

No. 741,830.

PATENTED OCT. 20, 1903.

M. PRIOR.  
DEVICE FOR OPENING SWINGING WINDOWS.  
APPLICATION FILED JUNE 29, 1903.

NO MODEL.

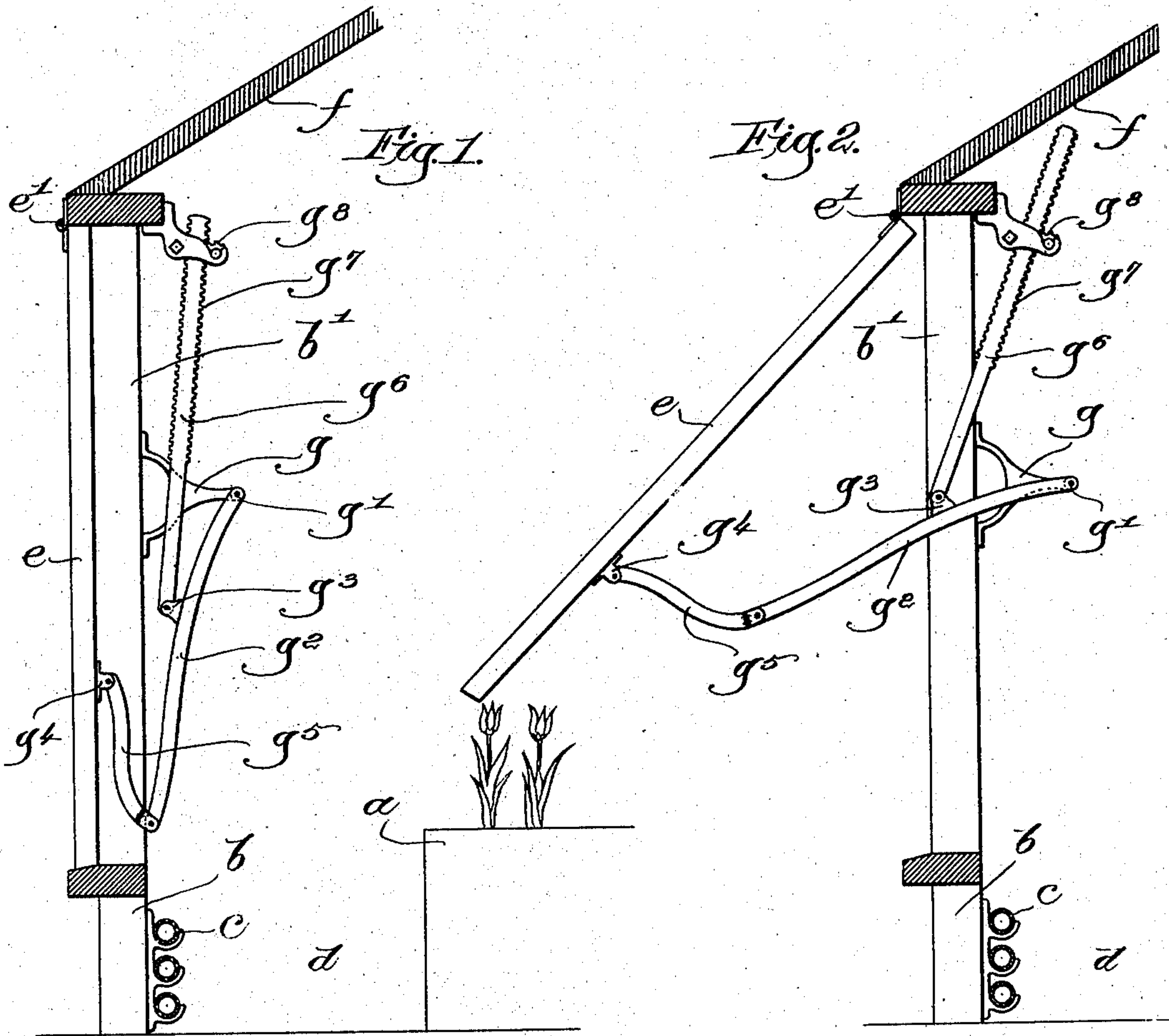
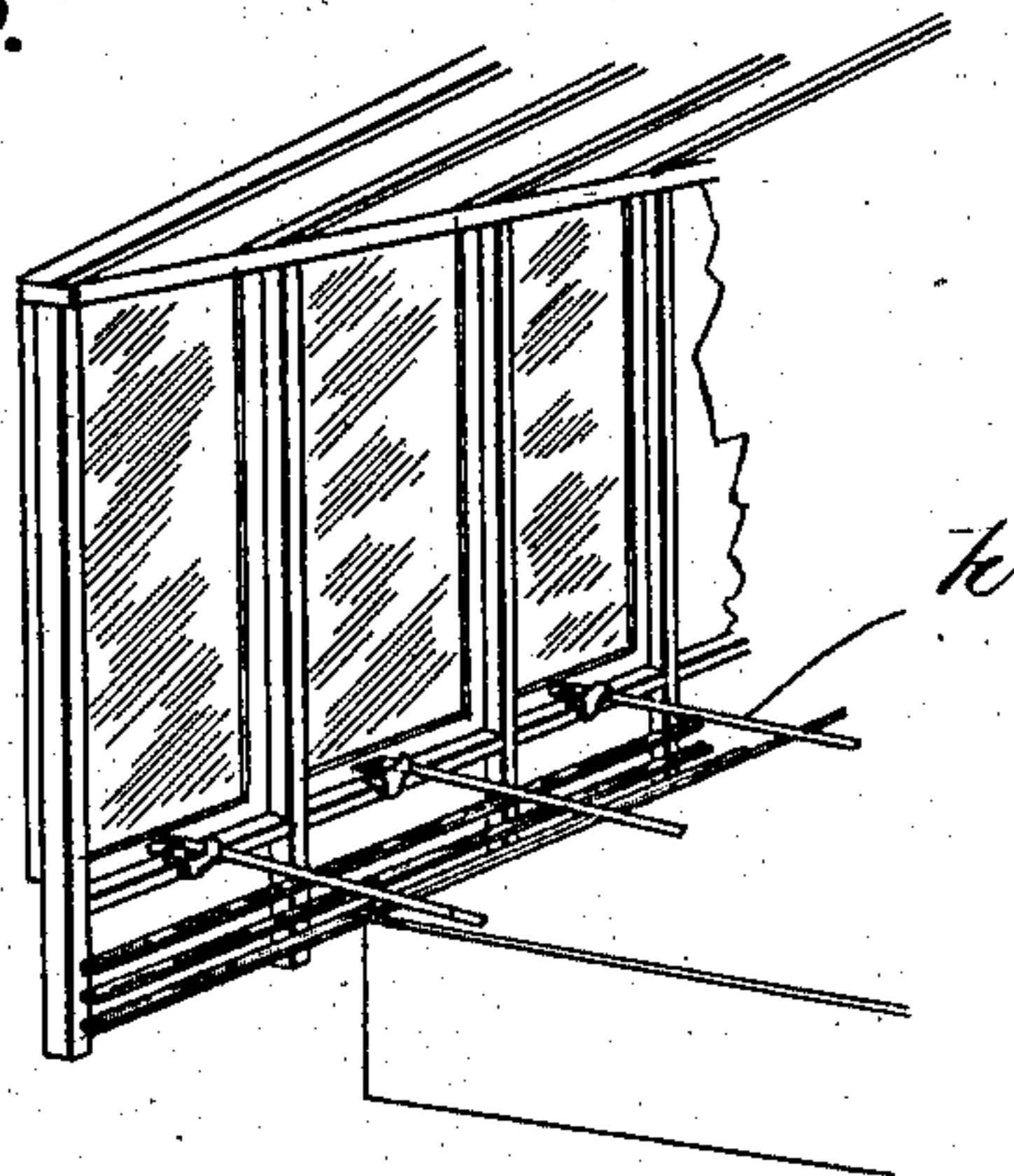


