receive the wire, one of the said surfaces having a clamping-flange 3^x, adapted to be bent over the wire opening and over the end of the other clamping-surface; of the combined slide and guide, having a flange projected parallel
35 with the other face of the frame, a spring carried on the guide-slide, said slide having a base formed with an inturned flange, said flange projecting in the open end of the wire-clamp
40 ing surfaces and held from pulling out by the clamp member 3^x, that projects over its inturned flange, as shown and described.

WILLIAM J. BAKER.

Witnesses:

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PETER GRÜNHOLZ.