

No. 770,780.

PATENTED SEPT. 27, 1904.

B. C. ROCKWELL.
CORNER CLAMP FOR WINDOW SCREENS.

APPLICATION FILED AUG. 22, 1903.

NO MODEL.

Fig. 1.

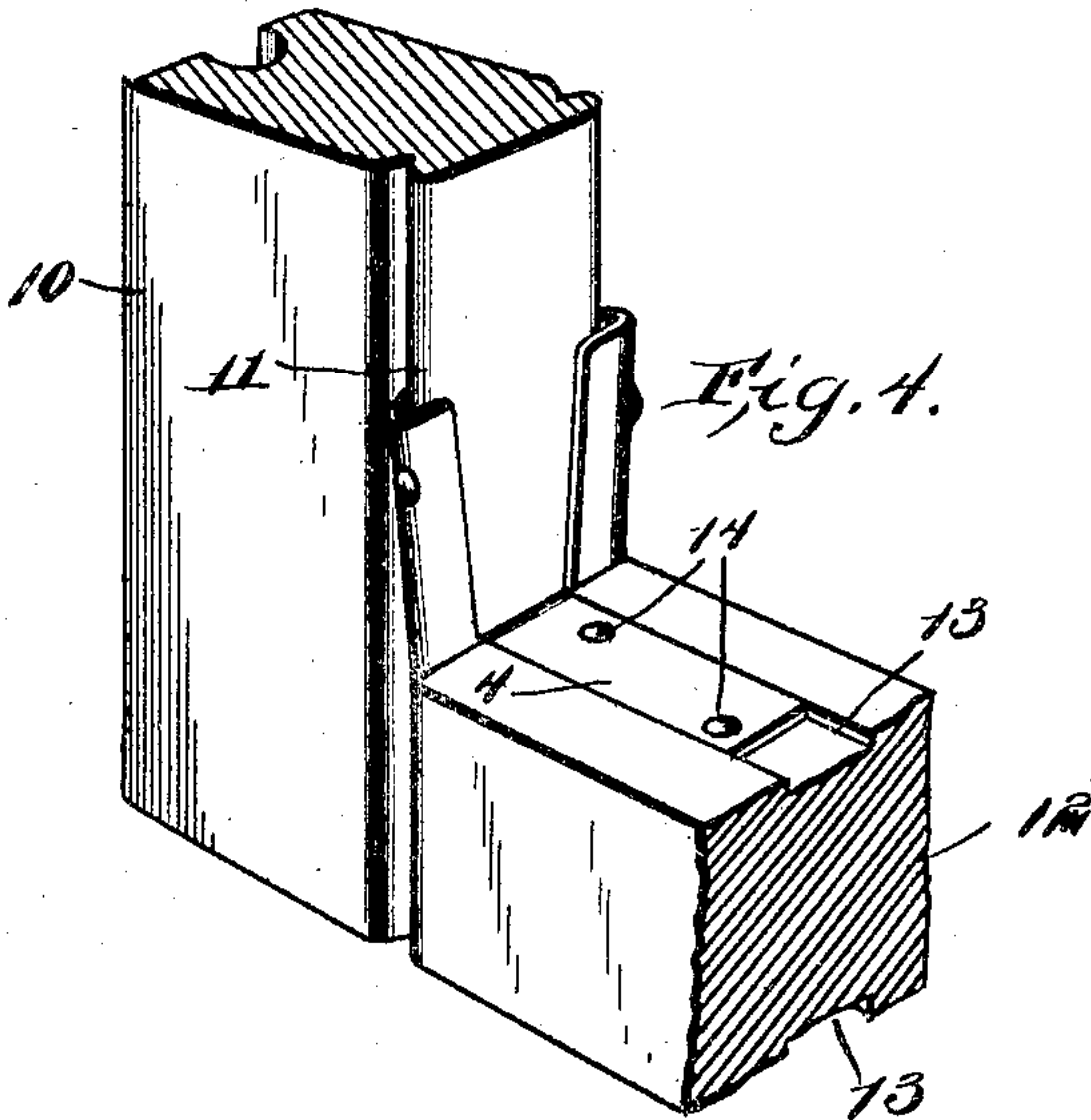
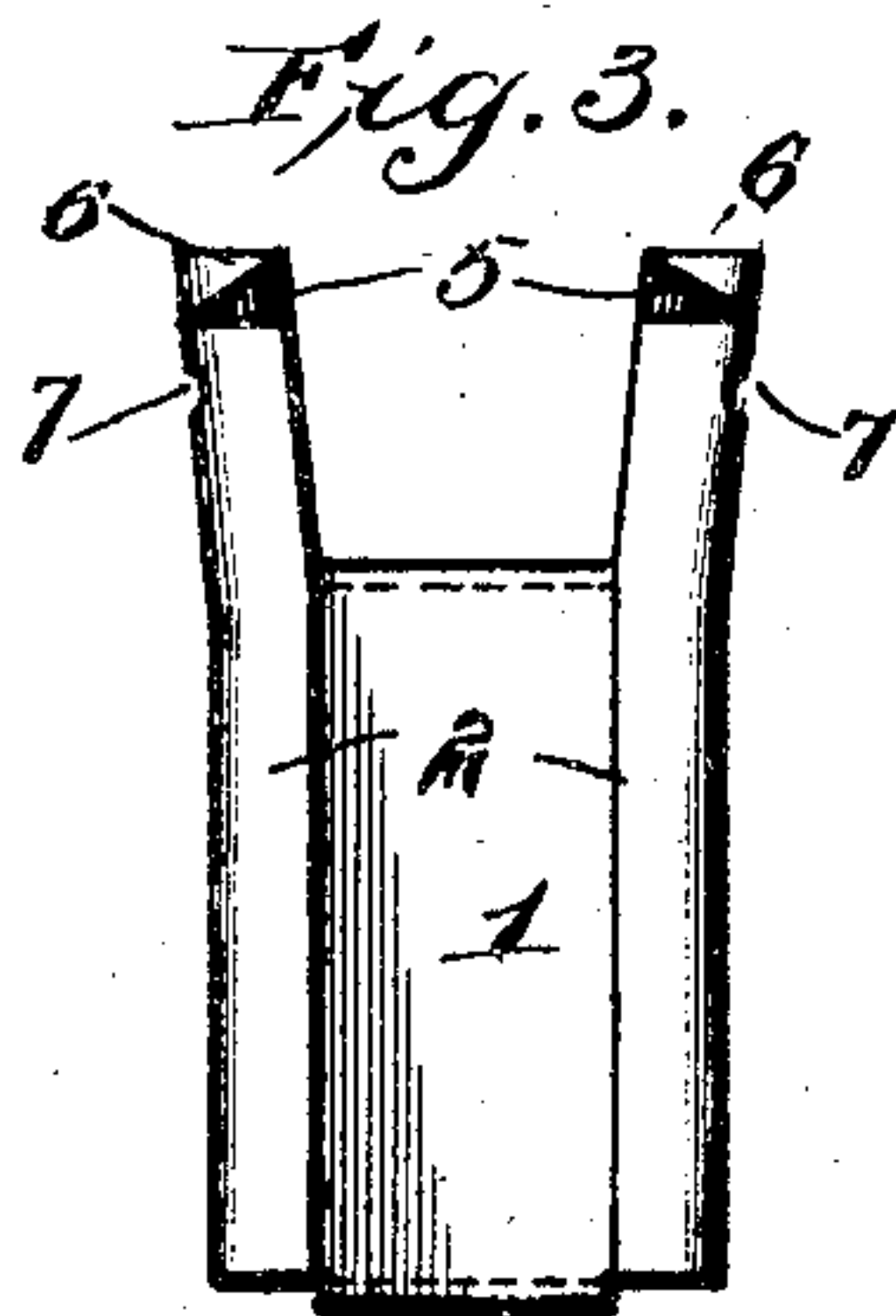
