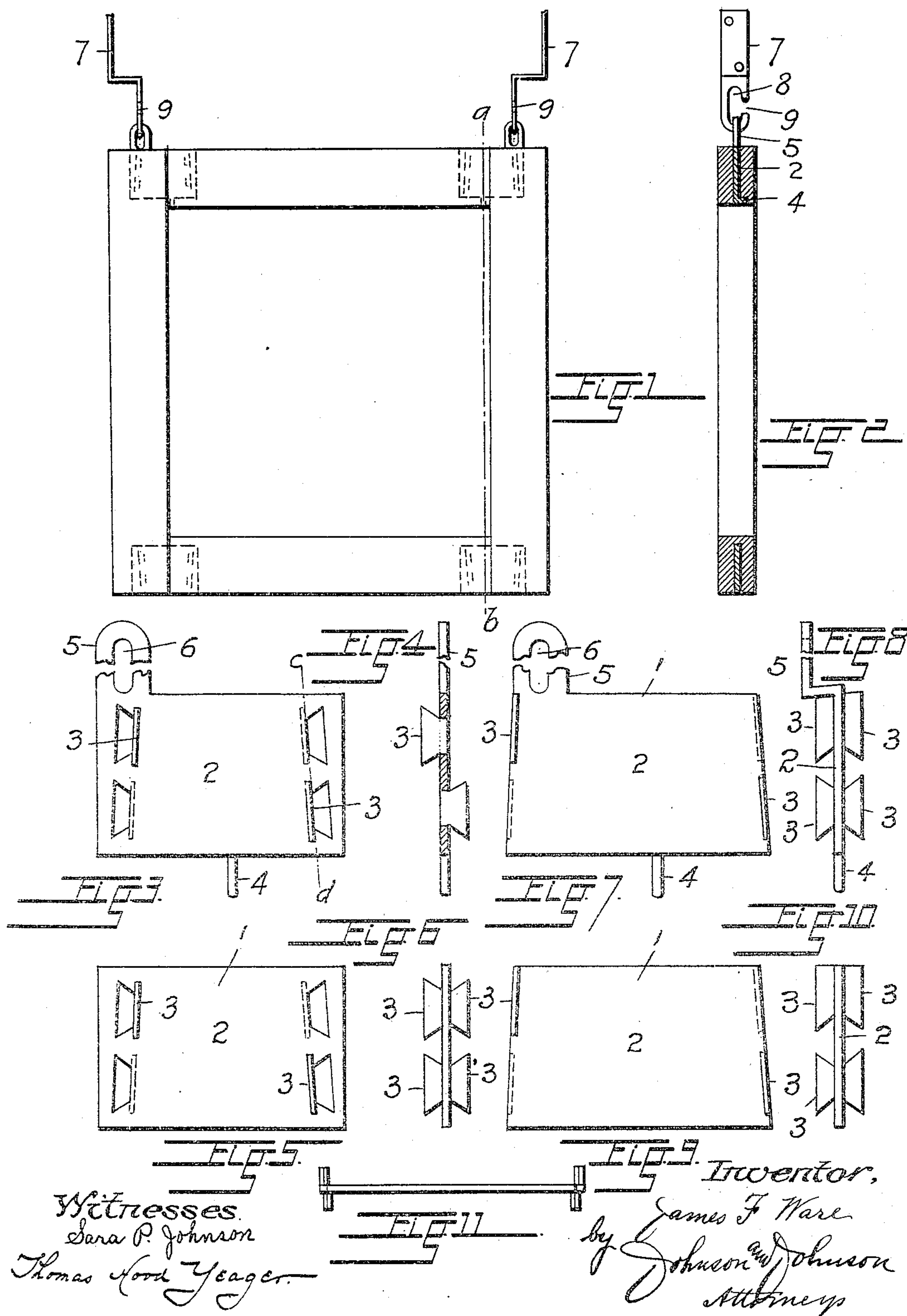


No. 792,094.

PATENTED JUNE 13, 1905.

J. F. WARE.  
SEPARABLE HINGE FOR SCREENS.  
APPLICATION FILED MAY 6, 1904.



# UNITED STATES PATENT OFFICE.

JAMES F. WARE, OF DENVER, COLORADO, ASSIGNOR TO THE WARE  
SCREEN COMPANY, A CORPORATION OF COLORADO.

## SEPARABLE HINGE FOR SCREENS.

SPECIFICATION forming part of Letters Patent No. 792,094, dated June 13, 1905.

Application filed May 6, 1904. Serial No. 206,700.

*To all whom it may concern:*

Be it known that I, JAMES F. WARE, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Separable Hinges for 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.

My invention relates to improvements in metal-tenon fastening devices for wooden frame-joints.

I have illustrated my invention as constructed for use in fastening together the joints of window-screens and also constructed to provide a hanging member integral with the tenon and adapted to be hooked upon the hook member attached to the window-casing and form, with the same, a separable hanging-hinge for the screen.

The object of this invention is to provide a tenon of such construction that when driven into the wood of both rail and side bar of the screen the tenon itself will draw together the joint.

