(No Model.)

# G. J. ROTHAN.

## ADJUSTABLE SCREEN FRAME.

No. 476,077. Patented May 31, 1892.

Fig. 1

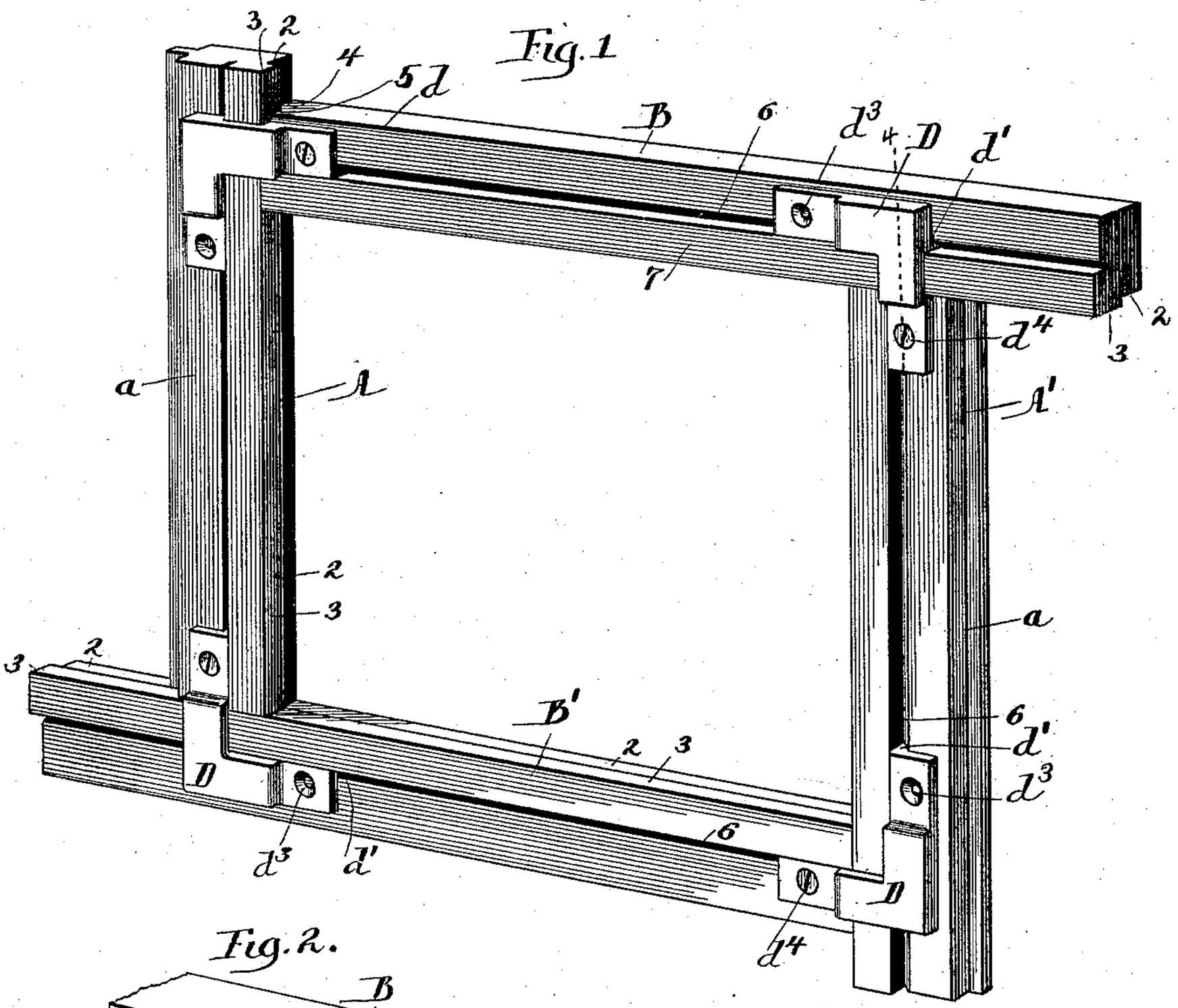



Fig. 2.

