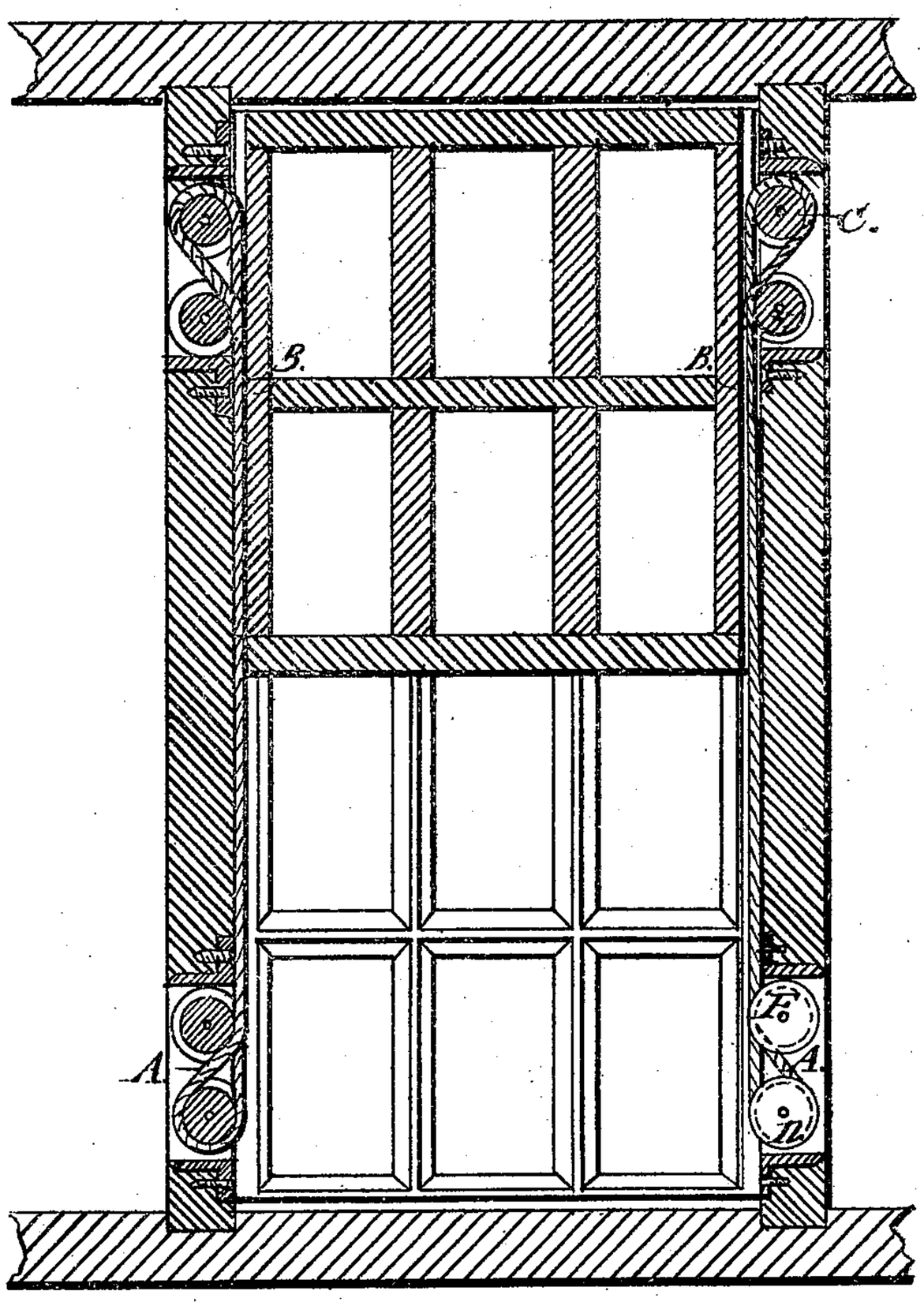
R. A. Warner,

Window Sash.

No. 92,407. Patented Jul. 6. 1869.



Witnesses:
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United States Patent Office.

R. A. WARNER, OF COLUMBUS, GEORGIA.

Letters Patent No. 92,407, *dated July* 6, 1869.

IMPROVED WINDOW-SASH BALANCE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, R. A. WARNER, of Columbus, in the county of Muscogee, and State of Georgia, have invented a new and useful Improvement in Hanging Window-Sash; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to improvements in hanging window-sash.

It consists in connecting an endless cord to the sash, and passing it over pulleys at the top and bottom of the window-frame, the cords being arranged upon the side of the frame next the sash.

I am aware that cords and pulleys have been employed for operating window-sash, but such cords pass from the sash over the pulleys, and within the casing, and, therefore, when broken, cannot be replaced without removing a portion of the casing.

My invention is designed to obviate this difficulty, as the cords are so arranged, that when broken or worn out, they can be easily replaced without removing any portion of the casing.

The drawing represents a sectional elevation of a window-frame, showing the application of my improvement.

A represents endless cords, attached to the sash, as at B, and passed over pulleys C and D, at the top and bottom of the frame, arranged in suitable recesses.

E represents guide-pulleys, over which the ropes pass.

Room is made for the cords by making grooves in the face of the window-frame and the sash.

Friction may be applied to the rollers C or D, in any manner, to sustain the sash in an elevated position.

This arrangement dispenses with the cost of providing the boxes for the weights to work in, and affords ample facility for adjusting the cords or replacing them when worn out.

Having thus described my invention,

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

The combination, with the sash and frame, of the endless cords A, pulleys C D, and the guide-pulleys E, so arranged that the cord passes between the sash and the casing, as herein shown and described.

R. A. WARNER.

Witnesses:

CLIFF B. GRIMES,

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