(No Model.) 2 Sheets—Sheet 1.

F. W. SMITH, Jr. & S. S. WILLIAMSON.

SASH BALANCE.

No. 301,289. Patented July 1, 1884.

Fig. 1.

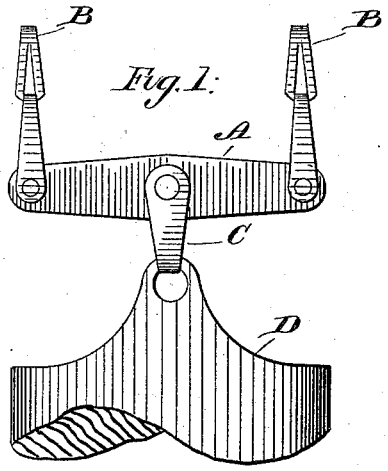


Fig. 2.

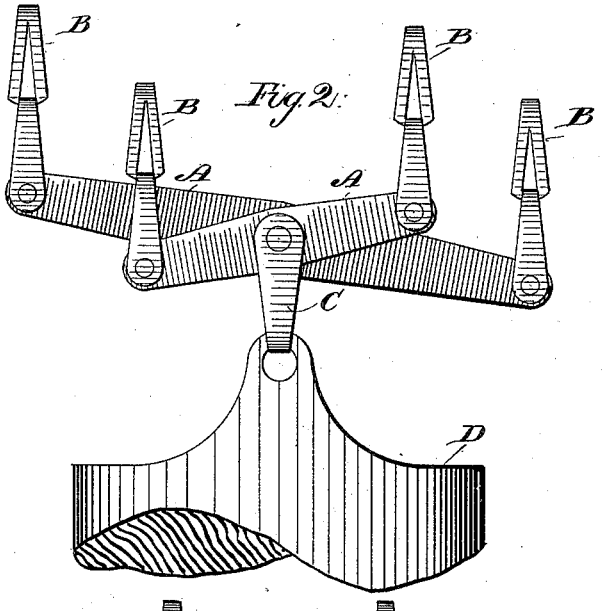
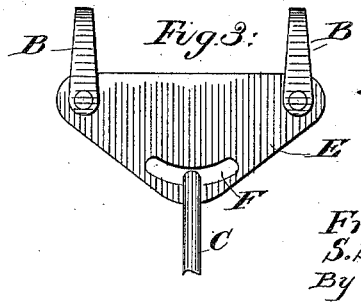


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

F. W. SMITH, Jr. & S. S. WILLIAMSON.

SASH BALANCE.

No. 301,289. Patented July 1, 1884.

Fig. 4

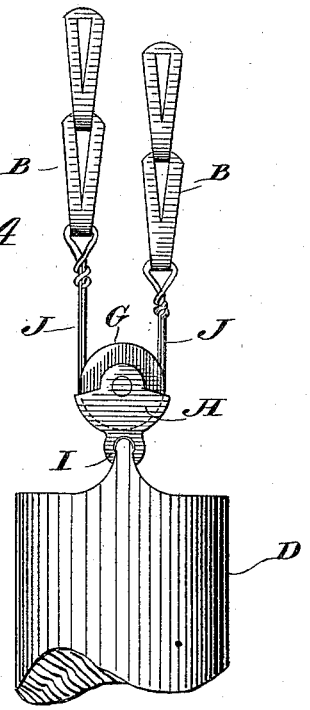
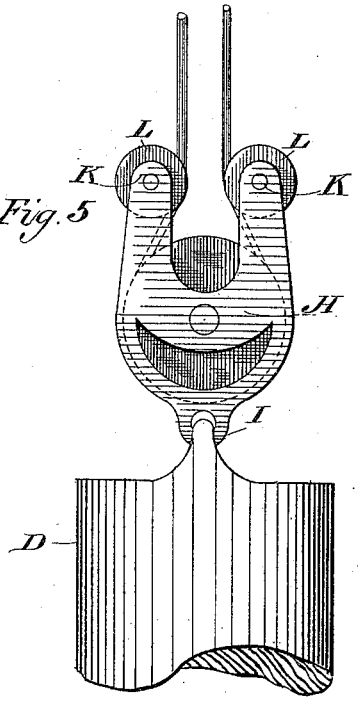


Fig. 5



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UNITED STATES PATENT OFFICE.