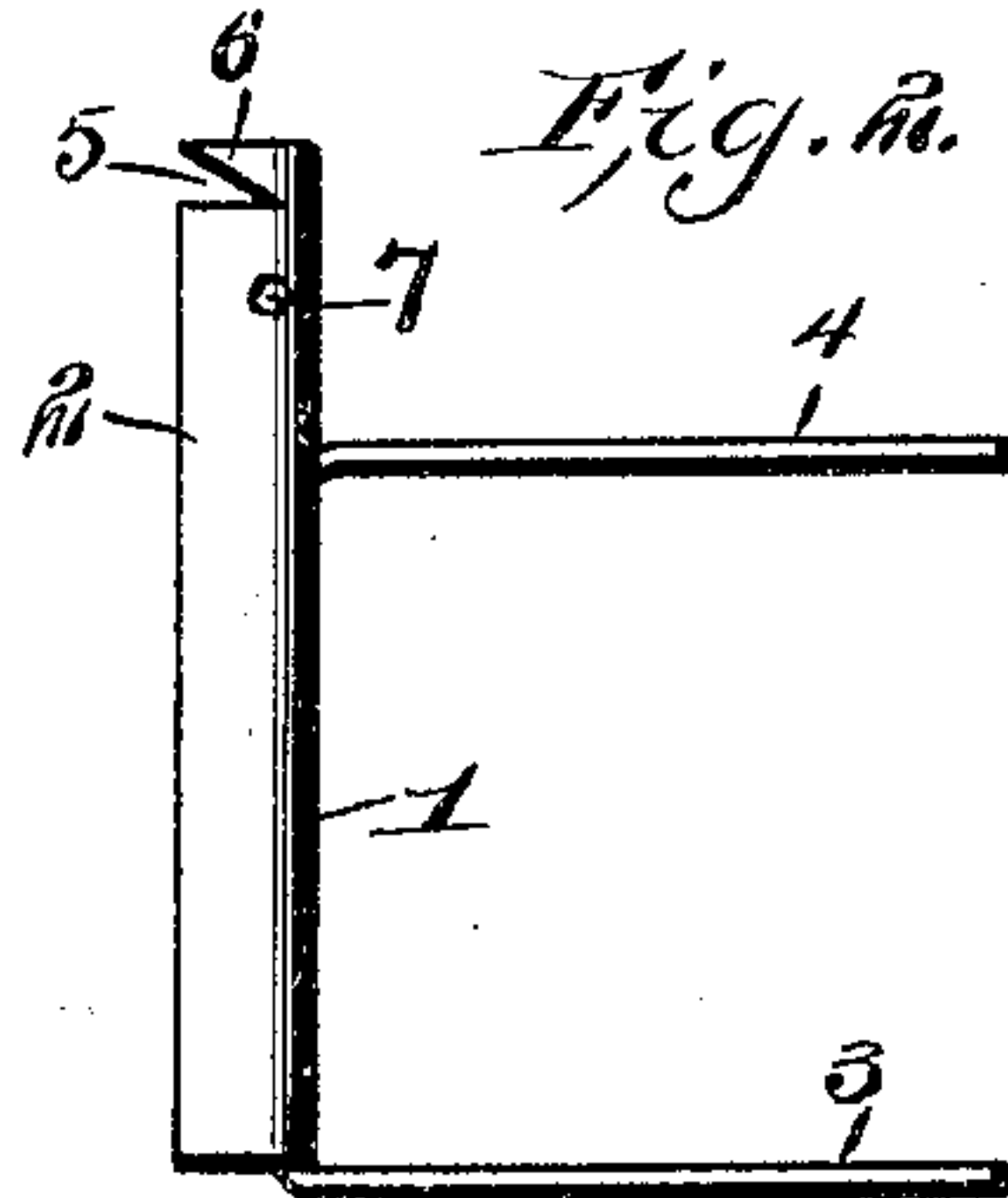
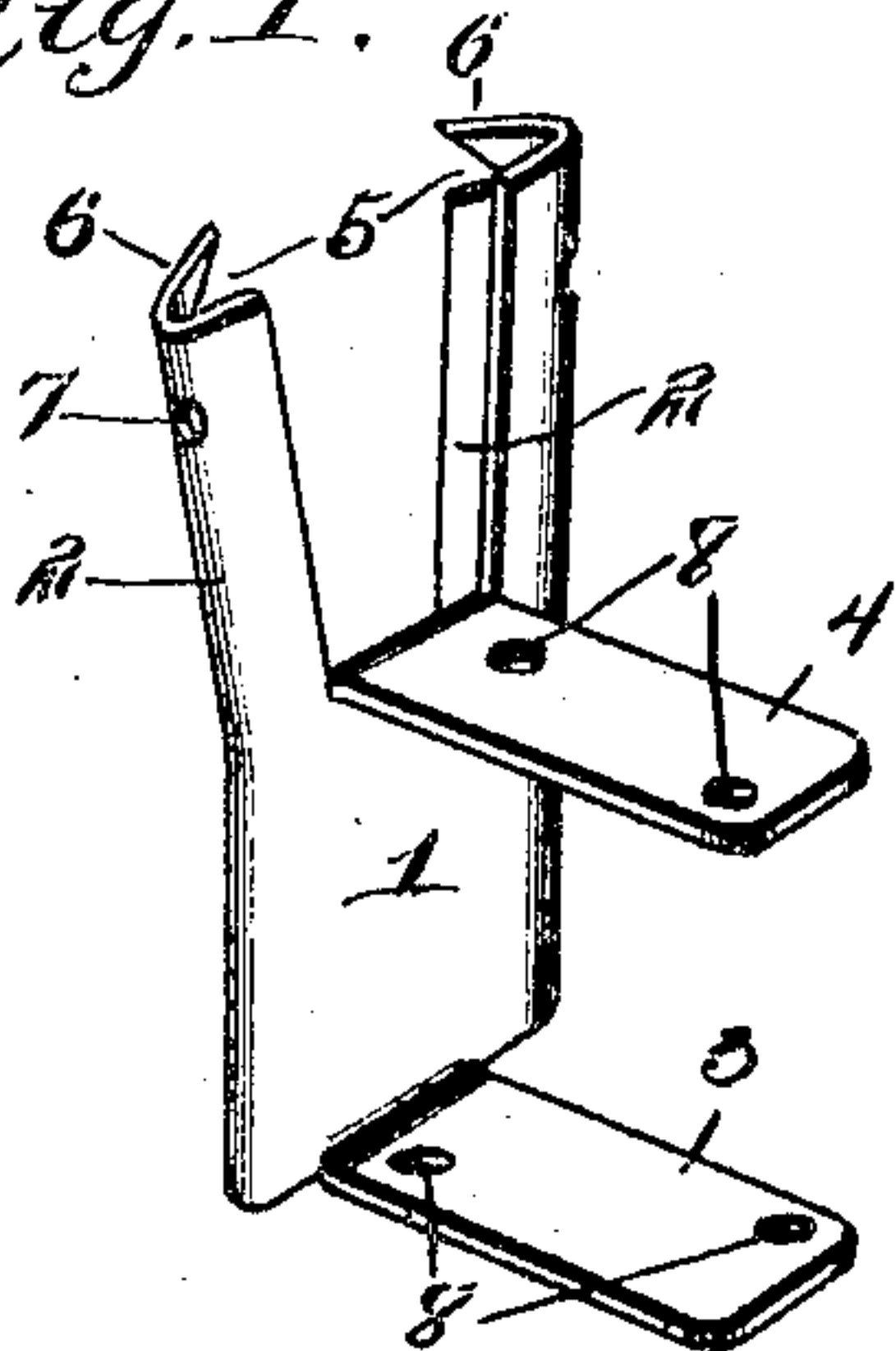