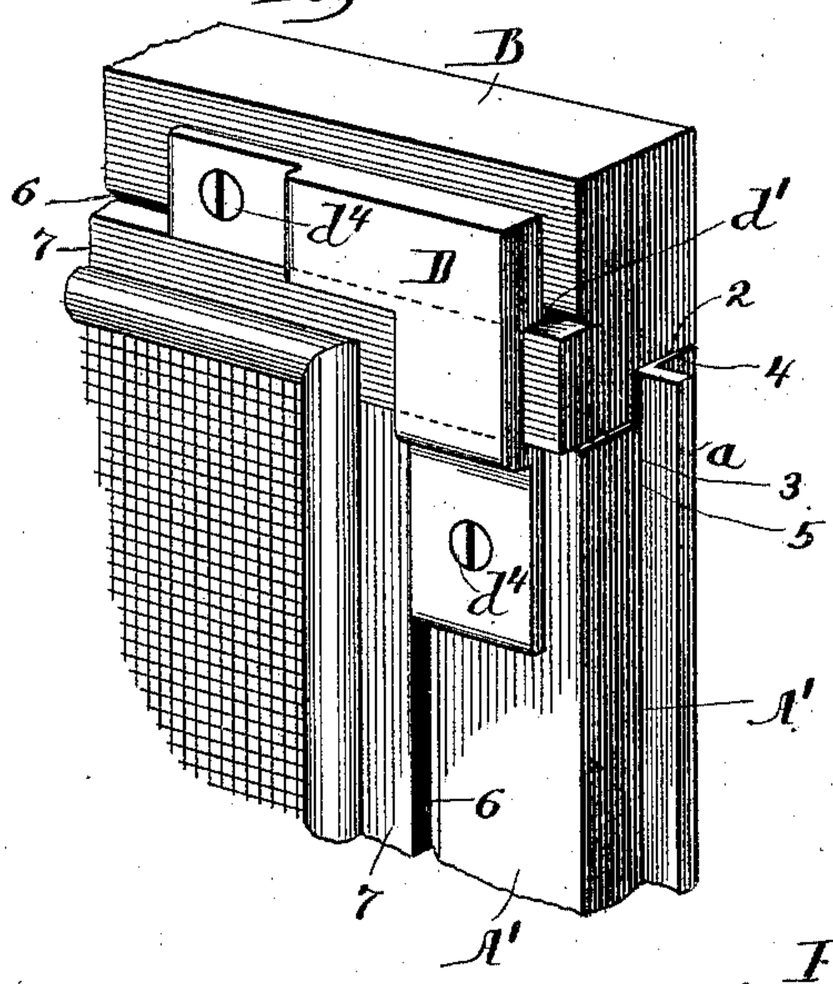



Fig. 3.

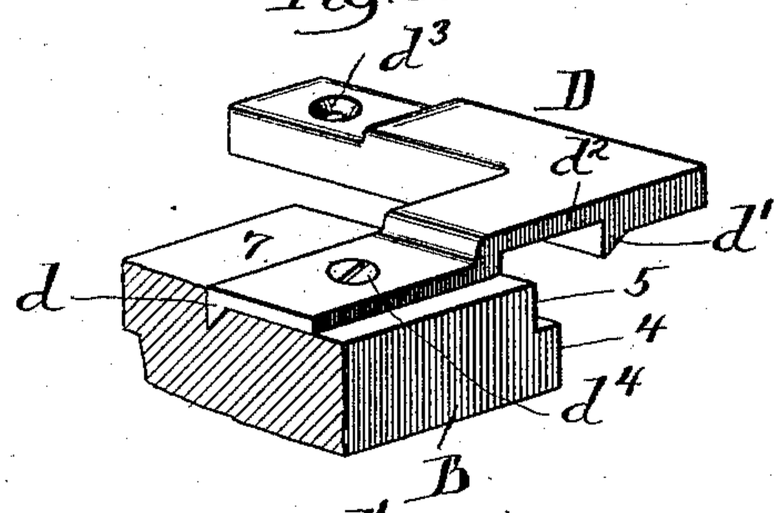



Fig. 5.

