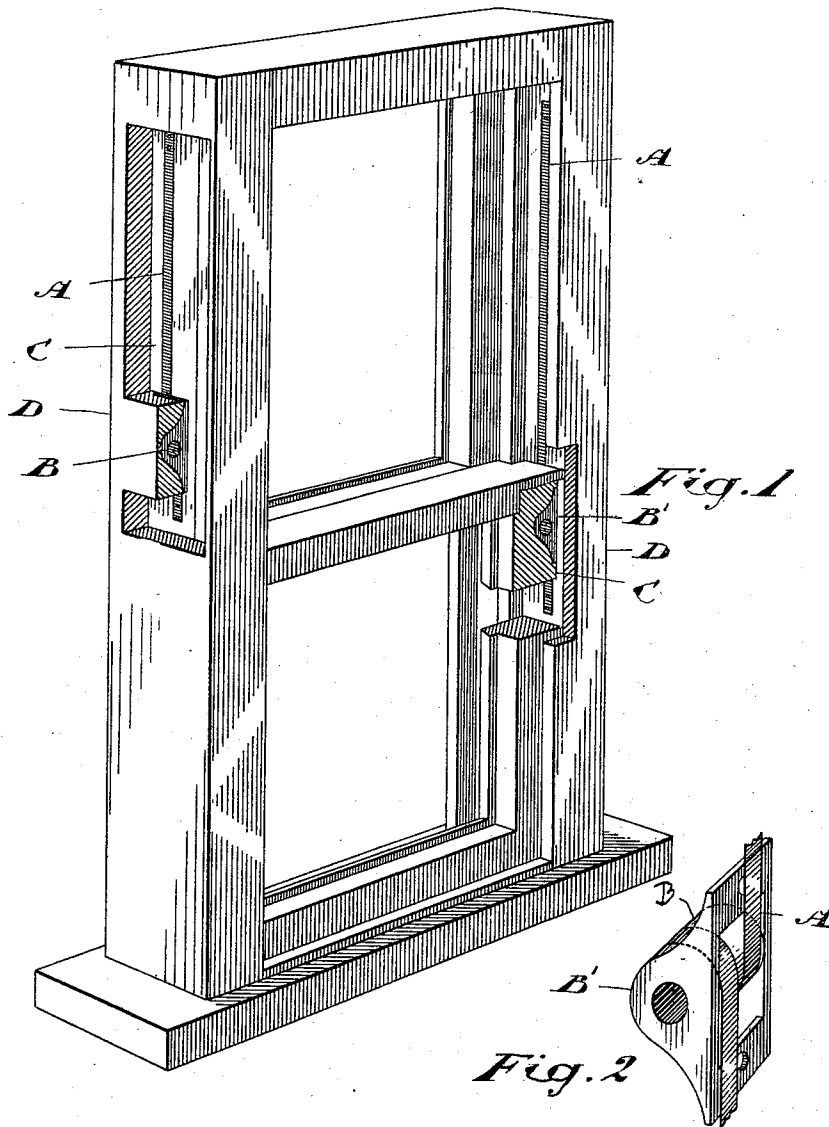


(No Model.)

J. J. O'CONNOR.
SASH BALANCE.

No. 478,352.

Patented July 5, 1892.



Witnesses

L. Edw. Maybee

W. G. McMullan

Inventor

Jas. J. O'Connor

by Donald G. Ridout & Co.
attys.

UNITED STATES PATENT OFFICE.

JAMES J. O'CONNOR, OF OAKVILLE, CANADA, ASSIGNOR OF ONE-HALF TO
JOHN JOSEPH McDERMOTT, OF SAME PLACE.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 478,352, dated July 5, 1892.

Application filed March 31, 1892. Serial No. 427,232. (No model.) Patented in Canada April 26, 1892, No. 38,706.

To all whom it may concern:

Be it known that I, JAMES JOSEPH O'CONNOR, of the town of Oakville, in the county of Halton, in the Province of Ontario, Canada, have invented a certain new and Improved Sash-Balance, (for which I have obtained Letters Patent of the Dominion of Canada, dated the 26th day of April, 1892, and numbered 38,706,) of which the following is a specification.

The object of the invention is to provide a simple device by which a window-sash or vertically-sliding door shall remain balanced or supported at any desired altitude without either balance, weight, or spring; and it consists, essentially, of a flexible band wound around or partially around a stub fixed to the sash or sliding door, the ends of the flexible band being fixed to the frame in which the sash or door slides, substantially as herein-after more particularly explained.

Figure 1 is a view of a window-frame having its sashes supported by my improved balance, a portion of the wood-work being broken away to expose the location of the device. Fig. 2 is an enlarged perspective detail of the flexible band wound around the stub.

By the adoption of my invention a device is secured by which the heaviest kind of sash or vertical-sliding door may be supported so as to be adjusted vertically with the slightest possible exertion, and the said effect desired is secured without the balance-weight so commonly used or any form of spring, which is so liable to get out of order.

A represents a flexible band, made of light ribbon-steel or any other flexible material found suitable for the purpose.

B' is a casting having formed thereon a fixed cylindrical portion or stub B, preferably cast thereon and sunk into a recess made in the sash C or in the frame D, as shown. When the casting B' is sunk in the sash C, the ends of the band A, which is wrapped spirally around the stub B, are connected, respectively, to the top and bottom of the frame D, and when the casting B' is in the frame D the ends of the band A, which is wrapped around the said stub, are connected to the top and bottom of the sash C, as shown. In this way the band A supports the sash, which sash, however, may be moved freely up and down, the friction of the band upon the fixed stub B being sufficient to support the sash. As already indicated, it makes no difference whether the casting with its stub is fixed to the sash or to the frame.

What I claim as my invention is—

The combination of a sash and its frame with a casting B, attached to said sash and having a fixed stub B, and the flat band A, wound spirally around said stub and having its opposite ends attached to the frame, substantially as described.

Toronto, February 25, 1892.

JAMES J. O'CONNOR.

In presence of—

A. M. NEFF,
I. EDW. MAYBEE.