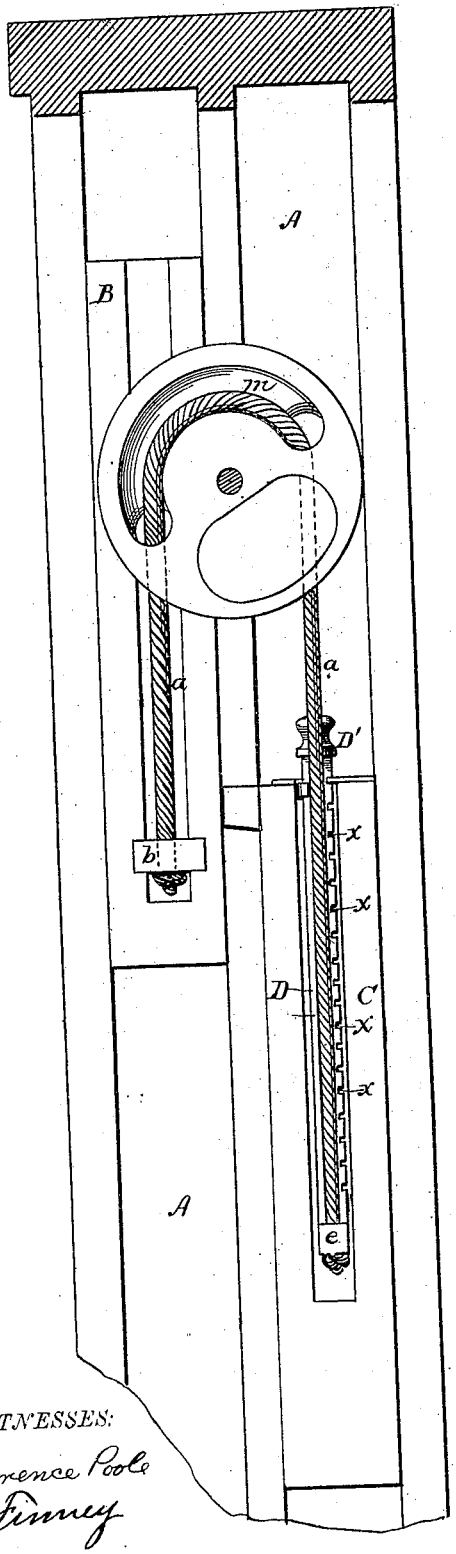
M. J. TRESCH & H. F. UREY.

Sash-Balance.

No. 205,514. Patented July 2, 1878.

Fig. 1.



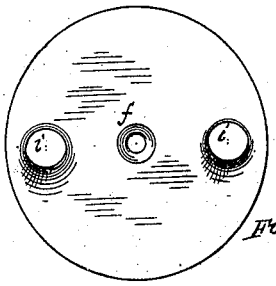


Fig. 5.

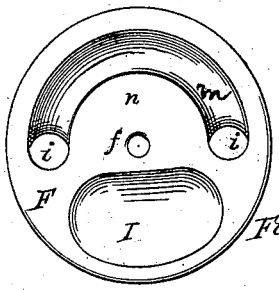
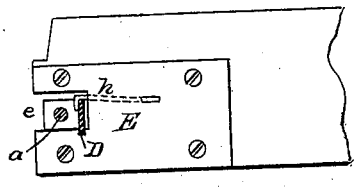


Fig. 2.

Fig. 3.

Fig. 4.



WITNESSES:

C. Clarence Poole

L. R. Finney

INVENTORS

M. J. Tresch & H. F. Urey

By C. M. Keas atty.

UNITED STATES PATENT OFFICE.

MICHAEL J. TRESCH AND HENRY F. UREY, OF EDENSBURG, PA.

IMPROVEMENT IN SASH-BALANCES.

Specification forming part of Letters Patent No. **205,514**, dated July 2, 1878; application filed March 21, 1878.

To all whom it may concern:

Be it known that we, MICHAEL J. TRESCH and HENRY F. UREY, of Edensburg, in the county of Clarion and State of Pennsylvania, have invented certain new and useful Improvements in Sash-Balances for Window-Frames; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Our invention relates to that class of sash-balances in which one sash is made to balance the other; and the nature of our invention consist in the peculiar construction of the device over which the cord passes from one sash to the other, in the manner of connecting the cord adjustably to the lower sash, and in the construction and combination of parts, as will be hereinafter more fully set forth.