Referring to the drawings, Figure 1 is a front view of the screen, showing in dotted lines the position of the tenons and also showing the manner of hanging the screen. Fig. 2 is a vertical cross-section of the same on the line *a b* of Fig. 1. Fig. 3 shows the top or hanging tenon. Fig. 4 is a vertical section taken on the line *c d* of Fig. 3. Fig. 5 shows the bottom tenon. Fig. 6 is an end view of the same. Fig. 7 is a modification of one of the top tenons, and Fig. 8 an end view of another modification. Fig. 9 shows a modification of the bottom tenon, and Fig. 10 an end view of the same. Fig. 11 is a top view of the tenon shown in Fig. 9.

1 represents the fastening-tenon, made of sheet metal, having a flat web 2 and near each side edge two or more upturned wings 3. The wings of each side are bent in opposite directions and stand in lines which diverge from the driving edge or top of the tenon, so that when the tenon is driven into

the pieces to be joined the diverging wings will draw the pieces together. The upturned edges of the wings are longer than the bended edge, which is integral with the tenon, so that the bottom and top of the edges of the wings form sharp points, the bottom ones of which in being driven through the wood tend to draw the wood together—that is, toward the flat sides of the tenon—and thereby prevent the wood from splitting along the line of the tenon. The ends of the wood which are to be joined are preferably slotted by sawing, so that the web of the tenon may be easily driven into the wood without causing it to split. When driven into the wood, the sharp points at the top edges of the wings will become embedded in the wood and prevent the tenon from being withdrawn.

The hanging tenon (see Fig. 3) has an integral strip 4 projecting from its bottom or inner edge, and when the tenon is driven into the wood, as shown in Figs. 1 and 2, this strip will project through the wood and is clinched, as shown in Fig. 2. This clinched projecting strip forms an additional means of holding the tenon in the wood. Such a clinched projection is not needed for the bottom tenons, as the wings are amply sufficient to hold them in place.

The hanger part of the tenon is an integral lip 5, projecting from one end of the top edge of the tenon and provided with an elongated slot 6. The other member 7, hereinafter called the "hooked" member of the separable hanging-hinge, is a strip of sheet metal bent twice at right angles about mediately of its length, its two ends extending in opposite directions and being parallel. The upper end is perforated for screw-holes, and the lower end is provided with an elongated slot 8, having a side opening 9 about mediately of the length of the slot, whereby to form a hook onto which the slotted projection of the hanging tenon may be hung. The opening 9 in the hook is not wide enough to allow the projection 5 to pass through flatwise, and in order to hang the slotted projection 5 upon the hook the screen must be tilted outward



from the bottom, so that the projection 5 enters the opening 9 in the hook edgewise.

In order to hang the screen constructed as just described, the hooked members 7 of the hangers are nailed to the inner opposing faces of the blind-stop or brick mold of the window-casing with their hook ends standing down and the openings 9 of their hooks on the outer side. The screen is then tilted out and the slotted projections of its tenons inserted into the opening 9 of the hook until the point of the hook enters the slot 6 of the tenon projection. The screen then falls into place and is secured at the bottom in any suitable manner.

The modified form of hanging tenon shown in Fig. 7 only differs from the form just described in that the wings are upturned at the very edges of the sides of the tenon and the top edges of the top wings are flat.

The modification shown in Fig. 8 only differs from that shown in Fig. 7 in that the hanging projecting lip 5 is bent outward at right angles to the surface of the tenon and again bent upward at right angles, so as to stand parallel to the surface of the tenon. The bending of the hanging projecting lip 5, as shown in Fig. 8, is especially useful when the screen is made to cover both halves of the window, in which case the projection must be hung or hooked upon a hook projecting outward from the top piece of the window-casing.

The modification illustrated in Figs. 9 and 10 is adapted for fastening the bottom joints of the screen and only differs from the form shown in Figs. 5 and 6 in that its wings are upturned at the very edges of the sides and the top or driving edges of the wings are flat.

I claim—

1. A driven tenon consisting of a flat sheet of metal having a series of flared wings upturned at each side edge, said wings standing

in lines which diverge from the driving edge of the tenon, substantially as described.

2. A driven tenon consisting of a flat sheet of metal having wings upturned in opposite directions at each side edge, said wings being longer at their upturned edge than at their bended edge whereby to form cutting-points, substantially as described.

3. A driven tenon consisting of a flat sheet of metal having flared wings upturned in opposite directions at each side edge, said wings standing in lines which diverge from the driving edge of the tenon, and an integral slotted hanging lip projecting at one end of the driving edge of the tenon, substantially as described.

4. A driven tenon consisting of a flat sheet of metal having flared wings upturned in opposite directions at each side edge, said wings standing in lines which diverge from the driving edge of the tenon, an integral slotted hanging lip projecting at one end of the driving edge of the tenon and an integral clinch-strip projecting from the opposite edge of the tenon, substantially as described.

5. A driven hanging tenon consisting of a flat sheet of metal having flared wings upturned in opposite directions at each side edge, said wings standing in lines which diverge from the driving edge of the tenon, an integral slotted hanging lip projecting at one end of the driving edge of the tenon, and a suitable hook member for the purpose, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES F. WARE.

Witnesses:

SARA P. JOHNSON,  
H. J. O'TOOLE.