Fig. 5.

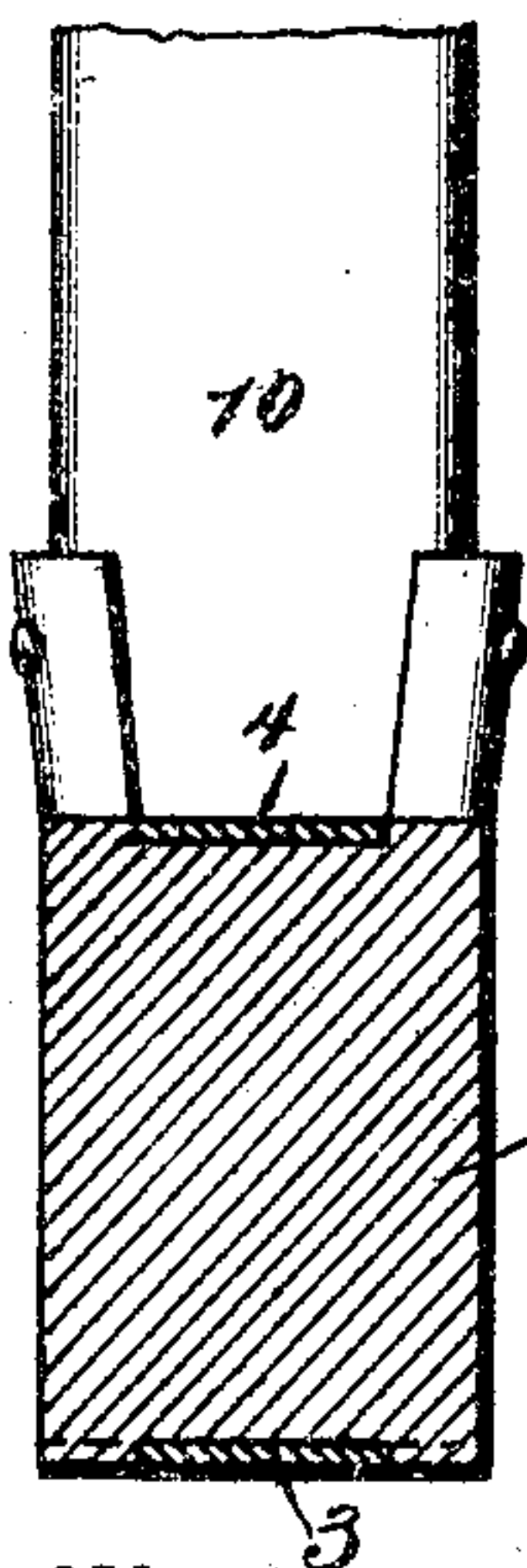


Fig. 6.

