

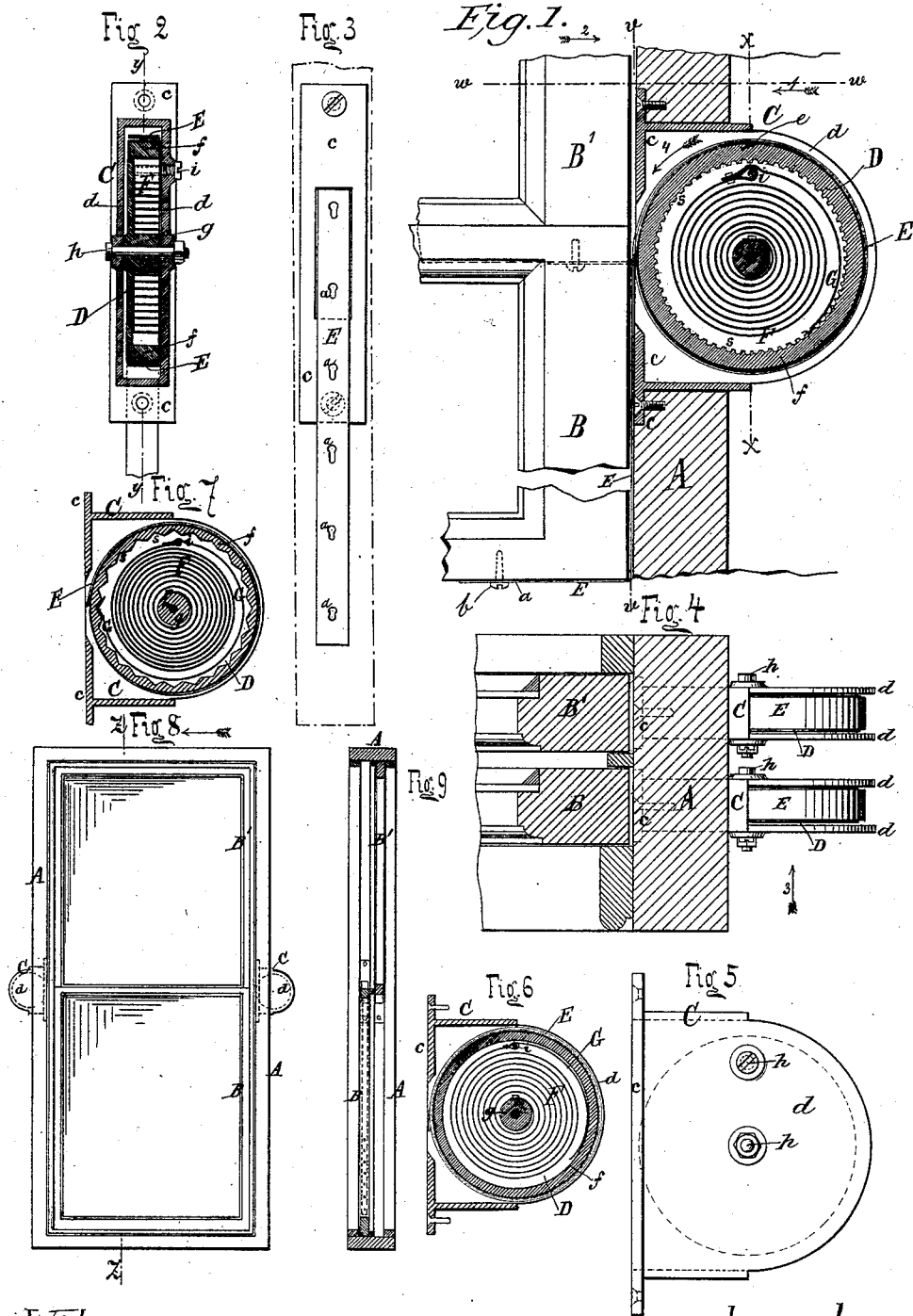
(No Model.)

J. SJÖSTRÖM.

SASH BALANCE.

No. 387,662.

Patented Aug. 14, 1888.



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# UNITED STATES PATENT OFFICE.

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## SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 387,662, dated August 14, 1888.

Application filed April 20, 1888. Serial No. 271,325. (No model.)

### *To all whom it may concern:*

Be it known that I, JONAS SJÖSTRÖM, a citizen of the Kingdom of Sweden, and a resident of New York, in the county and State of New York, have invented a new and useful Improvement in Window-Sash Sustainers, of which the following is a specification.

The object of my invention is to provide an improved device to replace the ordinary cords and weights by which window-sashes are balanced, the improved device being intended to more than counterbalance the weight of the sash, so as to assist in raising the latter, a friction device being provided for retaining the sash at any desired elevation.

