M. F. LYONS.

Windows.

No. 164,194. Patented June 8, 1875.

Fig: 1.

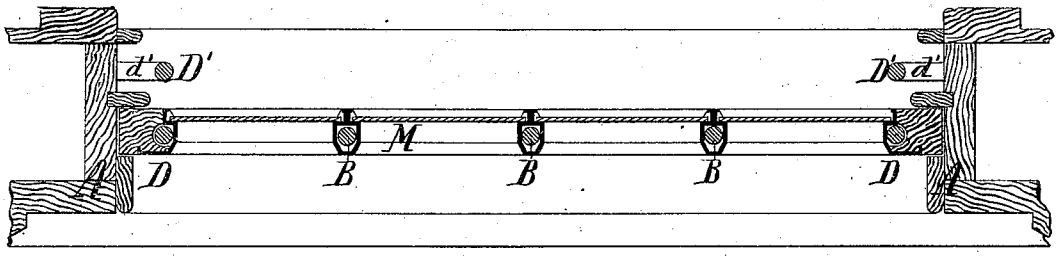
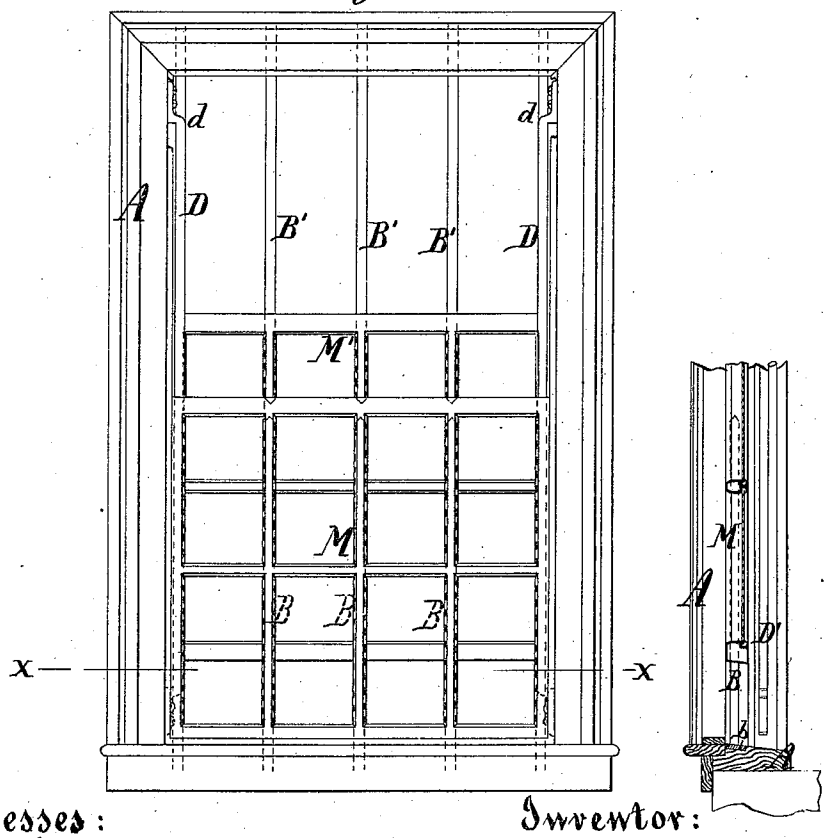


Fig: 2.



Witnesses:

Henry Germain

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Inventor:

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by his attorney

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UNITED STATES PATENT OFFICE.

MICHAEL F. LYONS, OF NEW YORK, N. Y.

IMPROVEMENT IN WINDOWS.

Specification forming part of Letters Patent No. **164,194**, dated June 8, 1875; application filed May 14, 1875.

To all whom it may concern:

Be it known that I, MICHAEL F. LYONS, of New York city, in the State of New York, have invented certain Improvements relating to Windows, of which the following is a specification:

My improved window may be used in various situations, but is intended more particularly for insane hospitals. It is very important in insane establishments to make the windows secure, so that the patients cannot escape through the windows. At the same time the effect of giving the window the appearance of a prison is very injurious on the minds of some patients.

