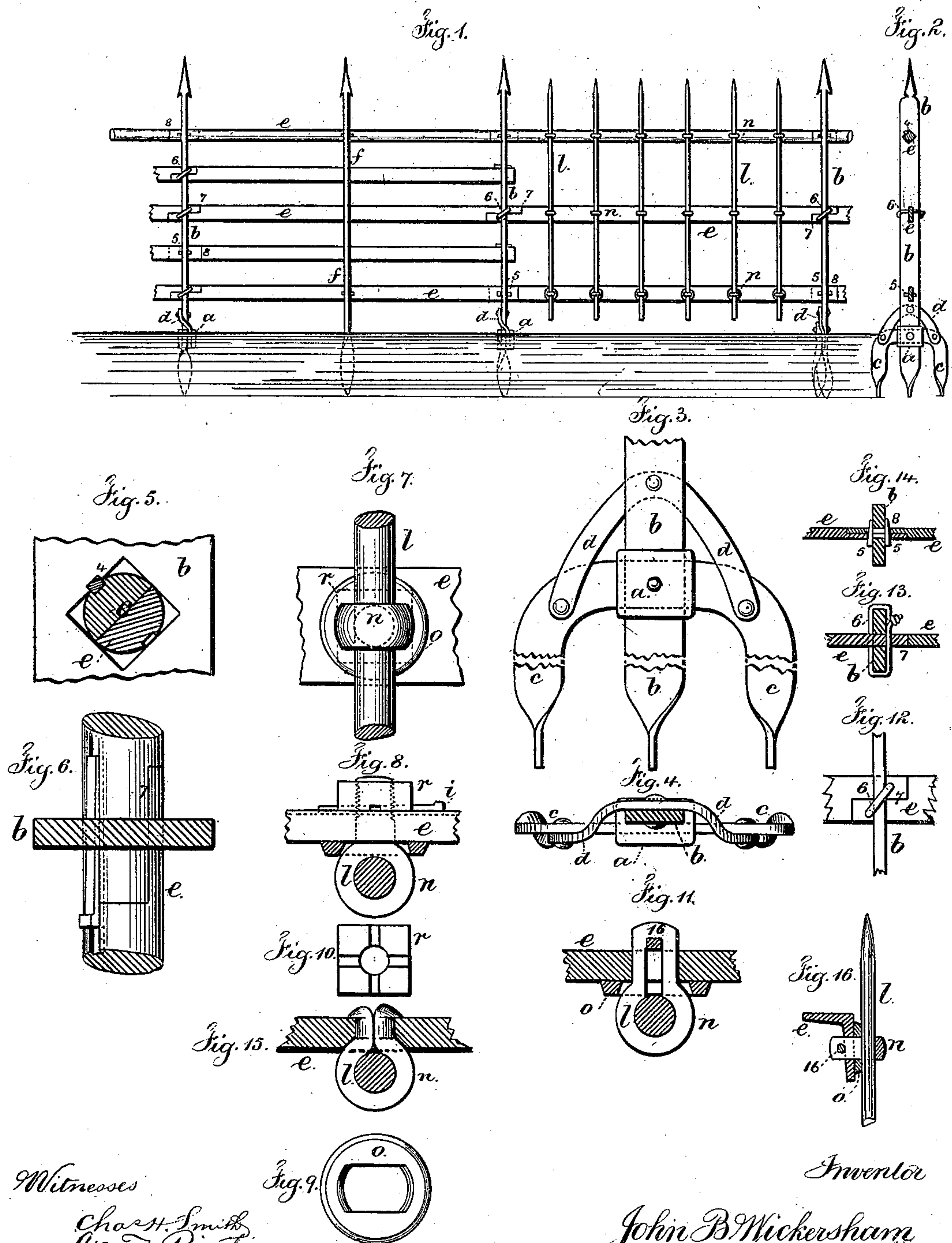


J. B. WICKERSHAM.
Metal Railings.

No. 230,977.

Patented Aug. 10, 1880.



Witnesses

Chas. H. Smith
Geo. T. Pinckney

Inventor

John B. Wickersham
Per Lemuel W. Serrell atty

UNITED STATES PATENT OFFICE.

JOHN B. WICKERSHAM, OF PHILADELPHIA, PENNSYLVANIA.

METAL RAILING.

SPECIFICATION forming part of Letters Patent No. 230,977, dated August 10, 1880.

Application filed June 13, 1879.

To all whom it may concern:

Be it known that I, JOHN B. WICKERSHAM, of Philadelphia, in the State of Pennsylvania, have invented an Improvement in Metal Railings, of which the following is a specification.

My improvements are made for strengthening the posts and panels and for facilitating the connection of the different pieces of which the fence is composed.

10 In the manufacture of metal railings it is the most usual way to construct the same in panels or sections and ship the same in that form. In some cases the parts have been made up into bundles for shipment and put together at
15 the place where the fence is to be used. The fenceshown in my Patent No. 212,075 is adapted to shipment in this manner, and the parts of the fence to which this invention relates may also be put together upon the ground where
20 the fence is to be used.

