(No Model.) 2 Sheets—Sheet 1.

B. F. DETTRA.

WINDOW.

No. 491,043. Patented Jan. 31, 1893.

Fig. 1.

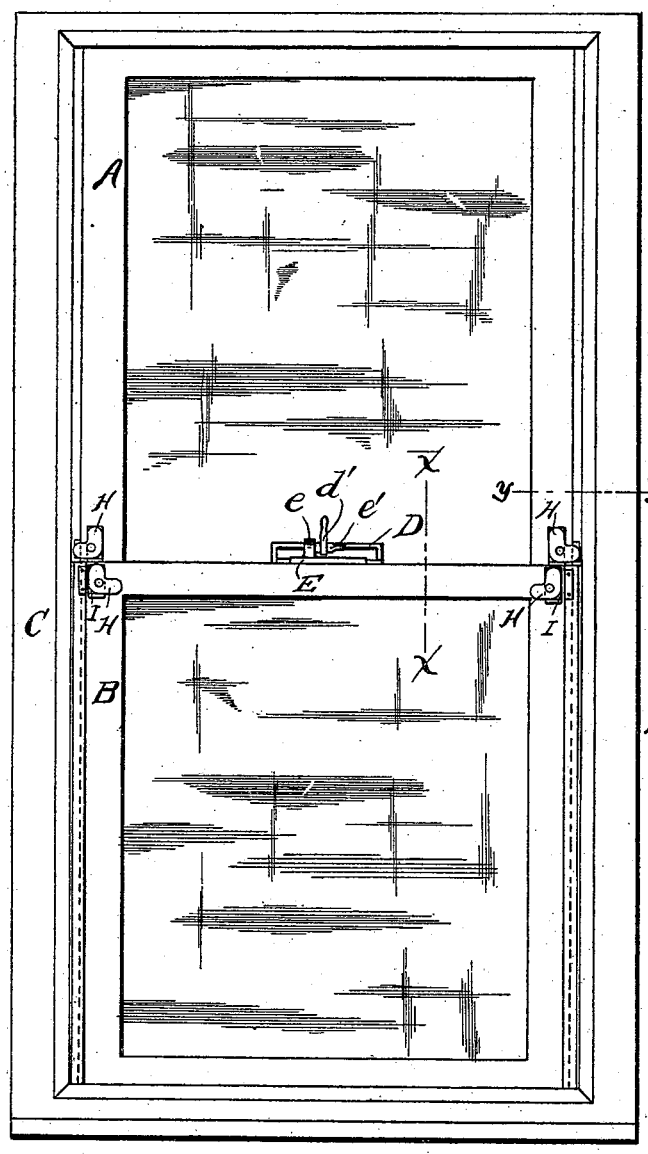
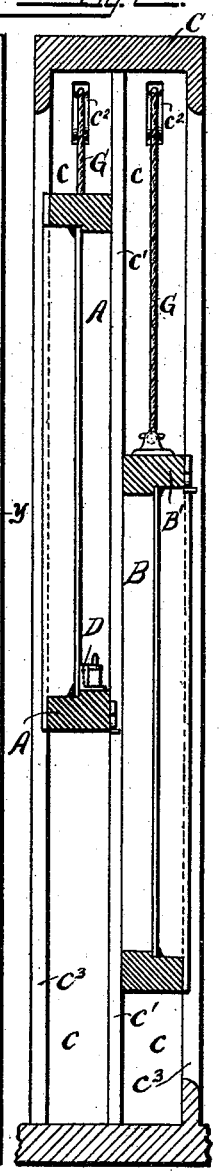


Fig. 2.



Witnesses
E. A. Kelly
David Lewis

Benjamin F. Dettra Inventor
By his Attorney W. H. Church

(No Model.) 2 Sheets—Sheet 2.

B. F. DETTRA.

WINDOW.

No. 491,043. Patented Jan. 31, 1893.

Fig. 3.

