B. F. REYNOLDS & C. D. WILEY.

Sash-Holder.

No. 211,049. Patented Dec. 17, 1878.

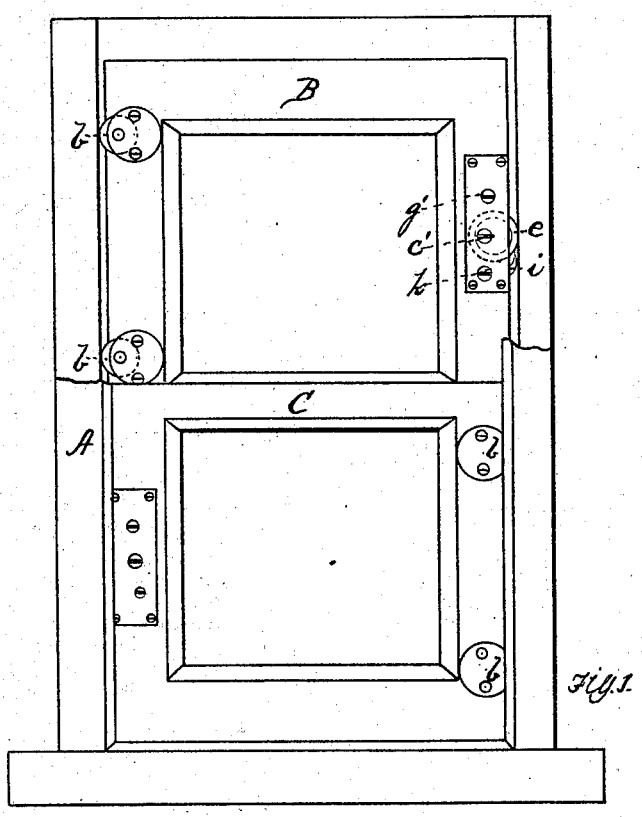

Fig. 1.

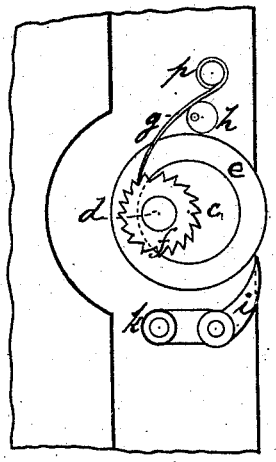

Fig. 2.

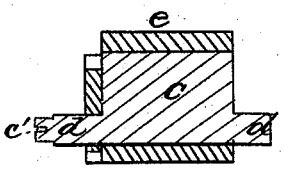

Fig. 3.

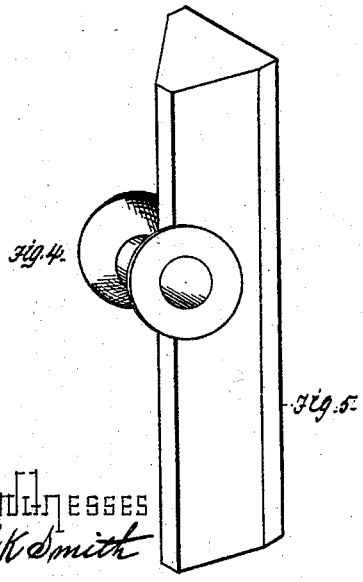

Fig. 4.

Fig. 5.

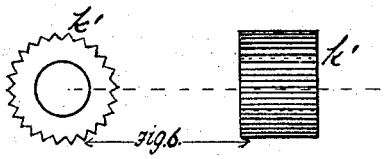

Fig. 6.

Witnesses

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UNITED STATES PATENT OFFICE.

BENJAMIN F. REYNOLDS AND CHARLES D. WILEY, OF VERONA, PA.

IMPROVEMENT IN SASH-HOLDERS.

Specification forming part of Letters Patent No. **211,049**, dated December 17, 1878; application filed November 12, 1878.

To all whom it may concern:

Be it known that we, BENJAMIN F. REYNOLDS and CHARLES D. WILEY, of Verona, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Friction-Roller Balances for Sashes, &c., and Locks therefor; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is an elevation of a window-frame having our invention applied, the upper sash being partly in section to show the operation of the devices. Fig. 2 is an enlarged detached view of the devices, the plate having been removed. Fig. 3 is a transverse section of the roller and its shaft. Figs. 4 and 5 illustrate a roller and a plate, which may be used with heavy sashes, if desired. Fig. 6 represents a cutter-roll, which may be used in fitting the frame, as will hereinafter appear.