Figure 1 is a side elevation of a window-frame with sash, &c., embodying our invention the side of the frame being removed to expose the edges of the sash. Fig. 2 is a rear or inside view of the cord-pulley. Fig. 3 is a transverse section of the same. Fig. 4 is a plan view of the end of the lower sash, and Fig. 5 is a front or outside view of the cord-pulley, disk, or sheath.

A represents the window frame or casing. B is the upper, and C the lower, sash. The two sashes B and C are grooved upon the edges to receive the balancing-cords *a*. Near the lower end, in each edge of the upper sash B, is inserted a metal block or plate, *b*, having a central perforation, through which the cord *a* is passed, and fastened by means of a knot or otherwise on the under side of said plate. The other end of the cord *a* is connected to the lower sash C in the following manner: In the groove in the edge of this sash is placed a metal bar, D, having a series of notches, *x x*, in its front edge, and its upper end provided with a knob or handle, D′. To the lower end of the bar D is permanently fastened a perforated lug, *e*, through which the end of the cord *a* is passed, and fastened on the under side thereof by a knot or otherwise. On the top of the sash C is fastened a slotted plate, E, through which the bar D passes, and in a recess in the sash under said plate is arranged a hooked spring, *h*, which takes hold of the rear edge of the bar D, as shown in Fig. 4. This spring acts in a twofold manner—first, as a guide for the up-and-down movement of the bar D, preventing said bar from moving outward in the slot, and, second, in acting as a lock in pressing the bar D forward, so that any one of its notches *x* will catch on the edge of the metal of the slotted plate.

The guide over which the sash-cord passes from one sash to the other is composed of a circular disk or sheath, F, made of porcelain, and formed with a central hole, *f*, for the passage of the fastening-screw, said hole being countersunk in the outer face of the disk for the head of the screw. A circular recess is made in the side of the window-frame about midway of the travel of the upper sash, of sufficient size and depth to receive the disk or sheath F and cause its outer face to be flush with the inside of the frame.

In the disk or sheath F are made two apertures, *i i*, at equal distances from the center, and diametrically opposite each other. These holes are made on an upward slant from the outer face inward, and they form the termini of a semicircular recess or groove, *m*, made on the inner side at the top of the disk or sheath, having a semicircular projection, *n*, on the inner side of the disk, as shown in Figs. 1 and 2. The sash-cord passes upward through one of the holes *i*, over the projection *n*, and downward through the other hole *i*, as seen in Fig. 1. The disk or sheath F is fastened in such a manner that the two openings *i i* will be on direct lines with the grooves in the sashes.

The disk or sheath, being made of porcelain, can be manufactured cheaply and economically, while it will not wear or rust and rot the cord, as is the case with the metal devices now in use. On the under side one or more recesses, I, may be made to make it still more light, if desired.

When the bars D D are pressed down in the position shown in Fig. 1, the cords *a* will be just long enough to close both sashes and balance the same, so that raising the one will lower the other sash. If desired to lower the

upper sash without raising the lower one, the bars D D may be pulled upward more or less, which lengthens the cords, allowing the upper sash to drop down as far as desired, while the lower sash may remain closed and fastened by the bolt on upper edge of said sash. The two sashes are, however, balanced in whatever position the cords and bars may be placed.

The end of the cord can be secured to the sash B by a simple screw or nail, if cheapness is desired; but we prefer to use the metal block or plate *b*, as the cord can be more readily attached and detached, and does not disfigure and endanger the sash.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The porcelain disk or sheath F, formed with the central hole *f*, side holes *i i*, circular groove *m*, and projection *n*, substantially as and for the purpose set forth.

2. The combination of balance-sash cord *a*, fixed permanently to the upper sash B and adjustably to the lower sash C, with the porcelain disk or sheath F, constructed as described, as and for the purpose set forth.

3. The combination of the grooved sash C, the cord *a*, and the sliding bar D, provided with the lug *e* at or near its lower end, and a series of notches, *x x*, in its edge, with the plate E, as and for the purpose herein set forth.

4. The hooked spring *h*, in combination with the notched bar D and plate E, substantially as set forth, and for the purpose named.

MICHAEL J. TRESCH.
HENRY F. UREY.

Witnesses:
W. C. B. DAVIS,
M. M. WILSON.