(No Model.)

S. J. VANCE.

SASH BALANCE.

No. 346,567. Patented Aug. 3, 1886.

Fig. 1.

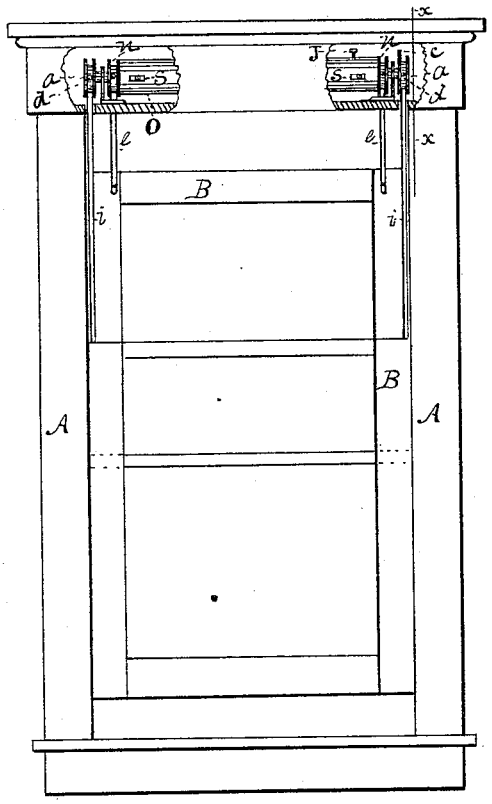


Fig. 2.

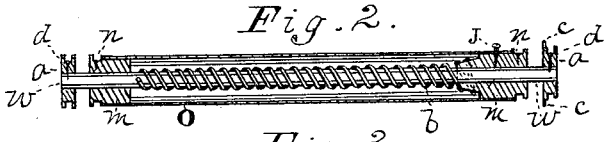


Fig. 3.

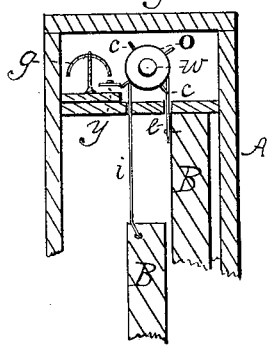
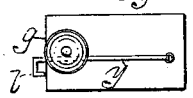


Fig. 4.



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SAMUEL J. VANCE, OF MACOMB, ILLINOIS.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 346,567, dated August 3, 1886.

Application filed May 10, 1886. Serial No. 201,770. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL J. VANCE, of Macomb, in the county of McDonough and State of Illinois, have invented a new and useful Improvement in Window-Sash Balances, with Alarm Attachment, of which the following specification will enable others skilled in the art to make and use the same, reference being had to the drawings, and to the letters of reference marked thereon.

This invention relates to that class of sash-balances with alarm attachment where a spiral spring is used as lifting-power to balance the sash and operate the alarm-bell; and its novelty consists in a duplex or double-acting roller constructed in such a manner that each part of the roller acts independent of and in conjunction with the other by means of one spring, which is more fully pointed out in the claim.

In the drawings, Figure 1 is an elevation of a window with a part of the upper facing cut away, showing the manner of attaching the invention to a window. Fig. 2 is a longitudinal section of the combined roller. Fig. 3 is a cross-section of Fig. 1 taken on the line *x x*. Fig. 4 is a plan of the alarm-bell detached.

Similar letters indicate like parts in each figure.

A represents a window-frame, with part of the upper facing cut away, showing the roller mounted in position. This roller is constructed as shown in Fig. 2, with a center shaft, *w*, and with an outer roller, *o*, which at each end has pulley-heads *m m*, having grooves *n n*. The shaft *w* passes loosely through the pulley-heads *m m*, and projects out at each end, having pulley-wheels *a a*, attached thereon, having sufficient space between the pulley-wheels on the shaft and the pulley-heads *m m* on the casing *o* for suitable bearings. The spiral spring *b* is placed around the shaft or inner roller, *w*, and inside of the casing or outer roller, *o*, the right-hand end of the spring being made fast to the head *m* on the right of the outer roller or casing, *o*. At the left end the spring is secured to the shaft *w*. By this manner of attaching the spring to the shaft *w* and outer casing, *o*, both are operated upon by the spring, and either one can be held stationary while the other one receives the full force of the spring. By means of the set-screw J the two parts, (inner and outer roller,) after winding up and before putting in use, are locked together. The upper sash, B, is attached to the pulley-heads of the outer roller, *o*, by means of the metal bands *e e*, their upper ends being attached in the grooves *n n* by set-screws, while the lower ends are attached to the sash in any suitable manner. The exact length of each of the bands *e e* is accomplished by turning the heads *m m* of the outer roller, *o*, winding up or unwinding the bands, as the case may require, in the grooves *n n*. Then by means of the set-screws in the slots *s s*, (see Fig. 1,) the heads and outer casing are firmly attached together. The lower sash is attached to the metal bands *i i* by any suitable means. The upper ends of said bands are attached to the grooved wheels *a a* by set-screws *d d*, which also secure the wheels to the shaft *w*. The bands *i i* are adjusted to the right length by turning the wheels and winding up the bands, or unwinding when they are made fast with the wheels to the shaft. The slots *s s* act also as a means of adjusting the length of the roller to different widths of windows. Just in front of the roller is placed an alarm-bell, *g*, (see Fig. 3, not shown in Fig. 1,) which has a spring-knocker, *y*, arranged as shown in Figs. 3 and 4, so that the projecting pins *c c c*, on the wheel *a*, at the right, will strike the head of spring-knocker *y*, which presses it down till the pin passes off the knocker, then it vibrates back and strikes the bell, which gives an alarm. This alarm is given whenever the lower sash is raised.

The operation is as follows: The spring *b* of the roller is wound up by holding the outer roller or casing, *o*, stationary, and revolving the rod or inner roller, *w*, until the strength of the spring is sufficient to balance the sash.

The roller is then mounted, as shown in Fig. 1, in suitable bearings at each end, and the sash are attached, as described, by the metal bands *i i* and *e e*. The operator can now raise or lower either sash without interfering with the other. When the upper sash is lowered or raised, the spring *b* acts upon the outer casing or roller, *o*, winding up or letting out the bands *e e* from the groove in the heads *m m*, while the weight and inertia of the lower sash hold the shaft *w* from turning, and when the

lower sash is raised or lowered the same operation as before described is performed by the shaft *w*, which revolves by the action of the spring *b*, while the upper sash, by its weight and inertia, holds the roller *o* stationary, the spring only acting upon one sash at a time.

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

In a spring sash-balance, a duplex roller constructed with a center shaft or roller, *w*, having grooved wheels *a a* at each end, the outer casing or roller, *o*, having slots *s s* and heads *m m*, the outer ends of which are formed into grooved wheels, the spiral spring *b*, all operating substantially as shown and described, for the purpose set forth.

SAMUEL J. VANCE.

Witnesses:
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