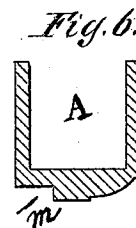
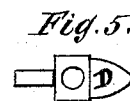
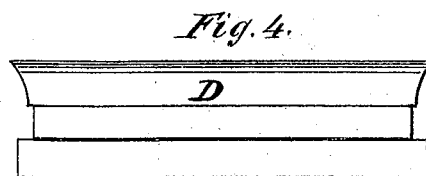
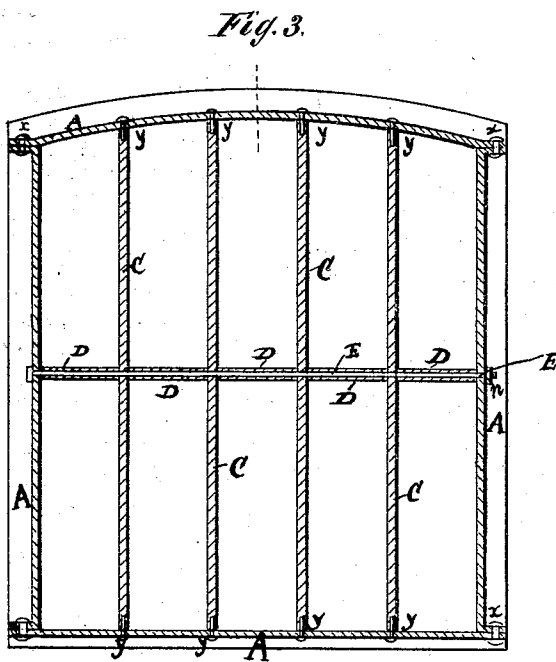
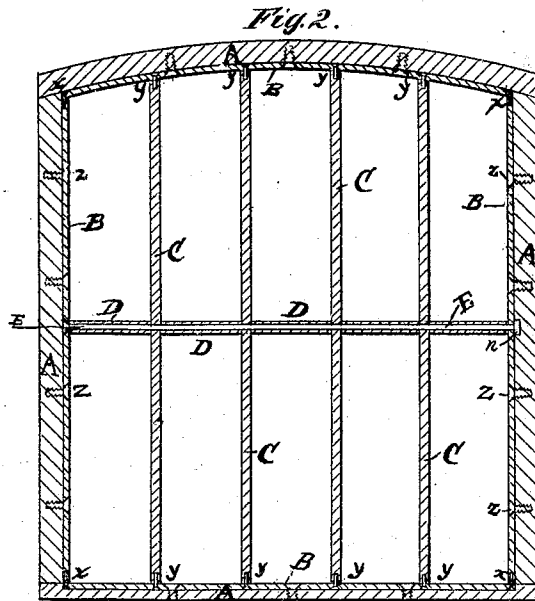
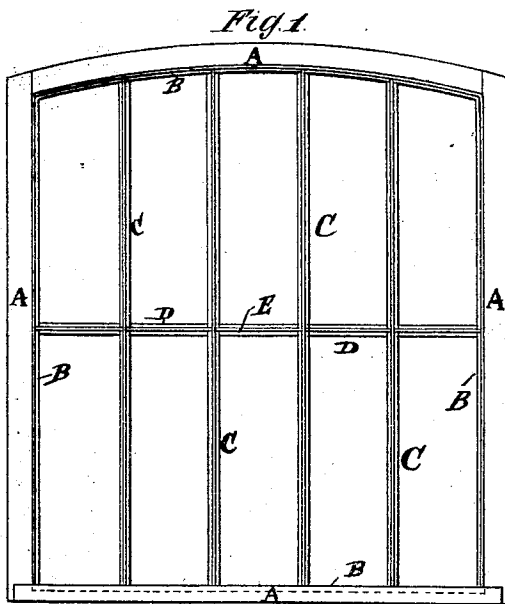


S. J. MEEKER.
Cast Iron Window Sashes.

No. 151,897.

Patented June 9, 1874.



Witnesses:
M. W. Neil
Francis Carr Brown.

S. J. Meeker, Inventor:
by atty, J. C. Clayton.

UNITED STATES PATENT OFFICE.

STEPHEN J. MEEKER, OF NEWARK, NEW JERSEY, ASSIGNOR TO HIMSELF
AND DAVID M. MEEKER, OF SAME PLACE.

IMPROVEMENT IN CAST-IRON WINDOW-SASHES.

Specification forming part of Letters Patent No. 151,897, dated June 9, 1874; application filed
March 11, 1874.

To all whom it may concern:

Be it known that I, STEPHEN JONES MEEKER, of Newark, in the county of Essex and in the State of New Jersey, have invented certain new and useful Improvements in Cast-Iron 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, forming a part of this specification.

Figure 1 is an elevation, the outer or main frame being of wood. Fig. 2 is a vertical section of the same. Fig. 3 is a vertical section, showing the entire sash of iron. Fig. 4 is an elevation of a horizontal mullion. Fig. 5 is a cross-section of the same. Fig. 6 is a cross-section of the cast-iron main frame.

My invention relates to the construction of window-sashes out of malleable cast-iron; and consists in making it in several parts, one of which is a hollow cross-mullion, secured together by horizontal bolts and by rivets.

Heretofore rolled iron has generally been used for iron sashes for fire-proof buildings, jails, or asylums. The cost of iron in this form, in consequence of labor, is so high as to restrict its use.

In my invention I use malleable cast-iron, casting the several portions of the frame, such as the meeting-rail, side and bottom strips, and horizontal and vertical division-strips or mullions, in separate pieces, so that they may be readily cast and tempered or annealed.

The main frame A may be made either of iron or wood. When made of wood, as shown in Figs. 1 and 2, the four pieces A, which compose it, are put together in the usual way, and secured at the corners. The outer molding-strips B are each cast in one piece, and made malleable, and fitted and riveted together at their corners, as shown at X. The vertical division-strips or mullions C are also cast separately, annealed, and fitted in place between the top and bottom rails, to which

they are secured by rivets, as at Y. The horizontal division-strips or mullions D are cast, made malleable, and fitted in a similar manner, but are of short lengths—only the width of each pane—and are cored out so as to be hollow for an iron bolt to pass through, and by means of a screw-nut to clamp the parts together. E is an iron bolt passing through the side strips B and mullions D. A nut, *n*, on end of this bolt serves to clamp the parts together. The various parts, B C D E, thus riveted and screw-bolted together, are then placed within the window-frame A, and secured thereto by screws Z. The sash is then ready for the glass.

When the main frame A is made of iron, (common gray iron will answer a good purpose,) it is cast in four pieces, having a  cross-section, and riveted at the corners, as shown in Fig. 6, having the inner edge cast with a molding or in mullion form, as shown at *m* in said figure. The strips C are then put in place and riveted. The strips or mullions D are then put in place, and the bolt E passed through them, and through strips C and frame-strips A, and drawn up tight by nuts Z. The sash is then ready to be glazed.

What I claim as new, and desire to secure by Letters Patent, is—

1. The hollow cross-mullions D, in combination with bolt E, when constructed and operating substantially in the manner and for the purposes set forth.

2. The combination of the parts B C D with frame A by means of bolt E and rivets, substantially as and for the purposes set forth.

In testimony that I claim the above-described invention I have hereunto signed my name this 21st day of February, 1874.

STEPHEN J. MEEKER.

Witnesses:

J. C. CLAYTON,
FRANCIS C. BOWEN.