In the drawings, Figure 1 is an elevation of two panels of the fence. Fig. 2 is an elevation of the post. Fig. 3 is an elevation of the lower part of one post in larger size. Fig.
25 4 is a horizontal section of the post, showing the prong and braces. Fig. 5 shows a round rail introduced in the square hole in the post. Fig. 6 is a plan view of the round rail with the ends lapped. Fig. 7 is an elevation of part
30 of the picket and its connecting-eye. Fig. 8 is a plan of the same with the picket and washer in section. Fig. 9 is an elevation of the washer. Fig. 10 is a view of the back of the nut. Fig. 11 is a horizontal section of the
35 picket-washer and rail. Fig. 12 shows the lapping of the flat rails in larger size than in Fig. 1. Fig. 13 is a sectional plan of the same. Fig. 14 is a horizontal section of the vertical lap in the rails. Fig. 15 is a plan of the picket
40 and eye, and Fig. 16 is a vertical section of the picket-eye and rail.

In iron fences the posts have been made with prongs to pass into the earth. These have been riveted or screwed on, as shown in
45 my Patent No. 212,075.

I make use of a coupling-block, *a*, of metal, through which there is a mortise for the lower end of the post *b*, and also a mortise or mortises for the prongs. The cross-bar of the
50 prongs *c* is shown as passing transversely through this coupling-block, the prongs them-

selves standing vertically. The brace *d* between the prongs and the post serves to stiffen and strengthen the parts.

In iron fences that have before been made 55 there has been a prong or point at the end of the post, and in some cases a right-angled head and prong at one side of the post has been used, and two such posts and prongs have been set back to back and form a double 60 post, and panels have been made with two such posts and an intermediate post.

I make use of the single post *b*, with prongs *c* extending at each side of such post, so as to secure the same very firmly in the ground, and 65 I connect the horizontal bars or rails *e* to each other by the central vertical-bar, *f*, so as to make a complete and rigid panel. This bar *f* may have a prong at its lower end.

In many instances it is advantageous to in- 70 troduce square bars or rails where there is considerable strength required, and in line with them round bars or rails. I make the holes that pass through the posts *b* square, and preferably diagonal, as shown in Figs. 2 and 5, 75 and form a key-seat at one side of the hole, as at 4, so that the square bar or the round bar can be keyed to the post without requiring a different hole.

The iron rails or bars of the fence have been 80 halved or lapped, and introduced into the same hole in the post, and keyed, as seen in my Patent No. 212,075. I improve this connection by introducing transverse mortises through the bar near the end, as shown in Fig. 14, and driving 85 tapering nails or keys *5* through such mortises, so as to draw up and apply tension to the bars and render the structure very firm, the keys binding against opposite faces of the post *b*.

If desired these keys may be in the form of 90 a staple, as shown in Figs. 1, 12, and 13 at 6, so as to lessen the risk of the keys being displaced, and the ends of the staple-keys may be bent or twisted together if they are longer than the width of the post. 95

The lap-joints of the rails may be horizontal, as at 7, Figs. 1, 5, 6, 12, and 13, or vertical, as at 8, Figs. 1 and 14.

The pickets *l* are secured to the faces of the bars or rails *e*. In my aforesaid patent a clip 100 passing around the rail is used and a key. I make use of an eye, *n*, with a shank that passes

through a hole in the rail, and secured at the back. In Fig. 15 this eye is shown with a split shank, the ends of which are clinched; but I prefer to have the shank made with a mortise
 5 for a cross-key, 16, as seen in Fig. 11.

Usually it is best to employ a washer, *o*, between the picket and the rail having an elongated hole for the base of the eye, as seen in Figs. 8 and 11, and in elevation in Fig. 9, so
 10 that it is not necessary to countersink the hole in the rail for the base of the eye *o*, as seen in Fig. 15.

If the fence requires to be stiffened horizontally the rails *e*, or some of them, may be of angle-iron, as in Fig. 16, and the pickets be attached to the vertical portion of such angle-iron in the manner before described.
 15

For appearance, and to lessen the risk of the pickets being detached, I employ a nut upon
 20 the end of the shank of the eye *n*, as at *r*, Fig. 8, and this is not easily removed. Furthermore, I cut at the back of the nut cross-channels, (see Fig. 10,) and drive the key *i* through the mortise of the bolt, and it entering one of the
 25 grooves in the base of the nut prevents the same turning. In using this key it is prefer-

able to employ the grooved rail, as shown in my said patent for the key, to rest in the groove.

It will be evident that these improvements
 30 may be used on fences, railings, window-guards, tree-guards, or similar structures.

I claim as my invention—

1. In combination with a post and prongs extending out from the post, a brace that is
 35 placed diagonally above the prong between the same and the post, substantially as set forth.

2. The combination, with the pickets and rails in a metal fence, of an eye having a
 40 slotted shank and a connecting-key, substantially as set forth.

3. The combination, with the pickets and rails in a metal fence, of an eye and shank, a washer, and a nut or key, substantially as set
 45 forth.

Signed by me this 9th day of June, A. D. 1879.

J. B. WICKERSHAM.

Witnesses:

GEO. T. PINCKNEY,
 CHAS. H. SMITH.