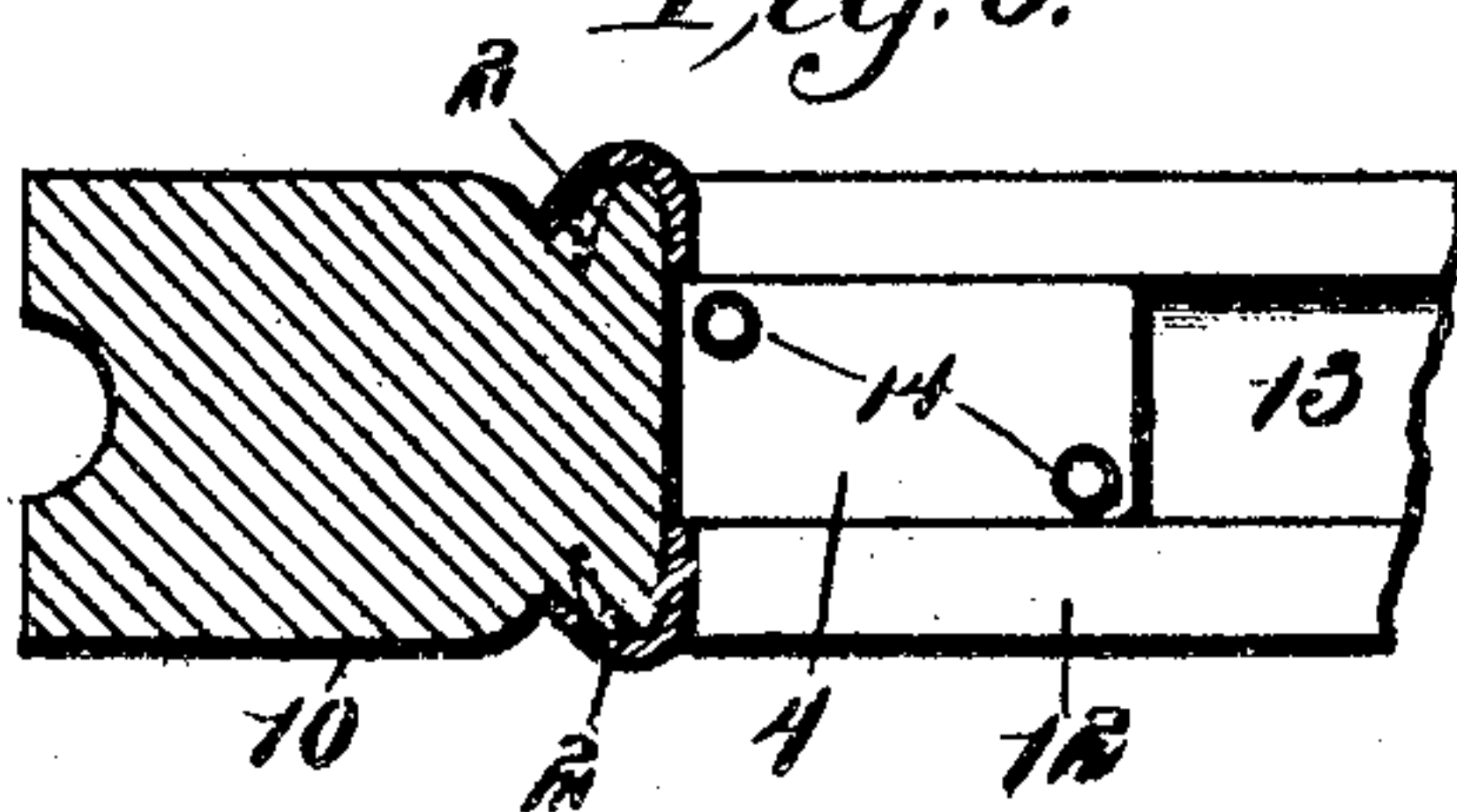
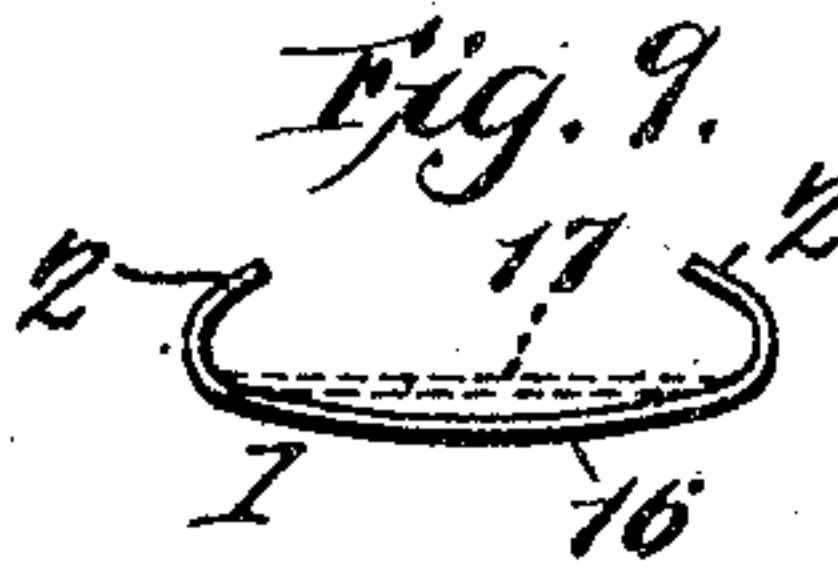
