R. B. HUGUNIN.

Sash-Holder.

No. 196,804. **Patented Nov. 6, 1877.**

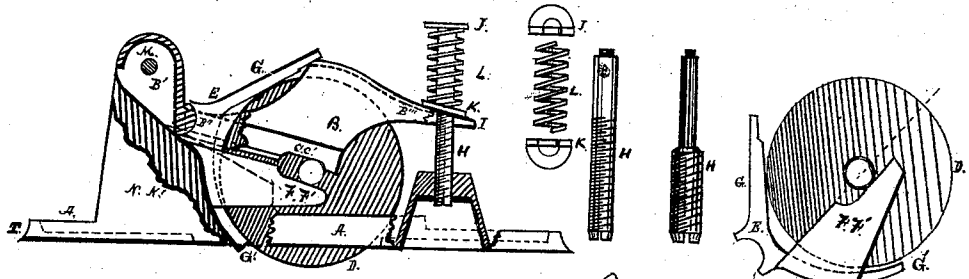


Fig. 1.

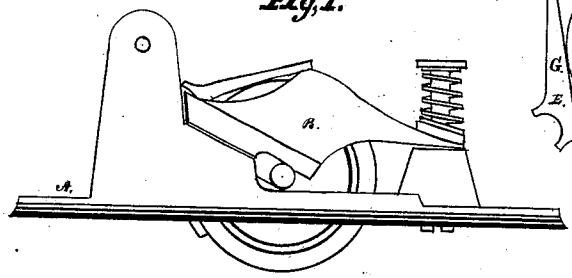


Fig. 2.

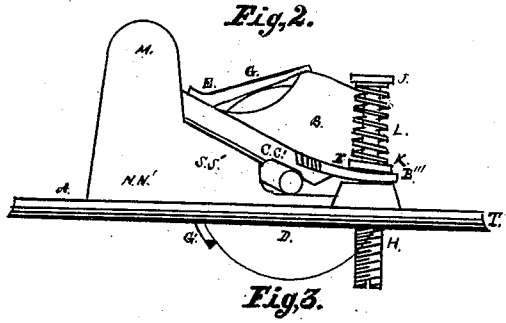


Fig. 3.

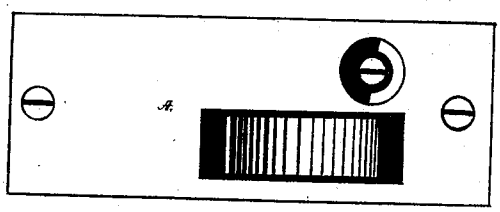
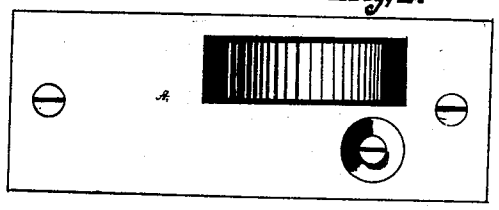


Fig. 4.



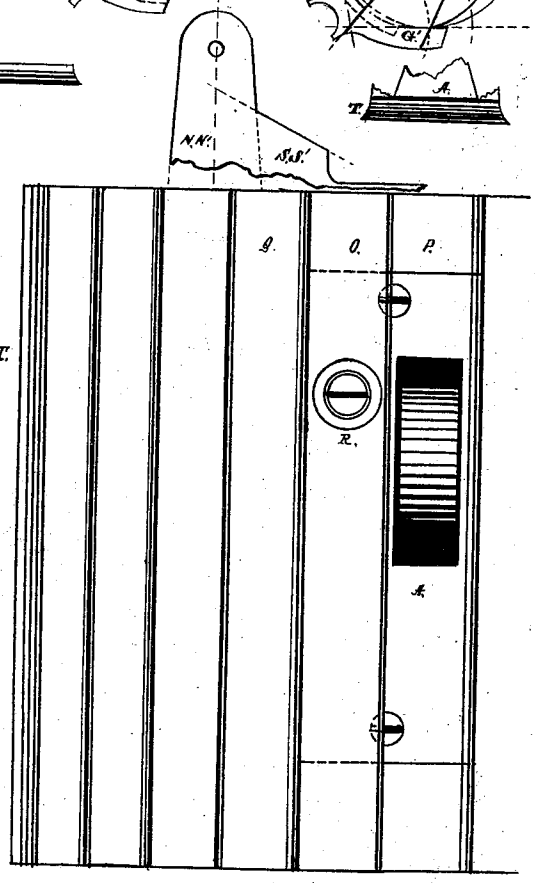


Fig. 5.

