E. C. BYAM.
Sash-Holder.

No. 226,488. Patented April 13, 1880.

Fig. 3.

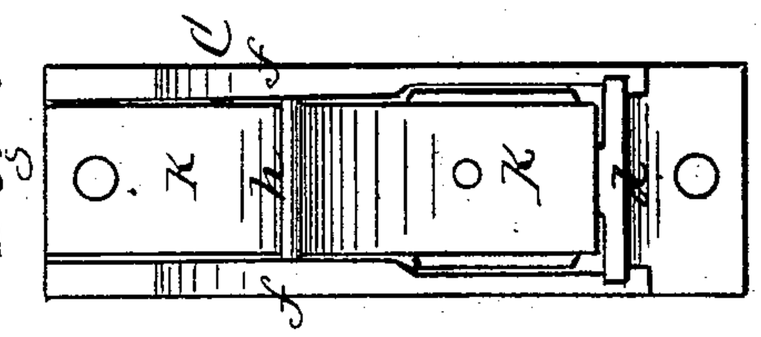


Fig. 5.

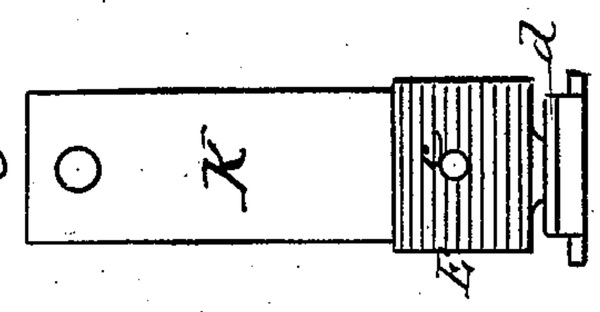


Fig. 2.

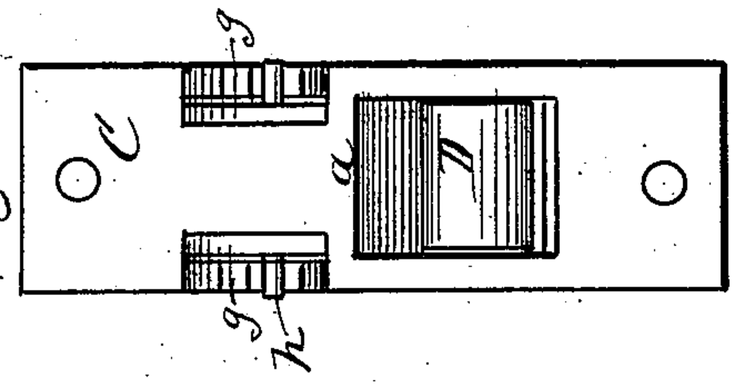


Fig. 4.