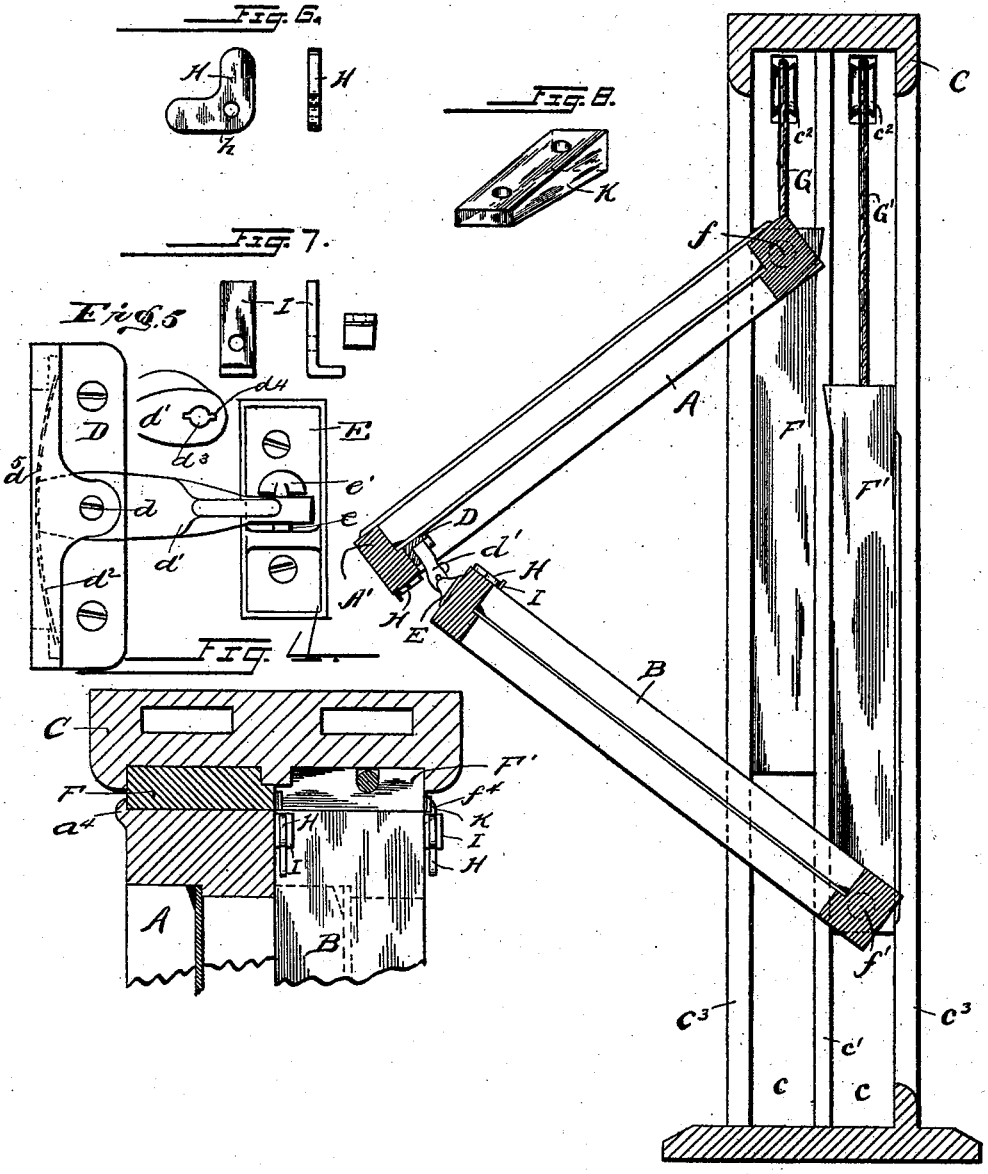


Fig. 6.

Fig. 8.

Fig. 7.

Fig. 5

Witnesses

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By his Attorney J. H. Stewart

UNITED STATES PATENT OFFICE.

BENJAMIN F. DETTRA, OF READING, ASSIGNOR TO WILLIAM W. LESHER, OF MOSSERVILLE, PENNSYLVANIA.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 491,043, dated January 31, 1893.

Application filed February 25, 1892. Serial No. 422,766. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. DETTRA, a citizen of the United States, residing at Reading, in the county of Berks, State of Pennsylvania, have invented certain Improvements in Windows, of which the following is a specification.

This invention has relation to that class of windows wherein the sashes are capable of being raised or lowered or of being tilted: and it consists in certain peculiarities in the construction, arrangement and combination of the several parts, substantially as hereinafter described and particularly pointed out in the subjoined claims.

In the accompanying drawings illustrating the invention Figure 1 is a front elevation of a window frame and sash embodying my invention. Fig. 2 is a sectional side elevation representing the sashes as sliding up and down in the usual manner. Fig. 3 is a similar elevation showing the sashes hinged together and tilted outward. Fig. 4 is an enlarged sectional view on line *y y* Fig. 1. Fig. 5 is an enlarged detail view of the combined hinge and sash lock. Figs. 6, 7, and 8 are detail views of the locking ear and bearing plates.

The window frame C is of ordinary construction being provided with the usual vertical retaining grooves *c c* formed by the central bead strip *c'* and side strips c^3; the weight cords G G' pass over pulleys c^2 which are located as usual.

The sashes A and B are in the main of ordinary construction. The portions of the side pieces or stiles which ride in the grooves *c c* however are separate strips F F' uniform in width and height with the main body of the sash and of sufficient thickness to project somewhat beyond the frame strips *c' c*^{3}. The upper sash is pivoted at *f*, in any suitable manner, to the upper end of the sash strip F, and the lower end of the lower sash B is in like manner pivoted at *f'* to the lower end of the sash strip F'. The cords G G' may be attached to the sash strips F F' in the same manner that they are attached to ordinary sashes. The pivotal connections *f f'* of the sashes with the sash strips as above described, evidently leave the meeting rails of the two sashes free to swing laterally on said connections. If it is desired therefore that the sashes shall slide up and down in the retaining grooves *c c* it is necessary that they shall be secured to the strips at their opposite ends also and I have therefore provided convenient mechanism for locking both sashes to their respective strips which I will now describe.