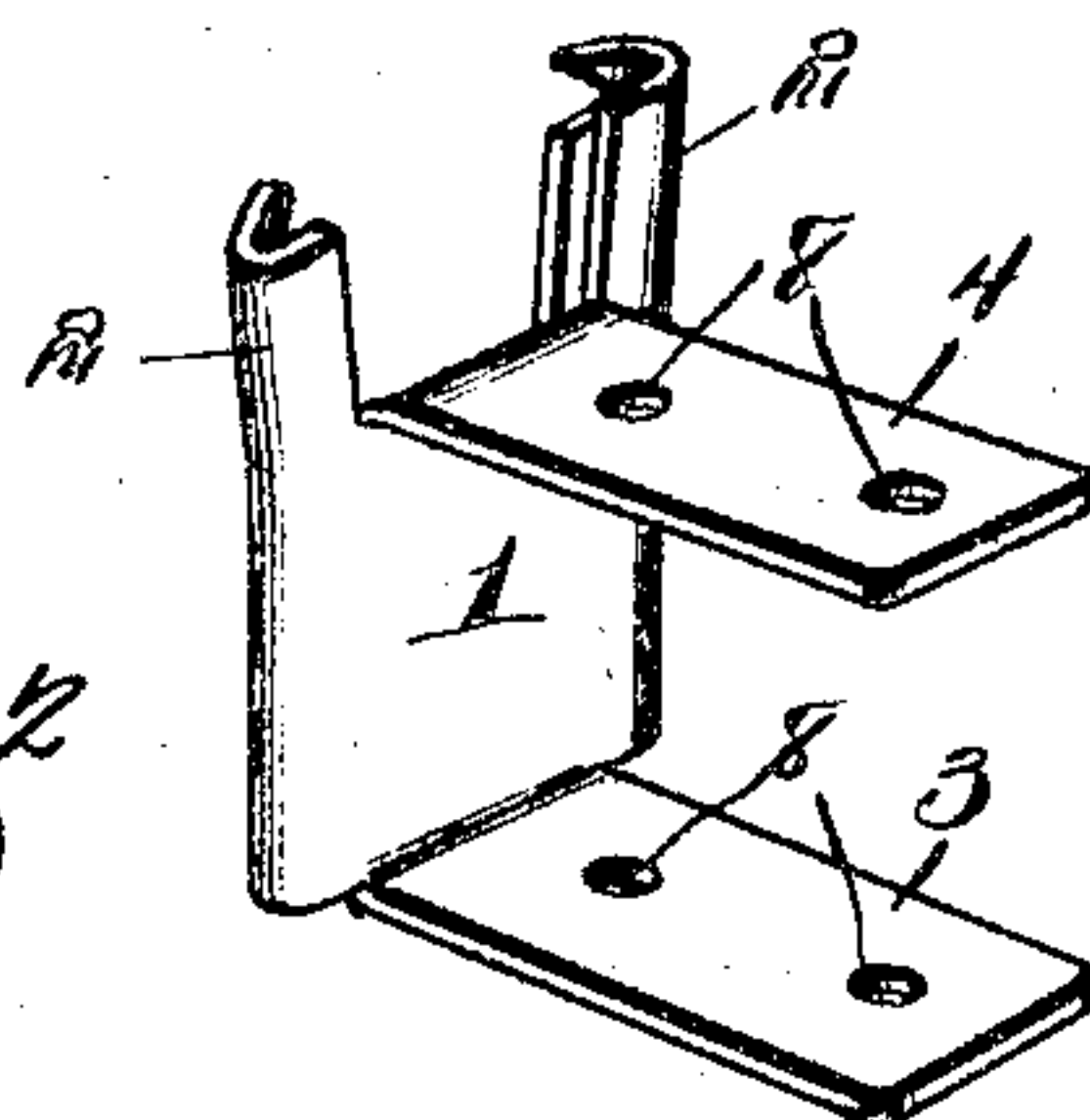