Fig. 3.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## DEVICE FOR OPENING SWINGING WINDOWS.

SPECIFICATION forming part of Letters Patent No. 741,830, dated October 20, 1903.

Application filed June 29, 1903. Serial No. 163,478. (No model.)

*To all whom it may concern:*

Be it known that I, MATTHEW PRIOR, of Watertown, county of Middlesex, State of Massachusetts, have invented an Improve-  
5 ment in Devices for Opening Swinging Windows, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 My present invention is an improvement in window-operating mechanism, and is particularly intended to facilitate the opening of vertically-hanging windows, such as are used in the sides of greenhouses, especially low  
15 greenhouses for growing garden-truck and potted plants. The kind of greenhouses last mentioned have a long series of side windows hinged at their upper ends and usually provided with a projecting rack-bar or other operating device at their lower ends, so that  
20 when the windows are closed these bars project across the narrow path, and when a workman wishes to walk along by the bed to attend to the plants thereon he is obliged to  
25 stumble over these operating-bars, at great inconvenience and often either to his own or their injury.

My present invention has for its object the provision of means for opening and closing  
30 these windows without interfering with the passage-way, said means confining itself closely to the wall out of the way and being readily adaptable for use with the mechanism shown in my Patent No. 703,669, dated  
35 July 1, 1902.

