H. A. STREETER.

Metallic Window-Sash.

No. 220,505. Patented Oct. 14, 1879.

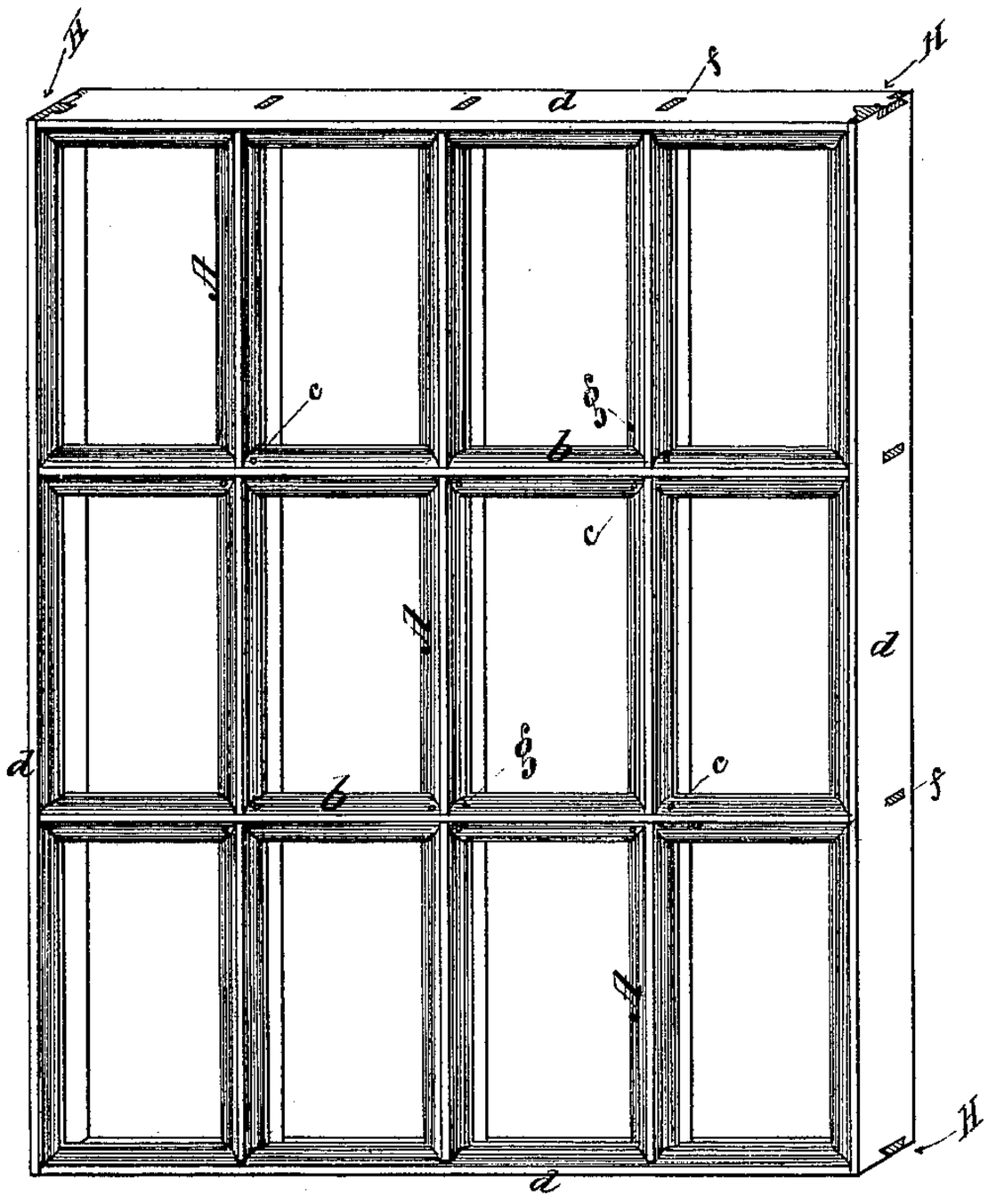

Fig. I.

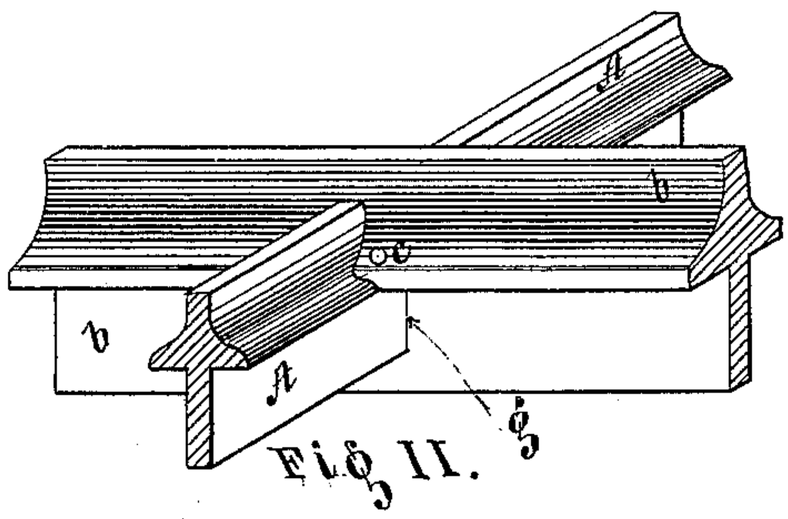

Fig. II.