To the lower inside face of the upper sash and the upper inside face of the lower sash, are pivoted at either side, locking ears H which are adapted to engage the inner edges of the sash strips F F' respectively. These locking ears are L-shaped and are pivoted, at a point *h* about where their angles meet, to metal plates I which are secured to the faces of the sashes and when swung outward so as to engage the sash strips F F' they bear against plates K secured to the inner edges of said strips; these plates K are slightly tapered as shown so that when the ears ride up on them they will cause the sashes and strips to be firmly united; and when so united it is evident that they may be raised and lowered in the same manner as ordinary sashes, the strips becoming practically integral parts of their respective sashes. Inasmuch however as the line of junction cannot be perfectly tight I prefer to provide weather strips a^4 and f^4 on the inner strip and outer sash respectively, which effectually cover the junction thus insuring a close connection and at the same time presenting an ornamental appearance.

In order to jointly tilt the sashes laterally hinges are required at the meeting rails, and for this purpose I have provided a hinged device which is adapted to serve also as a sash lock. The plate D which is secured to the upper face of the rail A', has pivoted to it at *d* an arm *d'* which swings horizontally and which has a square inner end resting against a flat spring d^5 the tendency of which is to maintain the arm either in a position at right angles to the rail or parallel with it. The bracket piece E fixed to the square surface of the rail B' is provided with a horizontal bearing pin or pintle *e* having one or more wings or projections *e'* at its end. The end of the swinging arm *d'* is provided with an opening d^8 corresponding in diameter with the

bearing pin *e* but with oblong extensions d^4 adapted to permit the passage of the wings or projections *e'* at the end of said pin when the meeting rails are brought together so that the arm *d'* swings in a horizontal plane. When the arm *d'* thus engages the pin *e* and the locking ears H are in engagement with the sash strips F F' the sashes are effectually locked against either a tilting or sliding movement. If the ears H are withdrawn from their engagement with the sash strips, the sashes are free to be tilted outward and at the same time raised or lowered in the manner indicated in Fig. 3, the sash locking device then serving as a hinge, the arm *d'* turning on the pin *e* and being incapable of disengagement from it except when the rails are brought together. When the arm *d'* is not in engagement with the pin *e* and the ears H engage the strips F F' the sashes are moved past each other in the ordinary manner as has been heretofore explained.

What I claim is:—

1. The combination with the window frame, sash strips mounted therein to slide past each other, and sashes pivoted to said strips at their upper and lower ends respectively, of L-shaped locking ears pivoted to said sashes, and tapered plates, secured to said strips and adapted to be engaged by said locking ears, substantially as described and for the purposes specified.

2. The combination with a window frame, sash strips mounted therein to slide past each other, and sashes pivoted to said strips at their upper and lower ends respectively, of locking ears pivoted to said sashes, plates secured to said sash strips and designed to be engaged by said locking ears, and weather strips on the inner of said sash strips and the outer sash respectively, said weather strips serving to break the junction between said sash strips and sash when the same are brought together, substantially as described.

3. The combination with the window frame, sash strips mounted therein to slide past each other, and sashes pivoted at their upper and lower ends respectively to said strips, and hinged together at the meeting rail, of L-shaped locking ears pivoted to said sashes, and tapered plates secured to said strips and adapted to be engaged by said locking ears, substantially as described and for the purposes specified.

4. The combination with a window frame and sashes capable of sliding or tilting therein, of a combined hinge connection and sash lock consisting of a laterally swinging arm pivoted to the meeting rail of one sash and having a round opening with oblong extension, and a bearing piece fixed to the meeting rail of the other sash and having a projection adapted to enter said oblong opening when the meeting rails are together but to prevent lateral movement of said arm when the sashes are tilted, substantially as set forth.

5. The combination with a window frame, sash strips mounted therein to slide past each other, sashes pivoted to said strips at their upper and lower ends respectively, and means for locking said sashes to said strips when desired, of a laterally swinging arm pivoted to the meeting rail of one sash and having a round opening with oblong extension, and a bearing piece fixed to the meeting rail of the other sash and having a projection adapted to enter said oblong opening when the meeting rails are together but to prevent lateral movement of said arm when the sashes are tilted, substantially as set forth.

6. The combination with a window frame, and sashes capable of sliding or tilting therein, of the plate D, secured to the meeting rail of one sash, arm *d'* pivoted to said plate and having near one end an opening with an oblong extension, spring d^5 engaging one end of said arm, a bracket secured to the meeting rail of the other sash and provided with a bearing pin *e* having a wing at its end, all arranged and operating substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN F. DETTRA.

Witnesses:
ED. A. KELLY,
F. PIERCE HUMMEL.