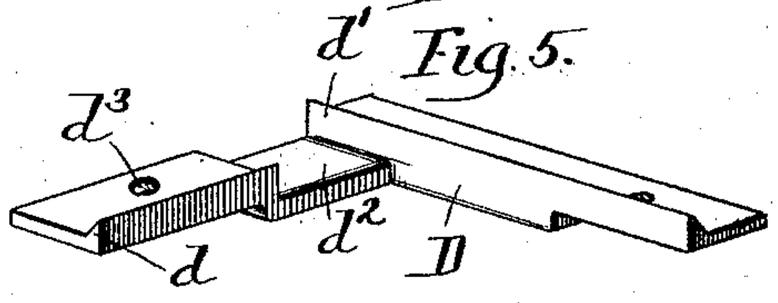
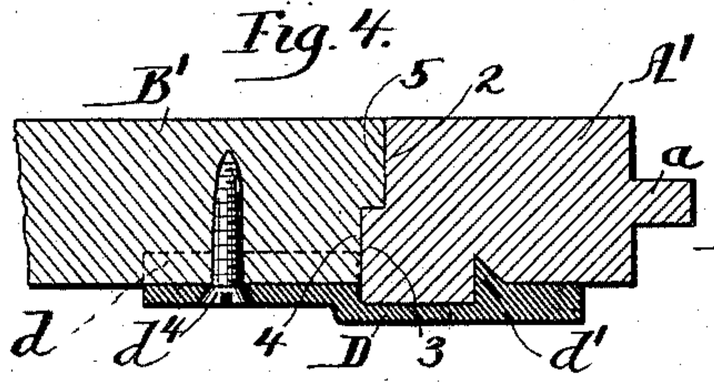



Fig. 4.

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# UNITED STATES PATENT OFFICE.

GEORGE J. ROTHAN, OF PEORIA, ILLINOIS.

## ADJUSTABLE SCREEN-FRAME.

SPECIFICATION forming part of Letters Patent No. 476,077, dated May 31, 1892.

Application filed September 10, 1891. Serial No. 405,357. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE J. ROTHAN, a citizen of the United States, residing at Peoria, in the county of Peoria, State of Illinois, have invented certain new and useful Improvements in Wire-Screen Frames, of which the following is hereby declared to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My present invention has relation to that class of wire-screen frames such as are used for doors, windows, and the like and in which provision is made for enabling the parts to be readily fitted together and adjusted even by unskilled labor to the windows in which they are intended to be used.

My invention consists in the novel features of construction hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the claims at the end of this specification.

Figure 1 is a perspective view of a wire-screen frame embodying my improvements. Fig. 2 is a perspective view of one corner of the screen-frame after the parts have been fitted to the window and have been fastened together. Fig. 3 is a detail perspective view of one end of one of the bars whereof the frame is composed, having attached thereto my improved metallic corner-plate. Fig. 4 is a view in vertical section on line 4 4 of Fig. 1. Fig. 5 is an inverted perspective view of one of my improved clamping-plates.

A and A′ designate the lateral bars of my improved frame, and B and B′ denote the transverse bars of this frame. The bars A A′ and B B′ are the same in cross-section, with the exception that the lateral bars A A′, being designed for the sides of the window, are preferably formed with the guide-strips *a*, which will enter corresponding grooves for the purpose of guiding the screen as it is raised and lowered. Each of the several bars A A′ and B B′ is formed upon its inner edge and throughout its length with a groove or recess 2 and with an overhanging shoulder or projection 3, and one end of each of the bars A A′ and B B′ is formed with a projecting portion 4, adapted to enter the groove or recess 2, and with a groove or recess 5, adapted to receive the projecting portion or shoulder 3 and the inner edge of the rail against which such end will abut when the parts are placed together for use. The outer face of each of the several rails A A′ B B′ is formed with a groove 6, extending from end to end thereof, and is formed, also, by preference upon its outer face, with a raised rib or portion 7, the purpose of the groove 6 being to receive a fin *d* or *d*′, projecting from the inner face of the improved corner-plate D, and the purpose of the raised rib 7 being to enter the seat $d^3$, formed in the corner-plate between the end of the rib *d* and the side face of the opposite rib *d*′. Each of the corner-plates D has two arms extending at an angle to each other, and these arms are perforated, as at $d^3$, to admit the screws $d^4$, whereby the parts will be firmly held together after the rails have been adjusted and cut so as to form a screen of the desired size.

In the manufacture of this class of articles it has been heretofore proposed to provide corner-irons, which enable an adjustment of the rails to be effected; but in such prior construction, so far as I am aware, it was necessary to accurately measure and cut the lengths of the rails or certain of them before the parts were fitted together. With my improved construction, on the contrary, all the rails can be fitted together and can be adjusted to the proper size, and after such adjustment has been effected the parts can be securely joined together, and the superfluous or projecting portions of the rails can then be cut off.