The constructional details of my invention will appear more fully in the course of the following description, reference being had to the accompanying drawings, in which I have  
40 illustrated one embodiment of the invention, and the latter will be more particularly defined in the appended claims.

In the drawings, Figures 1 and 2 are cross-sectional views of a portion of a greenhouse  
45 provided with my invention, the latter being shown in side elevation, closed in Fig. 1 and open in Fig. 2. Fig. 3 is a perspective view illustrating the inconvenience attending the old style of apparatus.

50 By reference to Figs. 1 and 3 the purpose

of my invention will be more fully apprehended, it being understood that it is especially intended for low greenhouses in which there is provided room merely for the attendant to stand, the greenhouse being very low  
55 usually and the path being only wide enough for him to walk in, said figures indicating at *a* the potting-bed or raised body of earth provided for growing the plants in, and at *b* the side of the greenhouse, against which are  
60 usually carried steam-pipes *c*, between which and the bed is a narrow path *d*, extending along the swinging windows *e*, hinged at their upper ends at *e'* next to the roof *f*.

It is the purpose of my invention to pro-  
65 vide means for easily and quickly opening the windows *e* without obstructing the path *d* or interfering in any way with the free movement of the workmen therealong, instead of the old method, where operating-bars *h* have  
70 been secured to the lower ends of the windows, as shown in Fig. 3, causing great inconvenience, waste of time, frequent breakage, &c. At a convenient place—as, for instance, on the posts *b'*—I secure a bracket *g*,  
75 to the inner end of which is pivoted at *g'* an arm *g<sup>2</sup>*, more or less S-shaped and having a projecting ear *g<sup>3</sup>* intermediate its ends. To the inner side of the window *e* I secure a  
80 small bracket *g<sup>4</sup>*, pivotally connected by a lever *g<sup>5</sup>* to the lower end of the arm *g<sup>2</sup>*. The bracket *g<sup>4</sup>* is located at a sufficient distance from the lower end of the window *e* to permit the members *g<sup>2</sup> g<sup>5</sup>* to close, as shown in  
85 Fig. 1, when the window is shut. A bar *g<sup>6</sup>* is pivoted to the ears *g<sup>3</sup>* at one end and is connected at its other end to any operating mechanism, being herein shown as provided with teeth *g<sup>7</sup>*, meshing with the gear *g<sup>8</sup>*, all as  
90 will be clearly understood without further explanation by reference to my aforesaid patent.

It will be understood that the entire series of windows may be connected together and simultaneously opened in the manner shown in my patent last mentioned.  
95

When the windows are to be opened, the operator raises the rack-bar *g<sup>6</sup>*, and thereby lifts the arm *g<sup>2</sup>*, getting a strong leverage thereon from the pivot or fulcrum *g'* and at the same time exerting an outward and up-  
100



ward pushing and lifting movement on the lever  $g^5$ , the result being that the window or windows swing out to the position shown in Fig. 2.

5 It will be observed that the windows open very readily and quickly, because not only does the swinging arm  $g^2$  operate to swing the mechanism out to the left, as shown in the drawings, but the moment that it swings  
10 up on its pivot  $g'$  it moves the lever  $g^5$  out and also raises its lower end, so as to bring it toward a horizontal position, thereby giving a double leverage or accelerated upward and outward movement to the window.

15 When the windows are to be closed, the mechanism folds up into the position shown in Fig. 1.

In both open and closed position there is no mechanism projecting out over the path; but  
20 it is always close in against the window when the latter is closed.

Many changes in form and arrangement and combination of parts may be resorted to within the spirit and scope of my invention.

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

1. A device of the kind described, comprising an arm adapted to be pivoted to a fixed  
30 support, a lever adapted to be pivoted adjacent to the swinging end of a window, said lever and arm at their free ends being pivoted together, and a bar pivoted to said arm intermediate its ends, and means for moving

said bar longitudinally for opening and closing the window. 35

2. The combination, with a swinging window, of a lever and arm pivoted together and also pivotally connected at their free ends to said window and a fixed support respectively,  
40 a power shaft and gear mounted above said pivot on the fixed support, and a bar connected at one end to said arm and lever between their said free-end pivots and at its other end engaging said gear and operated  
45 thereby.

3. The combination, with a swinging window, of a lever pivoted thereto a short distance from the free end of said window and extending downwardly therefrom close to the  
50 window when the latter is closed, an S-shaped arm pivoted to the lower end of said lever and extending upwardly therefrom close to said window when closed, the lower end of said arm curving toward the window  
55 and the upper end thereof curving from the window, a fixed support pivotally connected to the upper end of said arm, and an operating-bar pivoted to said arm between the latter's two pivots. 60

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MATTHEW PRIOR.

Witnesses:

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J. ETHEL TARR.