Fig. 7.



Witnesses

E. F. Stewart
Wm. Bagger

B. C. Rockwell, Inventor.
by C. A. Snowles
Attorneys

UNITED STATES PATENT OFFICE.

BYRD C. ROCKWELL, OF PERLA, ARKANSAS.

CORNER-CLAMP FOR WINDOW-SCREENS.

SPECIFICATION forming part of Letters Patent No. 770,780, dated September 27, 1904.

Application filed August 22, 1903. Serial No. 170,459. (No model.)

To all whom it may concern:

Be it known that I, BYRD C. ROCKWELL, a citizen of the United States, residing at Perla, in the county of Hot Springs and State of Arkansas, have invented a new and useful Corner-Clamp for Window-Screens, of which the following is a specification.

This invention relates to clips or clamps for the corners of window-screens or for the purpose of connecting the stiles with the rails at the corners of said screens; and it has for its object to provide a device of this class by means of which the rails and stiles, which have previously been cut to the proper lengths, may be quickly and effectively connected together, so as to form screen-frames which shall possess superior advantages in point of simplicity, durability, and general efficiency.

With these and other ends in view my invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a corner clamp or clip characterizing my invention. Fig. 2 is a side view of the same. Fig. 3 is an end view. Fig. 4 is a perspective view showing a screen-corner connected by my improved clip or clamp. Fig. 5 is a sectional view taken transversely through the rail and looking in the direction of the stile. Fig. 6 is a horizontal sectional view taken through the stile and looking downward upon the bottom rail. Fig. 7 is a perspective view illustrating a clamp of a slightly-modified construction. Figs. 8 and 9 are sectional detail views illustrating modifications that may be employed in connection with the various forms of my invention.

Corresponding parts in the several figures are indicated by similar numerals of reference.

My improved corner-clamp in all cases consists of a body-plate 1, provided at its edges with flanges 2 2, which extend in what may be termed an "outward" direction, the opposite side of said body-plate being provided with tongues 3 and 4, disposed, respectively, at its lower and near its upper edge and extending in what may be termed an "inward" direction—that is, oppositely to the flanges 2.

The upper tongue 4 may be cut wholly or in part from the stock of the body-plate 1 between the flanges 2 2. This, however, is not necessary or essential. The flanges 2 2, which are bent in the direction of each other, so as to coöperate to form a dovetail groove, are slightly spread, flared, or diverged in an upward direction apart from each other, as will be plainly seen in Fig. 3 of the drawings. This is for the purpose of enabling the stile to be readily inserted and driven home between the said flanges.

In the preferred form of my invention the flanges 2 2 are provided near their upper ends with notches 5, forming pointed teeth 6. I have also in the preferred form shown one flange provided at the corner thereof with a perforation 7, through which a nail may be driven. The tongues 3 and 4 are likewise provided with nail-holes 8, which are disposed staggering in order to avoid splitting the rail with which the device is connected when nails are driven therein. The tongues 3 and 4 may each be of any desired length, and the flanges 2 may be extended above the upper tongue 4 as far as may be desired.

My improved corner-clip is preferably manufactured by bending, stamping, or striking up the same from suitable sheet metal, such as galvanized iron, and it may, if desired, be varnished, japanned, or otherwise decorated and protected against rust. Usually, however, they will be simply struck up from galvanized iron or some rust-proof material, and inasmuch as only a very small portion of metal will be exposed it will not usually be found necessary to provide them with any decorative coating, especially inasmuch as cheapness of manufacture is a desideratum of the greatest importance in this class of devices. Be it understood, however, that I reserve to myself the right of producing my improved corner-clips or clamping devices in any manner that may be known in the arts at the present day, of any desired material, and with such variations as to shape and general appearance as may be fairly within the scope of my invention.

In the application and practical use of my improved corner-clamps it is to be understood

that the material of which the frame, stiles, and rails is composed is to be suitably machined to properly cooperate with my improved clips or clamps. This implies that the stiles are to be provided with suitable beads to be engaged by the flanges 2 2 of the clamps, and I prefer to make the said flanges rather larger than would be necessary to engage the semicircular beads usually formed upon this class of material. In the drawings the stiles are designated 10 and the beads of said stiles 11. I also form in the upper and lower sides of the rails 12 shallow grooves 13 of a depth to accommodate the tongues 3 and 4, which latter may thus be said to lie flush with the upper and lower edges of said rails. Nails 14 are driven through the tongues 3 and 4 to effect a proper and a permanent connection.