In the practice of my invention the lateral rails A A′ and the transverse rails B B′ will be fitted together as illustrated in Fig. 1 of the drawings—that is to say, the lateral rail A will have its grooved and shouldered end engaged with the corresponding inner edge of the transverse rail B′, the lateral rail A′ will have its grooved and shouldered end engaged with the inner edge of the transverse rail B, and in like manner the grooved and shouldered ends of the transverse rails B B′ will be engaged with the corresponding inner edges of the lateral rails A and A′. To each of the rails A A′ and B B′, fitted together as above described, will be connected at its grooved and shouldered end one of the corner-plates D, the rib *d* of

this corner-plate entering the groove 6, formed in the face of such rail, while the seat $d^2$ of the corner-plate will receive the rib or projection 7, formed on the face of the adjoining rail, and the projecting rib or fin $d'$ of the corner-plate will enter the groove 6 in the face of such adjoining rail. Manifestly when the parts are thus joined together, as illustrated in Fig. 1 of the drawings, the sides of the screen-frame can be enlarged or diminished in either direction, so as to enable this frame to be readily fitted to the window in which it is to be used. Thus, for example, if it be assumed that the frame when the parts are in the position seen in Fig. 1 of the drawings is of proper size for the window in which it is to be used it will only be necessary to saw off the projecting ends of the several rails and permanently attach the corner-plates by passing screws through the open holes and into the wood of the frames beneath them. If, however, it is desired to make the frame somewhat longer, this can be readily done by separating the lateral bars A and A′, and if it is desired, also, to make the frame somewhat higher this can be easily accomplished by the separation of the transverse rails B B′ until the frame has been brought to the desired size.

It is my practice in placing these frames upon the market to include in each package the four rails A A′ and B B′, together with four corresponding corner plates or pieces D, and I have found that even the most unskillful person can readily fit the parts together and adjust the frame to the appropriate size for the window-opening in which it is to be used. The corner-irons, projecting as they do beyond the ends of the rails to which they are attached and having ribs adapted to enter corresponding grooves in the faces of the rails, not only hold the parts together in such manner as to permit them to be readily adjusted, but after such adjustment has been effected they serve to give great strength to the frame at its corners, which in this class of articles are invariably the weakest points.

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

1. A wire-screen frame formed of lateral and transverse rails, each of said rails having one end abutting against the inner edge of a rail extending at right angles thereto and having its inner edge abutting against the end of another rail extending at right angles thereto, each of said rails being formed with a longitudinal groove in its face, and corner-plates for uniting said rails, each of said corner-plates being extended beyond the end of the rail to which it is fastened and being provided with an inwardly-projecting rib entering the longitudinal groove in the face of the abutting rail, said corner-plates serving to hold said rails together in manner permitting them to be adjusted both laterally and transversely, substantially as described.

2. A wire-screen frame formed of lateral and transverse rails, each of said rails having one end provided with a shoulder and a recess and abutting against the inner edge of a rail extending at right angles thereto and having its inner edge formed with a shoulder and recess and abutting against and engaging the recessed and shouldered end of another rail extending at right angles thereto, and corner-plates for uniting said rails, each of said corner-plates being fastened to the end of one rail and having a rib projecting inwardly beyond the face of and engaging the rail which it overlaps, said ribs of the corner-plates serving to hold the rails together, while permitting them to be adjusted both laterally and transversely, substantially as described.

3. A wire-screen frame formed of lateral and transverse rails, each of said rails having one end provided with a shoulder and a recess and abutting against the inner edge of a rail extending at right angles thereto and having its inner edge formed with a shoulder and recess and abutting against and engaging the recessed and shouldered end of another rail extending at right angles thereto, each of said rails being formed with a longitudinal groove in its face, and corner-plates for uniting said rails, each of said corner-plates projecting beyond the end of the rail to which it is fastened and being formed with a rib on its projecting portion, entering the longitudinal groove of the abutting rail and serving to prevent the separation of the rails except by withdrawing the ribs of the corner-plates from out the longitudinal grooves of the rails, substantially as described.

4. A metallic corner-plate for wire-screen frames, consisting of a body having two oppositely-extended arms, one of said arms having upon its inner face a rib or projection extending across the other arm and the opposite arm having upon its inner face a rib or projection extending transversely to but terminating at a distance from the rib or projection of said other arm, substantially as described.

5. A metallic corner-plate for wire-screen frames, consisting of a body having two oppositely-extended arms, one of said arms having upon its inner face a rib or projection $d'$, extending in the direction of its length, and the opposite arm being formed with a rib or projection $d$ upon its inner face, and a seat $d^2$ between said rib or projection $d$ and said other arm, substantially as described.

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

GEORGE J. ROTHAN.

Witnesses:
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ISRAEL C. PINKNEY.