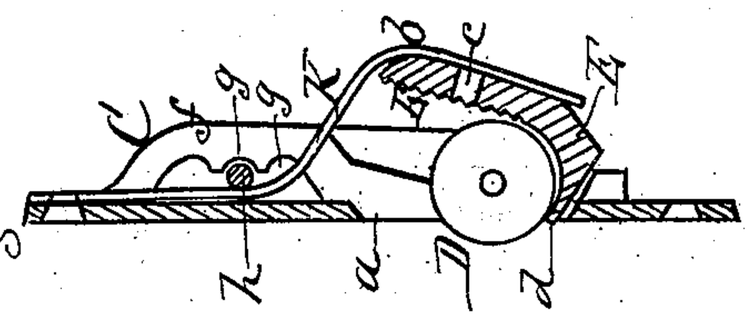
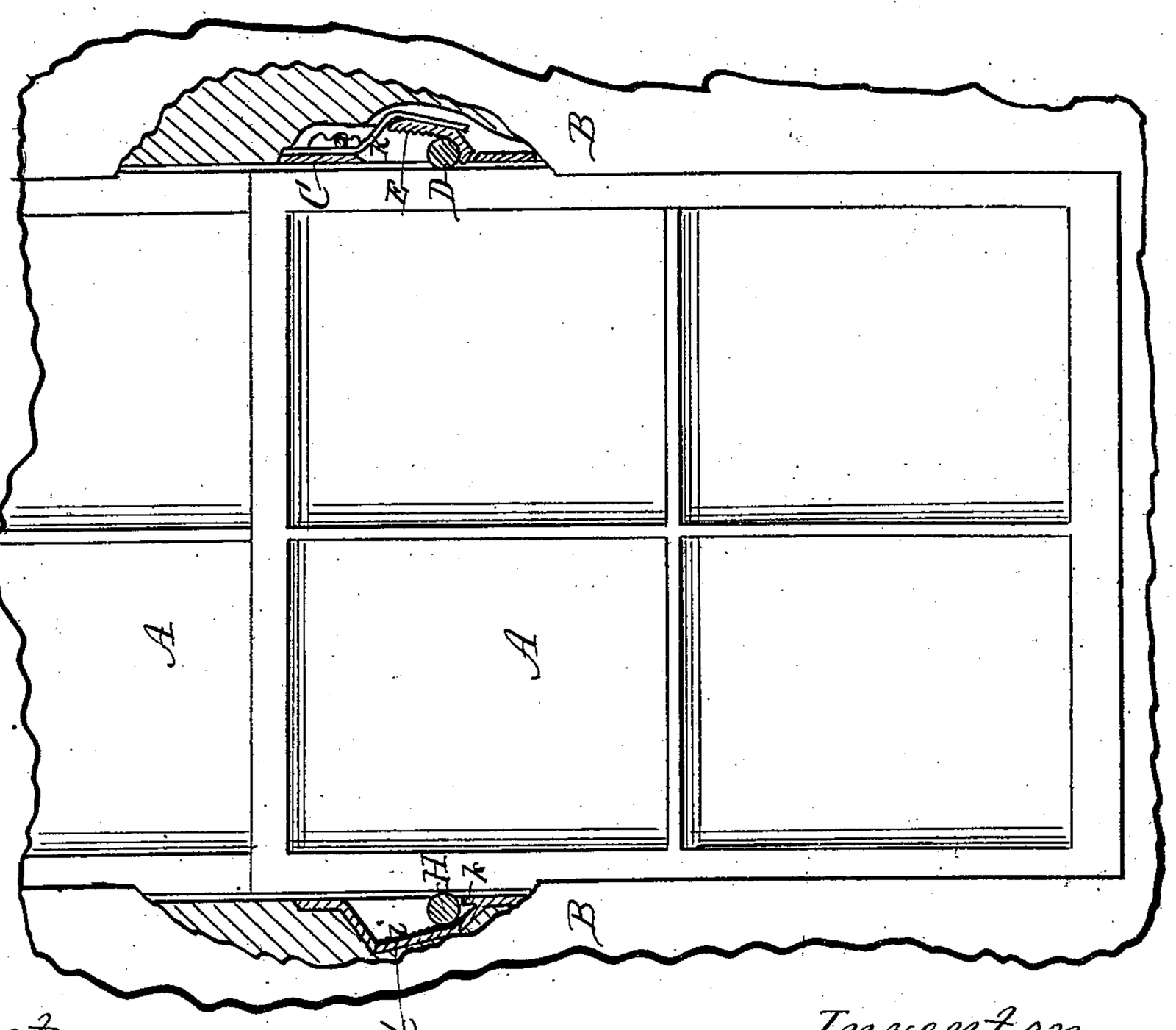


Fig. 1.



Attest.
James Naylor Jr
Jacob Spuhn

Inventor.
Eber C. Byam.
per R. H. Bogard.
Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EBER C. BYAM, OF ROCHESTER, NEW YORK.

SASH-HOLDER.

SPECIFICATION forming part of Letters Patent No. 226,488, dated April 13, 1880.

Application filed January 29, 1880.

To all whom it may concern:

Be it known that I, EBER C. BYAM, a citizen of the United States, residing in the city of Rochester, county of Monroe, and State of New York, have invented a certain new and useful Improvement in Sash-Balances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a front view of a window showing my improvement applied thereto. Figs. 2 and 3 are front and rear views, respectively, of the roller attachment. Fig. 4 is a longitudinal vertical section of the same. Fig. 5 is a flat view of the spring and bearing-block attached thereto.

My improvement relates to side attachments to the sashes of windows for the purpose of balancing and holding the same at any desired height, thereby obviating the use of the expensive weights ordinarily employed.

