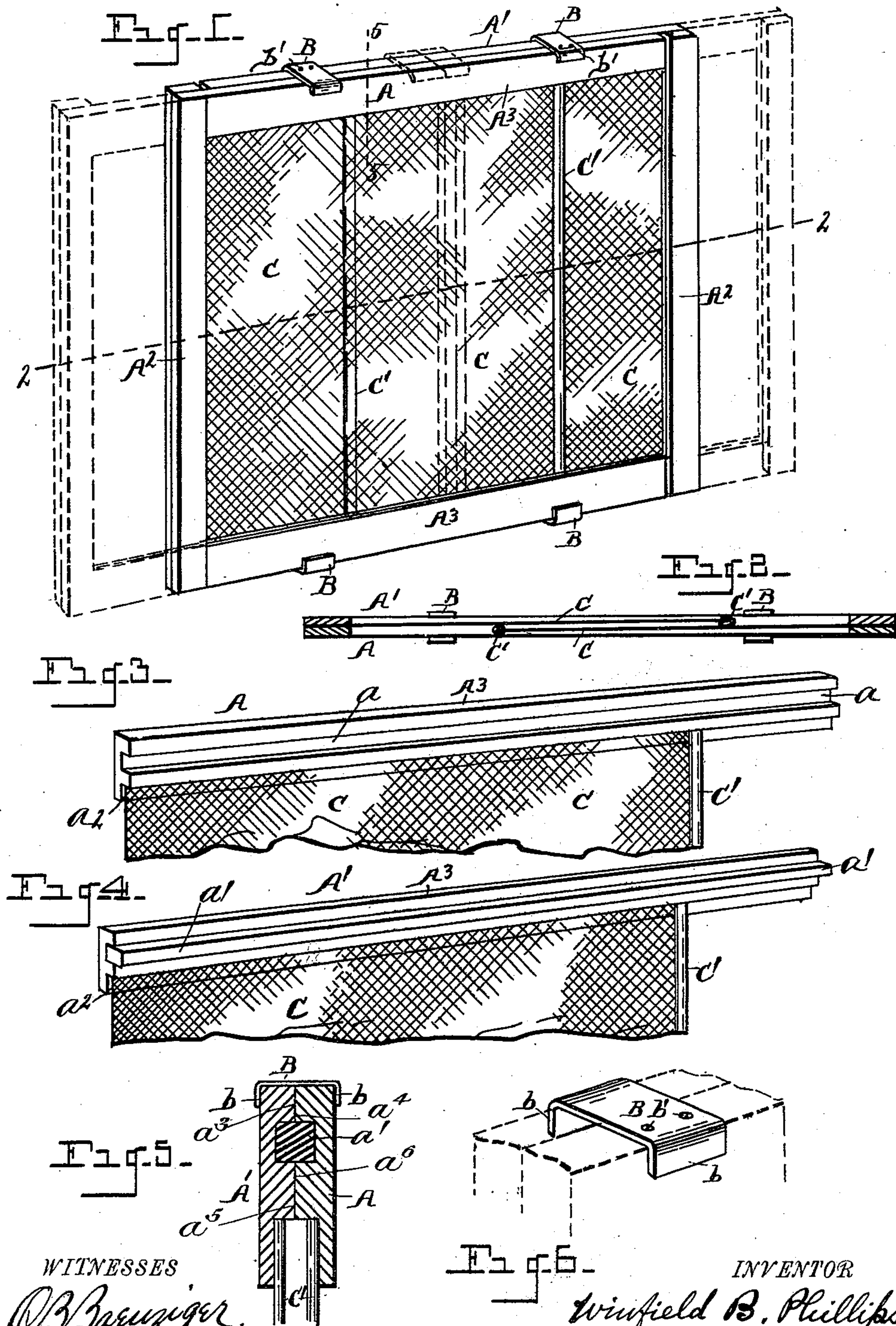


(No Model.)