I give the windows the appearance of ordinary windows, with thick stout sashes and narrow panes of glass. I obtain all the security due to windows strongly barred with iron, and I secure all the ordinary facility for raising and lowering the sashes to secure ventilation. I attain these ends by placing fixed bars within holes extending longitudinally in the uprights of the sash.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a horizontal section on the line *x x* in Fig. 2. Fig. 2 is an elevation from the interior of the building, showing the entire window with the upper sash lowered; and Fig. 3 is a portion of a vertical section, with the lower sash partly raised.

Similar letters of reference indicate like parts in all the figures.

A is the fixed framing of the window. B B are longitudinal bars projecting upward from a horizontal bar, *b*, by which they are all united together and to the window-framing A. The several bars B stand in holes in the lowermost of the sashes M, as indicated. When the lower sash is raised, more or less, the bars B become visible to the eye as a fixed grating connecting the bottom of the window-sash with the fixed window-framing below. When the sash is lowered the bars B are entirely concealed, and the window presents its usual appearance, with no indication of the existence of the bars B. Similar bars B′ extend down from a similar connecting-bar at the top of the window-frame, and are similarly received in holes extending longitudinally in the sash-bars or uprights of the upper sash M′. I prefer to make the bars B B′ always of a little less length than the sashes in which they are received. The upper end of the holes in the lower sash M are plugged. The lower end of the holes in the upper sash are preferably left open. This latter provides a ready escape for any water which shall ever, from storms or other causes, get into the holes in the sash.

I employ longer bars D D at each side of the window. They stand in holes in the side uprights of the lower sash. They are set loosely in sockets in the window-sill, so that, on detaching the fastening at the upper end, they are liberated and can be taken out. They are formed straight nearly the whole length, and the lower sash may freely traverse up thereon to a considerable distance. The upper end of each is formed with an offset or stop, *d*, and is secured by wood-screws or other removable fastenings to the inner face of the window-frame. The bend *d*, at the upper end of each bar D, forms a stop which prevents too great elevation of the lower sash. I employ corresponding bars D′, with corresponding offsets or stops *d′*, at the sides of the window, to serve relatively to the upper sash M′.

Except for the side bars D, there would be a larger space near the sides of the windows than between the bars B B, near the middle of the window. The insertion of the bars D renders the space uniform, and discourages any attempt on the part of the prisoner to enlarge the opening by cutting at the side of the window. The bars D may therefore perform double functions as part of the system of bars to imprison the patient, and as stops to prevent the lower sash from being raised too high. The importance of this latter function will be understood when it is realized that the sashes are readily released by being moved to their extreme positions.

When it is desired to remove the sashes the bars D and D′ are first liberated. Then the lower sash is raised to its highest position, and, being gently inclined inward, may be readily removed. Correspondingly lowering

the upper sash to its extreme lowest position detaches it from its bars B′, and it may be similarly removed.

The appearance of a prison cannot be avoided when the windows are open, but my invention completely avoids it during the many months while the windows are closed. In case of defective workmanship or a slight bending of one or more of the bars B, there may be more than usual friction to resist the motion of the sashes; but ordinarily, with proper care and skill, the presence of my invention in no wise interferes with the ordinary facilities for opening and closing the windows, to secure any desired conditions in regard to ventilation.

I can use wood for the material of the whole of the several sashes, or metal as a material for the whole; but I prefer to make the sashes mainly of wood, and to make the upright bars, in which the bars B are received, of sheet metal, properly bent and formed, as shown in the drawings.

I claim as my improvement in windows—

1. The employment of bars B B′, inclosed and concealed within the sash, as and for the purposes herein specified.

2. In combination with the bars B inclosed within the sash M, the longer bars D *d*, adapted to serve both as bars and as stops for the sash, as and for the purpose herein specified.

In testimony whereof I have hereunto set my hand this 13th day of May, 1875, in the presence of two subscribing witnesses.

MICHAEL F. LYONS.

Witnesses:

WM. C. DEY,

HENRY GENTNER.