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IMPROVEMENT IN SASH-HOLDERS.

Specification forming part of Letters Patent No. **196,804**, dated November 6, 1877; application filed October 18, 1877.

To all whom it may concern:

Be it known that I, ROBT. B. HUGUNIN, of the city, county, and State of New York, have invented certain new and useful Improvements in Sash-Holders or Sash-Balances, of which the following is a specification:

First. This invention consists in the application and use, in a sash-holder having a roller, of the axle-holding projections F F′; the object being to furnish instant support to the roller through its axles while holding the sash, after raising the same, preventing sagging, and causing the weight of the sash, through the incline of F F′, to compress the roller against the rear brake G, enabling F, F′, and G to resist the turning of the roller while holding and lowering the sash. (See illustration in Fig. 1.)

Second. In combining with F, F′, and G the front projection G′; the object being additional support to the roller-surface while holding the sash, the bearings G G′ and F F′ being arranged with reference to each so as to furnish constant bearings in their holding work until the roller be so reduced in diameter as to be worn out. (See side illustration of same in Fig. 1.)

Third. The arrangement, combination, and use of a roller suspended upon its holding or clamping bearing B″, between the pin M and face of the plate A, so that the weight of the sash, held by friction from the roller, will produce a forward throw, or mechanical cam-holding action on the part of the clamped roller between the hinge-pin M and sash, against the sash, with the pin M, as the main resisting or pivotal point; the object being to obtain a positive or mechanical sash-holding power through the weight of the sash, regulated to the weight of the sash by an adjusting-screw. (See Fig. 1.)

Fourth. In combining with an adjusting-screw, H, used for sash-holders, the coil-spring L, arranged upon the neck of the screw between the loose and secured washers J and K; the object being to keep the arm B and roller D steadily pressing against the sash, the extent of the pressure being limited by more or less drawing of the screw H toward the sash in the adjustment, &c. (See Fig. 1.)

Fifth. The arrangement and combination: In a sash-holder using a roller and arm, B, the lug-extensions S S′ tend to steady and support the arm and roller, and to prevent the latter from squeaking or whistling in lowering the sash over its surface, from vibration on its bearings. (See Fig. 1, detailed illustration.)

Sixth. In combination with a sash-holder using a roller and roller-arm, B, the beveled bearings T, extending round the rim of the plate A; the object being to obtain a close fit in mortising the plate and working parts into the jamb of the window. (See illustration, Fig. 1.)

Figure 1 is an elevation plan with lug and plate broken away to show the features and application of my invention, to wit: The axle-holding projections F F′, brake G, rest projection S′, in combination therewith, the arrangement of the roller and its bearings to create a mechanical holding action between the hinge-pin M and sash against the sash, the coiled spring L arranged upon the neck of the adjusting-screw H between washers J and K; also, an illustration of the efficiency of the bearings F F′ and G G′ until the roller be completely reduced in diameter and worn out; also, illustration of the compression action of the roller under the weight of the sash by incline of bearings F F′ against the brake G, and an illustration of the lug-extension S and beveled edges T extending round the plate A.

Fig. 2 is an elevation plan of my improved sash-holder or sash-balance.

Fig. 3 is an elevation plan embracing features of my invention adapted for car-windows, where the screw-adjustment, from the sash working upward within an inclosed casing, takes place from the side, through the sash-stop, (illustrated in Fig. 5,) the slot-extension end B‴ being then a projection from the side of the arm B.

Fig. 4 is a plan view of sash-holders, right and left, for car-windows, embracing my invention, showing the location of the roller and adjusting-screw on the sides of the plate instead of the center, as preferred for house-windows.

Fig. 5 is a section of the left-hand jamb of a car-window, showing the sash and blind channels and the stop between them, through

which the adjusting-screw H is reached, the hollow cavity for the screw H in the stop being closed by a capped screw, R.

A is a face-plate, having a cavity for the adjusting-screw H, and lugs N N′ and lug-extensions S S′. B is the roller-arm, limited in its working by an adjusting-screw. B′ is a rear or neck projection of the roller-arm B. B″ is a balance-clamp bearing on the neck of arm B. B‴ is an upper or slot extension of arm B, through and against which the screw H works in regulating the pressure to the weight of the sash to be held for car-windows. (See Fig. 3.) C C′ are inclined axle-bearings on the arm while raising the sash. A slight rocking movement of clamp E in holding throws the roller-axles from these bearings. D is a metal-bodied roller, covered with a semi-elastic rubber and fiber compound, supported upon its inner surface as a belt, with several thicknesses of thick or muslin cloth wound straight, not bias. E is the clamp, having axle-bearings F F′, brake G, and a bearing, G′.