W. B. PHILLIPS.
WINDOW SCREEN.

No. 562,095.

Patented June 16, 1896.



WITNESSES

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WINFIELD B. PHILLIPS, OF FENTON, MICHIGAN.

WINDOW-SCREEN.

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Application filed January 17, 1895. Serial No. 535,206. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD B. PHILLIPS, a citizen of the United States, residing at Fenton, county of Genesee, State of Michigan, have invented a certain new and useful Improvement in Window-Screens; and I 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, reference being had to the accompanying drawings, which form a part of this specification.

My invention pertains to an improved window-screen, having for its object a screen of simple, economical, and durable construction, and of superior efficiency and beauty.

My invention consists of the construction and arrangement hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a view in perspective. Fig. 2 is a cross-section on the line 2 2, Fig. 1. Fig. 3 is a detail view showing one of the grooved bars of the frame with a portion of the screen fabric or wire-netting engaged therewith. Fig. 4 is a detail view of one of the tenoned bars of the frame with a portion of the wire-netting engaged therewith. Fig. 5 is an enlarged cross-section on the line 5 5, Fig. 1. Fig. 6 is a detail view more fully illustrating the engagement of the said clips with the two frames.

My invention more especially has in view an adjustable screen-frame so constructed as to be readily operated and adjusted without liability of binding and of such strength that center bars obstructing the view may be omitted.

I carry out my invention as follows: The screen as a whole is constructed of two screen-frames A and A', each of said frames having one end bar A² and one upper and lower bar A³ and A³. With each frame is a wire-netting C, engaged with the three bars thereof. The upper and lower bars of one of said frames are each provided with a rectangular groove *a*, extending from end to end thereof, as indicated in Fig. 3. The upper and lower bars of the corresponding frame are provided with rectangular tenons *a'*, extending the whole length of each of said bars, as shown in Fig. 4. The tenons of the upper and lower

bars of one of the frames slide in the grooves of the upper and lower bars of the other frame. It will be observed that as so constructed the grooves are straight sided, of essentially U-shape in cross-section, the upper and lower faces of the groove being horizontal and parallel throughout, and that the tenons are also of straight-sided form of corresponding shape, whereby there is no liability of the tenons binding in the grooves of the corresponding frame, enabling the two frames to have a sliding engagement the one with the other, permitting an easy and ready adjustment of the two frames, the one relative to the other.

It will be seen that the adjacent faces of the bars A³ A³ of the two frames are parallel the one to the other on each side of the grooved and tenoned engagement of the one with the other, said bars being constructed with perpendicular parallel faces *a*³ *a*⁴, extending outward from the groove and tenon, with perpendicular parallel faces *a*⁵ *a*⁶, extending inward from the groove and tenon to the rabbeted portions of the adjacent bars, so that the two bars of the frame A A' have their adjacent faces parallel throughout in their contact the one with the other.

The two frames are held adjacent the one to the other by clips B B, secured to the frames, the frames being movable through said clips, respectively, to permit the adjustment of the frames, as may be desired. The clips B are preferably constructed with flanges *b b* at their opposite edges to project over the face of the two frames, as indicated in the drawings. The clips may each be nailed at one end to one of the frames, as indicated at *b'*. The inner edge of each of the bars of each frame is rabbeted, as shown at *a*², to receive the corresponding edge of the wire-netting and allow sufficient play for the proper adjustability of the two frames. The wire-netting engaged with each frame has its free edge bound within a folded strip of metal C'. This binding dispenses with the necessity of a cross-strip engaged with the frame toward the inner ends of the upper and lower pieces thereof, as has been common heretofore.

I prefer to manufacture both of the tenoned bars in one of the frames with a groove

similar to the groove *a* in Fig. 3, and then to insert and secure in place a tenon-strip into the groove, inasmuch as in this manner all the bars of the frame can be made on the same machine with the same knives. In this manner, primarily, all the bars designed for the upper and lower bars of each frame are duplicates the one of the other. The tenoned strips are then secured in that portion of the bars required to be provided therewith. While this is a simple and desirable manner of constructing the tenoned bars, I would, however, have it understood that I do not limit myself solely thereto, as the tenoned bars may be constructed in any suitable manner with the rectangular tenons extending from end to end thereof.