In assembling the parts of a screen-frame characterized by my invention the rails and stiles are first cut to the proper or desired lengths. My improved clips are then mounted upon the ends of the rails and secured in the manner described, and the rails are finally connected with the stiles by causing the diverging ends of the flanges 2 to engage the beads and grooves of the stiles and driving them into position until the ends of the stiles are flush with the upper and lower edges of the top and bottom rails, respectively. The teeth 6 of the flange 2 may by the stroke of a hammer be driven into the material of the stiles, so as to effect a practically permanent connection, or a nail may be driven through the opening 7 with practically the same result, or both of these means may be employed when a particularly durable connection is to be effected. In many cases, however, I deem these means of connecting the parts unnecessary, and in Fig. 7 of the drawings I have shown no such means for fastening the clip or clamp with relation to the stile.

As will be seen from the foregoing description, my improved corner-clamp is extremely simple in its construction, and it may be manufactured at a most trifling cost. It is not upon this alone, however, that I base my claims for utility and serviceableness of this device, the principal advantage being found, perhaps, in the facility and rapidity with which the parts of a frame may be connected, in the stability and rigidity of the parts when connected, and in the further fact that comparatively a very small surface of the metal employed is exposed to view, and that being principally disposed in the grooves 13 in the top and bottom rails. While it is desired that the material of which the rails and stiles is manufactured should be constructed with a view to fitting the corner-clamps precisely, (or vice versa,) it will be understood that if, for instance, the stile material should be of excessive width it may, owing to the diverging flanges 2 2, be inserted and placed in engagement with the clamp by exercising suf-

ficient force in driving the parts together. My improved device thus has an increased scope of utility which would not be present but for the divergence of the stile-engaging flanges.

It is frequently desirable that the body-plate 1 of my invention should be capable of expanding slightly, so as to provide for variations in the dimensions of the stock in connection with which my improved corner-clamp is to be used. I have already described how in the preferred construction of my invention the upper ends of the flanges 2 are flared outwardly, thus admitting of the insertion of a piece of stock which is slightly wider than the body of the clamp, into which it may then be driven home, an operation which would be impossible if the flanges were not flared, as described. While this mode of procedure may be easily carried out when soft wood is used, the various grades of hard wood which are frequently employed might not be sufficiently compressible to pass into engagement with the corner-clamp without straining and injuring the latter. To provide against such contingency, I have in Figs. 8 and 9 illustrated certain modifications. These views illustrate transverse sectional views taken through the body 1 of the corner-clamp, which in Fig. 8 has been shown as being longitudinally corrugated, the ribs or corrugations being designated 15. It is obvious that when a hard-wood stile of greater width than the normal width of the body-plate 1 is to be inserted the corrugations in said body-plate will yield and admit of the insertion of the end of the stile without danger of disfiguring or in any way injuring the body-plate. Under the construction shown in Fig. 9 the same result is attained by slightly bending the plate 1, as shown by the curved line 16, the extent of the curvature of which is indicated by its deviation from the dotted line 17. It is obvious that when a clamp thus constructed is connected with a hard-wood stile of slightly excessive width the curvature straightens, thereby increasing the width between the flanges 2 2 and admitting of the proper adjustment of the parts. Other methods of construction might be resorted to for the purpose of rendering the body-plates laterally expansible; but the forms shown in Figs. 8 and 9, which are applicable to any form of the device, are thought to be sufficient to illustrate this feature of my invention.

Having thus described my invention, I claim—

1. In a device of the class described, a body-plate provided at its side edges with dovetailed flanges and at its ends with parallel tongues, said tongues extending in a direction opposite to said flanges.

2. In a device of the class described, a body-plate provided on one side thereof with dovetailed flanges and on its opposite side with parallel tongues, the axial lines of the curves

or bends of said flanges and tongues being at right angles to each other.

3. In a device of the class described, a body-plate provided at its edges with dovetail flanges and at its lower and near its upper end with tongues extending oppositely to the flanges.

4. In a device of the class described, a body-plate having laterally-extending tongues and provided at its edges with flanges opposite to the tongues, said flanges being notched to form teeth.

5. In a device of the class described, a body-plate having laterally-extending tongues and dovetail flanges, the upper tongue being struck up from the stock of the plate between the flanges, whereby the latter extend above said upper tongue.

6. In a device of the class described, a body-plate having laterally-extending tongues and dovetail flanges extending from the edges of said plate opposite to the tongues, said flanges having diverging ends.

7. In a device of the class described, a body-plate having laterally-extending tongues and stile-engaging flanges, in combination with top and bottom rails having grooves to accommodate the tongues, and stiles having beads to be engaged by the flanges.

8. In a device of the class described, a laterally-extensible body-plate having stile-engaging flanges and rail-engaging tongues projecting opposite of the flanges but parallel with each other.

9. In a device of the class described, a body-plate having stile-engaging flanges at the edges thereof and provided with longitudinal corrugations between said flanges.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BYRD C. ROCKWELL.

Witnesses:

J. E. YOUNG,

A. G. SULLENBERGER.