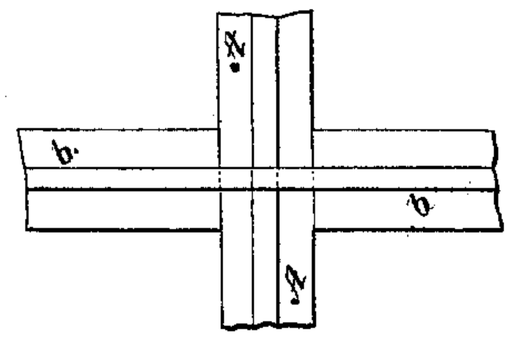

Fig. III.

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UNITED STATES PATENT OFFICE.

HERBERT A. STREETER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN METALLIC WINDOW-SASHES.

Specification forming part of Letters Patent No. **220,505**, dated October 14, 1879; application filed August 4, 1879.

To all whom it may concern:

Be it known that I, HERBERT A. STREETER, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in the Construction of Metallic Window-Sashes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which make part of the specification.

In the drawings, Figure I represents an outside view of a metallic sash, constructed on my principle. Fig. II is a detail, showing how the vertical mullion passes through the cross-mullion; Fig. III, an inside view of the mullions where they intersect, showing rabbet for the reception of the glass.

Like letters refer to like parts in all of the figures.

My invention relates to the construction of metallic window-sash for asylums, hospitals, jails, &c., and wherever fire and burglar proof qualities are required.

It consists in the manner in which the several parts are made and put together.

I propose to use wrought, cast, or malleable iron, steel, or any other metallic material combining strength with fire-resisting qualities, but for example show in the drawings a form of wrought-iron sash-bar suitable for the purpose.

The great difficulty heretofore experienced in the manufacture of metallic sashes has been the time and labor, and consequent expense of making the rails and mullions fit securely at their intersections, each mullion having to be mitered or secured by angle iron or plates to its component member, requiring expensive and complicated machinery and skilled labor, as the work is required to be done very accurately in order to come together properly.

Now I propose to obviate all these difficulties, and at the same time produce a stronger and more durable sash.

The outsides or rails of my form of sash are made of sash-bar, as shown at *d*, Fig. I, and are milled and dovetailed at the corners, as shown at H. This form of manufacture produces a strong corner without the aid of corner-irons, screws, or miters, leaving it smooth and true.

Holes are drilled in the rails of the sash, so that it can be secured to the wood or iron frame, as the case may be. The cross-mullion *b* is to be made in one piece of metal, and is punched at *g*, Figs. I and II, so that the vertical mullion A, which will be in one solid piece, but of a smaller size of sash-bar, can pass through the hole *g* without having to be cut or mitered, thereby saving expense, at the same time securing great stiffness with the least amount of material, as the full strength of the vertical mullion A and a proportionate amount of the cross-mullion *b* is retained, making the sash perfect as a window-guard, for which purpose it is specially adapted for use in insane asylums or other places where security is needed against ingress or egress. This sash, having the ornamental appearance that it does, is suitable for use in private dwellings for basement-windows, areas, &c., as it obviates the necessity for the unsightly window-guards now in use.

The ends of the vertical and cross-mullions A and *b* are to be mortised, tenoned, and riveted to the rails *d*, as shown at *f*.

Pins *c* are to be inserted at the intersection of the mullions to keep them rigidly in position.

In Fig. II the vertical mullion A is shown in detail, passing through the cross-mullion *b*, and as the vertical mullion is of a smaller size of bar than the cross-mullion, a proportionate amount of strength in material is retained in both mullions.

A great advantage is derived by using this form of sash, as it greatly facilitates the manufacture, the holes *g* being punched by machine, and the tenons *f* being made at the same time. No planing is required, each part being whole in itself.

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

1. The vertical mullion A, in combination with the larger-sized cross-mullion *b*, and passing through the same, whereby the full strength of the vertical mullion and a proportionate

amount of strength of the cross-mullion is retained.

2. The solid vertical mullion A, passing through the hole *g* punched in the larger-sized cross-mullion *b*, and secured at the intersection by the pin *c*.

3. In combination with the outer frame, constructed as described, the vertical mullion A, cross-mullion *b*, through which mullion A is passed, and pin *c*, substantially as and for the purpose set forth.

HERBERT A. STREETER.

In presence of—
E. V. JOHNSON,
RUFUS KING.