The invention consists of a roller and spring attachment of peculiar construction located in the groove between the edge of the sash and jamb, as hereinafter more fully described and claimed.

A A represent the upper and lower sashes of a window, and B the jamb or casing.

My improvement is as follows: C is the case or frame of the roller attachment, which is set into a mortise or socket cut in the jamb, and is provided with a wooden or other roller, D, that runs up and down in an inclined direction, bearing against the edge of the sash when in the lowest position and holding the sash elevated, but moving back and releasing the sash when in the highest position. The front side of the roller protrudes through an opening, *a*, in the case to bear upon the sash, and it is provided with short journals, which rest and move inside the case, so that the roller cannot drop out at any time when the sash is taken out.

K is a flat steel or other spring, which lies flat against the back of the roller-case at the top, but when half-way down its length is bent inward and backward, and then is again turned downward and forward, so as to make a bend or loop, *b*, substantially of the form shown in Fig. 4. To the lower end of this spring is attached on the front side a bearing-plate, E, of cast-iron, the parts being attached by a rivet, *c*, or by other means.

The front face of the bearing-plate, on which the roller rests, is serrated or roughened to produce the proper friction on the roller. The lower end, *d*, of the bearing-plate is turned forward and upward, and strikes through the bottom of the opening *a* of the roller-case, and forms the stop or rest for the roller, so that the roller rests in and is supported by the spring and its bearing-plate, and moves forward and backward with it and is controlled by it. The spring is attached to the roller-case at the top by a screw, which passes through both and fastens them to the wood. The roller-case or frame has on the back side two ribs or flanges, *f f*, which extend longitudinally, and openings are formed within them at the top, in which are notches or sockets *g g*, Fig. 4. When the spring is in place a pin, *h*, is run crosswise behind the spring and rests in any pair of the notches *g g*, thereby holding the spring forward against the plate of the case. This stiffens and holds the spring. By setting the pin higher or lower in the notches the spring will be correspondingly more or less elastic. This is necessary to adapt the roller to bear with greater or less pressure against the edge of the sash, thereby adapting the same to heavy or light sashes, and also to the degree of looseness which exists between the sash and jamb.

This attachment differs from others in making the spring form the bearing for the roller and resting the roller loosely therein, so that while the roller is carried forward and backward with the spring it still has a free vertical movement which is independent of the spring, so that when the sash is raised the roller will be raised with it, and when the sash is allowed to fall again the roller will also fall and sustain the sash at any desired height. At the same time the bottom of the bearing-plate forms a stop to the roller, so that it can go only just so low.

Another advantage consists in the use of the separate bearing-plate E, attached to the lower end of the spring, whereby the lower

end of the spring is stiffened and strengthened and a socket and stop is formed for the roller to rest in.

On the opposite side of the sash from the roller attachment above described is another roller-case, G, and roller H, the case being formed with an inclined seat, *i*, and a stop, *k*, at its bottom, the whole so arranged that when the sash is raised the roller will be raised, and when it is allowed to fall again the roller will fall and rest upon the stop *k*. This roller attachment acts in conjunction with that on the opposite side, as in lowering the window it prevents the sash from being forced against the jamb and creating much friction, the rollers on both sides taking all the contact of the sash. It also serves to take up the slack or looseness in loosely-fitting sash; and, furthermore, it balances the clamping action on the sash and prevents the tilting or inclining of the sash which would occur if the roller-hold were on one side alone.

By the arrangement before described the sash can be raised without trouble, and when released will be held at any desired height, and when slight pressure is applied downward the sash can be closed with ease and without operating any side fixture. It is applicable to either the upper or lower sash.

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

1. In a sash-balance, the combination, with the case C, provided with the roller D, of the spring K, formed with a socket at its bottom to receive and hold the roller, the roller resting loosely in the spring and the spring forming the support for the roller, as herein shown and described.

2. In a sash-balance, the combination, with the spring K, of the bearing-plate E, attached to its lower end, forming a support for the roller, said bearing-plate being provided with a stop, *d*, at the bottom, as shown and described, and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EBER C. BYAM.

Witnesses:
R. F. OSGOOD,
A. I. HESLETT.