The invention will be hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a front view of part of the sashes of a window and a partial section of the adjacent casing and of the device embodying my present invention, the section being taken on the line *y y* of Fig. 2. Fig. 2 is a vertical section of the device subject of the present invention, the section being taken on the line *x x* of Fig. 1, and seen in direction of arrow 1. Fig. 3 is a view of the latter, seen in direction of arrow 2 as from the line *v v* drawn between the sash and the casing in Fig. 1. Fig. 4 is a horizontal section taken on the line *w w* of Fig. 1, the lower sash being supposed to have been raised so as to be included in the section. Fig. 5 is a side view of the sustainer-casing. Figs. 6 and 7 are sectional views of the sustainer and its casing, seen as in Fig. 1, or as sections taken on the line *y y* of Fig. 2, but showing modifications of the device. Fig. 8 is a front view of the two sashes of the window and its adjacent casing, with the sustainers in position at opposite sides. Fig. 9 is a vertical section of the same, taken on line *z z* of Fig. 8.

Like letters of reference indicate like parts in the several figures.

A is the window-casing; B and B', the lower and upper sashes respectively.

The sustainer consists of the casing C, a drum or barrel, D, a metal band, E, a coiled spring, F, and a friction stop or retainer, G. The casing C is sunk into a recess in the window-casing in a manner similar to attaching

casing for cord-pulleys, it being secured to the window-frame by screws through a flange, *c*, as usual, said flange being provided with an opening, through which passes a thin metallic band, E, by which the sash is connected to the drum or barrel D. For this purpose one end of the band E is bent back partly upon itself and entered into a suitable slit or groove in the circumference of the barrel, as shown at *e*, Fig. 1, and the other end of the band is provided at intervals with slots *a*, Fig. 3, fitted to receive the shank of the screw, the upper end of the slot being enlarged sufficiently to admit the head of such screw, so that when the screw is fastened to the window-sash and the enlarged end of one of the slots *a* of the band is passed over the head and the band pulled toward the drum the shank of the screw will lodge in the narrow end of the slot, as seen at *b* in Fig. 1. In order to prevent interference of the head of the fastening-screw with the slideways of the sash, the screw for attaching the band to the sash is placed underneath the horizontal bottom rail of the latter. The barrel D is open on one side for the convenient insertion of the spring F, and is provided on the under side of its rim *f* with corrugations *s*, and is confined between and pivoted to the cheeks *d* of the casing C, being, for this purpose, provided with a perforated central hub, *g*, a bolt or spindle, *h*, passing through the cheeks *d* and the hub *g* simultaneously, so that the barrel is supported to revolve freely upon the said spindle *h*. The inner end of the spiral spring F is secured to the hub *g*, and the outer end of the said spring is looped upon a screw or stud, *i*, secured to the cheek *d* of the casing C, at the upper side of the barrel. The friction stop or retainer G is a spring normally acting outward or toward the periphery of the barrel, bearing with its free end upon the inner circumference, and secured with its other end to the stud *i*, or to the end of the spring *f*, fastened about the said stud. The free end of the friction-stop G is bent or formed to engage the corrugations *s*, not as a dead-stop, but merely to effect sufficient friction before yielding in either direction. The corrugations *s* may be dispensed with, and the friction-stop G made to act merely against a smooth inner periphery of the rim *f* of the barrel D, as shown in Fig. 6,

and this latter modification I prefer. When corrugations are used, they may be either curved, as in Fig. 1, or obtusely angular, as in Fig. 7.

5 The arrangement of the slots *a* at intervals in the band *E*, as before stated, is for the purpose of properly adjusting the length of the band in proportion to the height of the sash and desired tension of the spring *F* by simply  
10 hooking one or the other of the slots *a* upon the screw *b* in the bottom of the horizontal sash-rail. The action is simply as follows: By pushing down the sash the drum or barrel is revolved in the direction of arrow 4, Fig. 1,  
15 thereby coiling or setting the spring *F*, and when raising the sash the spring expands or uncoils, lifting the sash by the force of expansion, the friction-stop *G* being just merely strong enough to sustain the sash at any de-  
20 sired elevation.

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

1. The combination of a window-sash, a window-frame, *A*, having casing *C*, a drum or  
25 barrel mounted to revolve in the said casing, a band attached with one end to the rim of the said barrel and with the other end to the foot-rail of said sash, a spring coiled around the hub of the barrel and attached with one

end to the said hub and with the other end to  
30 a fixed point in the barrel-casing, and a friction spring-stop fixed to the said casing and bearing against the inner circumference of the said rim, the said spring being set by lowering the sash, substantially as described. 35

2. The combination of a window-sash, a window-frame, *A*, having casing *C*, a drum or barrel mounted to revolve in the said casing, a band attached with one end to the rim of  
40 said barrel and with the other end to the foot-rail of said sash, a spring coiled around the hub of the barrel and attached with one end to the said hub and with the other end to a fixed point in the barrel-casing, and a friction  
45 spring-stop fixed to the said casing and bearing against the inner circumference of the said rim, said rim having interiorly corrugations, and the said friction-stop being adapted to engage such corrugations, and the said spring being set by lowering the sash, substantially  
50 as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 17th day of April, 1888.

JONAS SJÖSTRÖM.

Witnesses:

A. W. ALMQVIST,  
JEAN A. JOHNSON.