FRIEND W. SMITH, JR., AND S. STUART WILLIAMSON, OF BRIDGEPORT, CONNECTICUT, ASSIGNORS TO THE SMITH & EGGE MANUFACTURING COMPANY, OF SAME PLACE.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 301,289, dated July 1, 1884.

Application filed October 15, 1883. (No model.)

To all whom it may concern:

Be it known that we, FRIEND W. SMITH, Jr., and S. STUART WILLIAMSON, citizens of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Sash-Balances; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to certain novel and useful improvements in devices for suspending window-sashes and the like by double chains, and has for its object to equalize the strain on the chains; and with these ends in view our invention consists in the details of construction and combination of elements hereinafter fully and in detail explained, and then specifically designated by the claims.

In order that those skilled in the art to which our invention appertains may more fully understand its construction and operation, we will proceed to describe the same in detail, referring by letter to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a front elevation showing a bar with the chains pivoted at the extremities thereof and the weight suspended therefrom; Fig. 2, a similar view illustrating the arrangement of the bars when four chains are used. Fig. 3 shows a triangular-shaped plate with the chains pivoted at the upper extremities thereof, and the weight hung in such a manner that any eccentric position of the latter with respect to the chains is prevented. Fig. 4 illustrates the weight attached to the housing of a pulley and the chains secured to an independent band or cable passed around said pulley, and Fig. 5 a similar view showing an auxiliary set of pulleys for keeping the chains close together.

Similar letters denote like parts in the several figures of the drawings.

A is a bar, and B the chains connected at the extremities thereof. C is a link or hook pivoted to the bar, and D the weight hanging from and swinging freely on said link. When it is desired to use four chains, this may readily be accomplished by two bars of different lengths, pivoted at a common center, as seen at Fig. 2, the object of this of course being to space off the chains from each other, so that they can run over the pulley in their independent grooves. An ordinary plate, E, of triangular shape—such as is shown at Fig. 3—may be used with equal facility by providing a slot, F, at the bottom of the plate for the accommodation of the hook or link by which the weight is suspended. In this instance the slot should be curved to correspond with the arc which would be described by the plate at that point whenever either upper extremity is lifted or lowered by the action of the chains, in order that the said hook or link and the weight may assume by gravity a position in a vertical line centrally between the two chains. We are enabled to equalize the strain on the chains and at the same time keep them at an equal distance apart by using a pulley, G, pivoted within a housing or block, H, the latter terminating at its lower extremity in a hook or eye, I, for the accommodation of the weight, as clearly shown at Fig. 4. The chains are connected with a wire cable or metallic band, J, or other similar device passing around said pulley; or, if desired, the chain itself may run around the pulley, although we prefer to use an independent wire or band, as shown. In order that a larger and stronger pulley may be used, we extend the block H upward, as seen at Fig. 5, so as to form ears K, and between these ears pivot small guide-pulleys L in such manner that the distance between the latter is equal to the required space between the chains. Of course it will be readily understood that rope, wire, or any other suitable material may be used instead of chain, our invention not necessarily being confined in its application to any material, but being equally adapted in its utility to chain, rope, wire, or any material that can be run over a pulley.

Our invention as illustrated at Figs. 4 and 5 is not essentially different from the bar-and-plate construction shown in Figs. 1, 2, and 3, since the pulley corresponds precisely with the plate or bar, while the block or housing is

nothing more than the pivoted hook to which the weight is attached.

We do not wish to be understood as claiming, broadly, a device for equalizing the strain on the chains, &c., in a sash-hanging device, as we are aware that this is not new; but

What we do claim as new, and desire to secure by Letters Patent, is—

1. In a device for hanging sashes, the combination, with the chains or other material, of a single rocking bar or plate, a weight, and means for suspending said weight loosely in a vertical plane below the center of said bar or plate and central of the chains, substantially as described.

2. In a device for hanging sashes with double chains, a bar or plate having pivoted thereto at its central portion means for counterbalancing the weight of the sash, in combination with the chains attached to said bar or plate without said pivotal point, whereby the strain on the chains is equalized, substantially as and for the purposes set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

FRIEND W. SMITH, JR.
S. STUART WILLIAMSON.

Witnesses:
GEO. W. KEELEY,
SAM. B. SUMNER.