A tenon or tongue of rectangular shape in cross-section extending from end to end of the bar to fit into a correspondingly-shaped groove in a corresponding bar is believed to be novel and especially in combination with the clips B B. It is obvious that the two frames A A' with their tongues and tenons so constructed would not hold together without the clips or some analogous device for holding the parts together, as there would be nothing to prevent lateral displacement. The use of the clips in combination with the tongue-and-grooved bars, constructed as above described, provides a window-screen that is strong and one which will not bind in adjustment thereof. Such a construction, moreover, enables the bars of the screen-frame to be made thinner than in other adjustable screens, while at the same time the two frames A A' may be adjusted wider apart than has been the case with other frames, thus securing additional advantages, while at the same time the screen as a whole is of tasteful appearance, especially since I am enabled, as above set forth, to dispense with any cross pieces or bars at the free edges of the wire-netting.

It is well known that screen-frames made adjustable by dovetailed tongues and grooves without the clips B B are weak and are very liable to bind and to be pulled apart. So, too, clips without the bars being tongued and tenoned, as embodied in my invention, are liable to grind into the bars and permit the two adjustable frames to be separated.

In my improved screen the use of clips is to hold the two frames A A' from lateral disengagement, while the tongues and grooves made rectangular in cross-section afford the easiest and strongest adjustment possible and the easiest manner of adjusting the frames, as the frames are not dovetailed and the tongues and grooves do not have to perform the office of holding the two frames together; the tongues and grooves simply serving for the ready adjustment of the two frames. Moreover, the

strength secured in a screen so constructed is such that any center cross-bars may be entirely dispensed with. The metal edge C on the wire fabric is only for the stiffening of the netting and not to add strength to the frames.

I prefer to nail one of the clips B B to one of the frames, the other clip being nailed to the opposite frame. The clips are also preferably so located as to form a stop to prevent pulling the frames apart.

As shown in Fig. 1, it will be evident that when the frame A' is pulled to the right, for example, the clip secured thereto will move to the right therewith. So, also, when the frame A is moved to the left the corresponding clip moves therewith. This will cause the two clips to strike against one another when the frames are adjusted outward to their full capacity and stop their being pulled apart.

What I claim as my invention is—

A window-screen having three-sided frames, A, A', laterally adjustable the one with respect to the other, each of said frames constructed with a vertical end bar A², and with upper and lower horizontal bars A³ A³ rabbeted on their adjacent faces at their inner edges, combined with a screen fabric engaging with the rabbeted edges of each frame, and provided with a binding of sheet metal at its inner edges; the upper and lower bars A³ of one of said frames being constructed with straight sides, U-shaped grooves in one of the vertical faces thereof and extending continuously from end to end of said bars, the upper and lower bars A³ of the other frame constructed with correspondingly-shaped tenons on the vertical faces thereof adjacent to said grooves extending continuously from end to end of said bars and having movable engagement in the grooves of the corresponding frame, the upper and lower faces of said grooves and tenons being horizontal and parallel throughout, the adjacent grooved and tenoned bars A³ being provided with perpendicular parallel faces *a*³ *a*⁴, extending from the groove and tenon respectively outward to the outer edge of the bars and with perpendicular parallel faces *a*⁵, *a*⁶, extending from the groove and tenon respectively inward to the rabbeted portion of the bars; and clips secured to the upper and lower bars of one of said frames engaging the corresponding upper and lower bars of the opposite frame to hold the two frames together and to permit of their lateral adjustment, substantially as set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

WINFIELD B. PHILLIPS.

Witnesses:

CLARENCE TINKER,
W. J. PARKER.