Like letters refer to like parts wherever they occur.

Our invention relates to the construction and operation of friction-rolls for window-sashes, &c., whereby the usual weights, cords, and like devices may be dispensed with, and neat and effective devices, which sustain the sash at any desired point, substituted; and consists, mainly, in a friction-roll whose shaft has journals eccentrically placed, whereby the shaft may be adjusted to or from the sash-frame to increase or decrease the frictional contact of the roller, and also in details of construction, which will be hereinafter more specifically set forth.

We will now proceed to describe our invention, so that others skilled in the art to which it appertains may apply the same.

In the drawing, A indicates a window-frame, and B C the sashes arranged therein. Each of these sashes B C should, to obtain the best results, be provided with one or more ordinary friction-rollers, *b*, to coact with the cam friction-roll when the sash is moved.

As any suitable friction-rollers *b* may be used no specific description thereof is necessary. On or let into the sash at the opposite side from the friction-rollers is our improved balance and lock.

It consists of a shaft, *c*, with journals *d* arranged eccentrically thereon, or said shaft *c* eccentrically journaled, whereby the center of motion of a loose roller or annulus may be changed to bring it nearer to or farther from the frame, accordingly as more or less friction is required to sustain the sash.

e indicates a roller or annulus loose or movable on its shaft *c*, so as to rotate when the sash is raised or lowered. Arranged on the shaft or journal of the roll or annulus *e* is a ratchet, *f*, whose dog *g* is secured to the sash or plate *p* and controlled by a cam, *h*, or equivalent, so that, first, the dog and ratchet shall hold the shaft in any position it is placed; and, secondly, when the cam *h* is turned to lift the dog or spring *g* the shaft may be turned in either direction to reduce or increase the friction between the roller and frame.

In order to control and adjust the shaft *c* and dog *g*, a notch, as at *c' g'*, may be made in the ends of the shafts, or a crank or any other suitable means may be employed.

With the balance it is also desirable that a lock should be employed, or some mechanism used which will prevent the further unauthorized opening of the window when set at a given point. For this purpose we provide a wedge, *i*, or like means, and connect the same by a link with a shaft, *k*, the whole so constructed that the wedge can be projected between the cam-roller or annulus *e* and frame when it is desirable to lock or fix the position of the sash, and can be withdrawn when the position of the sash is to be changed.

In some instances it will be necessary to provide a larger friction-surface and to protect the frame, as in the case of heavy sashes; and in such cases we secure a V-shaped or convex plate to the frame, and groove or concave the roller *e*, as illustrated by Figs. 4 and 5, though the reverse construction—viz., a convex roller and concave frame-plate—may be employed, if preferred.

It will frequently happen in fitting the balance that the frame will be found to be uneven, so that the cam-roller, though exerting sufficient pressure at one point to support the sash, will permit the sash to slip at other points; and as it is necessary that the frame A should be true, we provide therefor, in fitting

the cam-roller balance to the sash, by substituting for the cam and friction rollers *b b e* a cutter-roller, *k'*, which, being first inserted in the sash, and the sash raised and lowered, will chip and remove the unequal surface, leaving a uniform surface for the traverse of the cam-roll *e*.

The devices thus described being applied to a sash in substantially the manner shown and specified, the cam-shaft *c* is turned with its eccentricity toward the frame until the annulus *e* presses against the frame sufficiently hard to support the sash, and the shaft will be retained in such position by the ratchet and dog.

When it is desirable to reduce the frictional contact between the cam-roller *e* and frame the cam *h* is turned to lift the dog or spring *g* off the ratchet, so as to permit of the reversal of the eccentrically-journaled shaft *c*.

The advantages of our invention are that the devices are inexpensive, neat, and efficient, will overcome all tendency of the sashes to rattle, and are adjustable, so as to compensate for wear.

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

1. In a sash-holder, the combination of the shaft eccentrically journaled and the loose roll or annulus, substantially as and for the purpose specified.

2. The shaft provided with eccentric journals and the loose roll or annulus, in combination with the dog and ratchet, substantially as and for the purpose specified.

3. The combination, with the loose roll having an adjustable shaft provided with eccentric journals, of a locking-wedge having a link interposed between the wedge and its pivotal points, substantially as and for the purpose specified.

In testimony whereof we, the said BENJAMIN F. REYNOLDS and CHARLES D. WILEY, have hereunto set our hands.

BENJAMIN F. REYNOLDS.
CHARLES D. WILEY.

Witnesses:
R. H. WHITTLESEY,
F. W. RITTER, Jr.