F F′ are axle-holding projections, situated under and forward of the axle-bearings C C′ on the arm B, and forming with them a sort of slot for the roller-axles to work in. The functions of F F′ are to hold the roller by its axles and to act as fulcrum-rests, in connection with the brake G, to resist the turning of the roller under the weight of the sash. Their incline enables the weight of the sash to force the roller directly against the brake G, effectually preventing it from turning while holding or lowering the sash. G is a tangent brake projection, and, in connection with axle-bearings F F′, to hold the roller from sagging with the sash, and to prevent it from turning while holding or lowering the same. G′ is the front-roller-surface rest projection, used in connection with F, F′, and G to give more solidity to the roller, and to prevent it from springing under the weight of the sash, and the latter from sagging therefrom. F F′ and G G′ are arranged, as shown in one of the illustrations in Fig. 1, to be efficient in their work until the roller be so reduced in diameter as to be worn out.

H is an adjusting-screw used, in connection with washers J and K and the coiled spring L, to regulate the pressure of the roller upon the sash, according to the weight of the sash to be held. I is a slot on arm B for the adjusting-screw H to work through. J is a washer secured on the rear end of the neck of the screw H for confining spring L. K is a washer playing loosely upon the neck of the screw H as a bearing to keep the lower end of the spring L out of the slot I. L is a light coiled spring working upon the neck of the screw H. The functions of this spring are to keep the arm B with its confined roller pressing against the sash, according to the weight of the sash. This pressure is regulated by the back and forward movement of the screw, of which it forms an important part in this connection. M is a hinge-pin for hinging the arm B to the lugs N N′ of the plate A. In this mechanism the pin does most of the sash-holding work, directly. N N′ are lugs running back from each side of the plate A, for securing the arm B. O is a stop between the sash and blind channels. (See Fig. 5.) P is a sash-channel car-window. Q is a blind-channel in a car-window. R is a hollow-capped screw, used to cover and protect the adjusting-screw, Fig. 5. S is an extension of lugs N N′ for the purpose of steadying the roller D, through arm B, projections F F′, &c. This extension prevents the squeaking of the roller in lowering the sash. T is a beveled edge extending round plate A, enabling a better fit in mortising the plate and the attached working parts into the jamb of the window.

The mechanical holding power introduced in this mechanism in its various degrees is limited only by the stiffness of the window-jambs and the strength of the metal. It is readily controlled to the weight of light and heavy sash in the same balance by the screw H, after the sashes and balances have been finally secured in their places.

If, after years of use, or from shrinkage of the wood-work, more holding power be required, it is instantly obtainable by further drawing the screws H, without removing the sashes or balances. I obtain all the holding power of a direct-acting cam or knuckle-joint with the use of the roller in raising the sash, and the employment of its entire circumference as a wearing-surface. Without the use of the adjusting-screw H, or its equivalent, this power could not be controlled, and hence made available for this purpose. By changing the position of the bearing B″ on the arm B this power is readily modified so as to require a spring-pressure, in connection, to hold the sash. I use both the direct and spring pressure—one requiring parallel-edged sashes and stiffened jambs, and the other, the slight spring, renders this unnecessary. The adjusting-spring with the screw renders spring-pressure efficient for all medium windows.

What I claim as my invention is—

1. The combination of the axle-holding projections F F′ upon clamp E with brake G, substantially as and for the purposes specified.

2. In combination with projections F F′ and brake G, the rest G′, situated underneath and between projections F F′, substantially as and for the purposes specified.

3. The arrangement of the plate A and arm B, having a rear-extended hinged neck, B′, dropping perpendicularly to the bearing B″, with roller suspended upon the bearing B″, between the hinge-pin M and the face of the plate A, the weight of the sash carrying the same downward and outward onto the sash, the projection of the roller being limited by the

adjusting-screw H to the weight of the sash to be held, substantially as and for the purposes specified.

4. The arrangement of the spring L between the washers J and K on the neck of the screw H, adjusting the arm B and roller to the sash, substantially as and for the purposes specified.

5. The lug-extensions S S′, for steadying the roller through the clamp E, and projections F F′, substantially as and for the purposes specified.

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Witnesses:
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