(No Model.)

C. H. AMES.

SASH BALANCE.

No. 370,302. Patented Sept. 20, 1887.

Fig. 1.

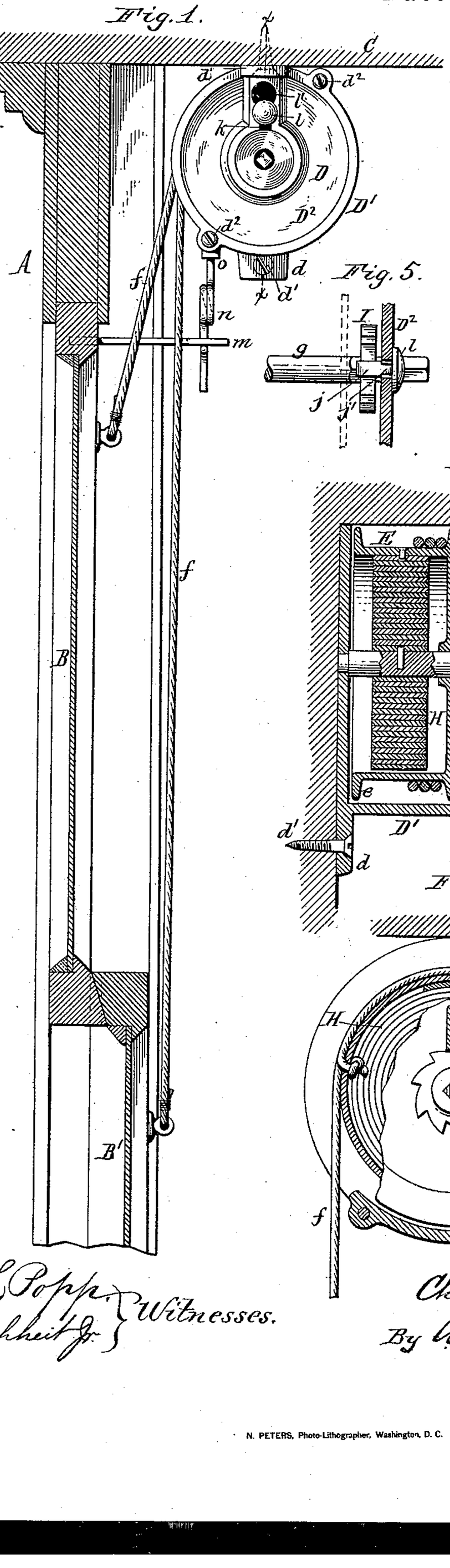


Fig. 2.

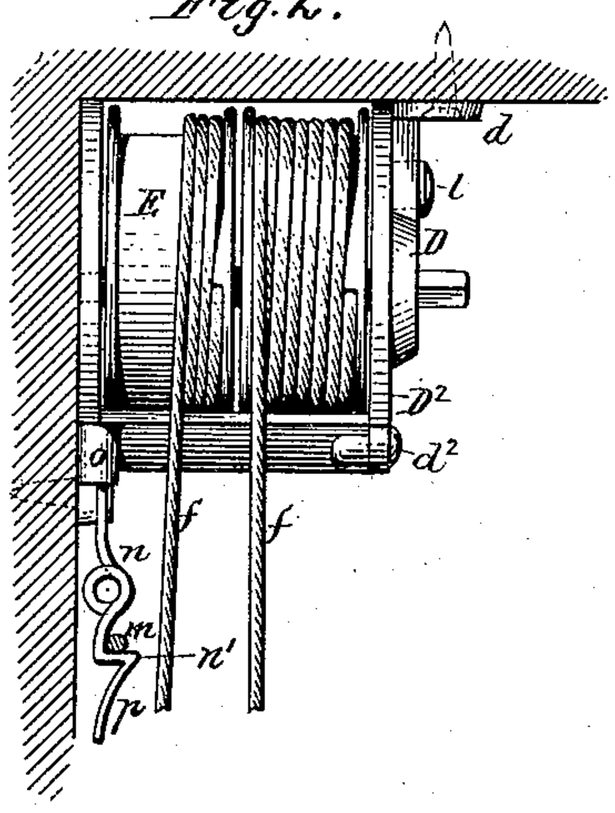


Fig. 5.

Fig. 3.

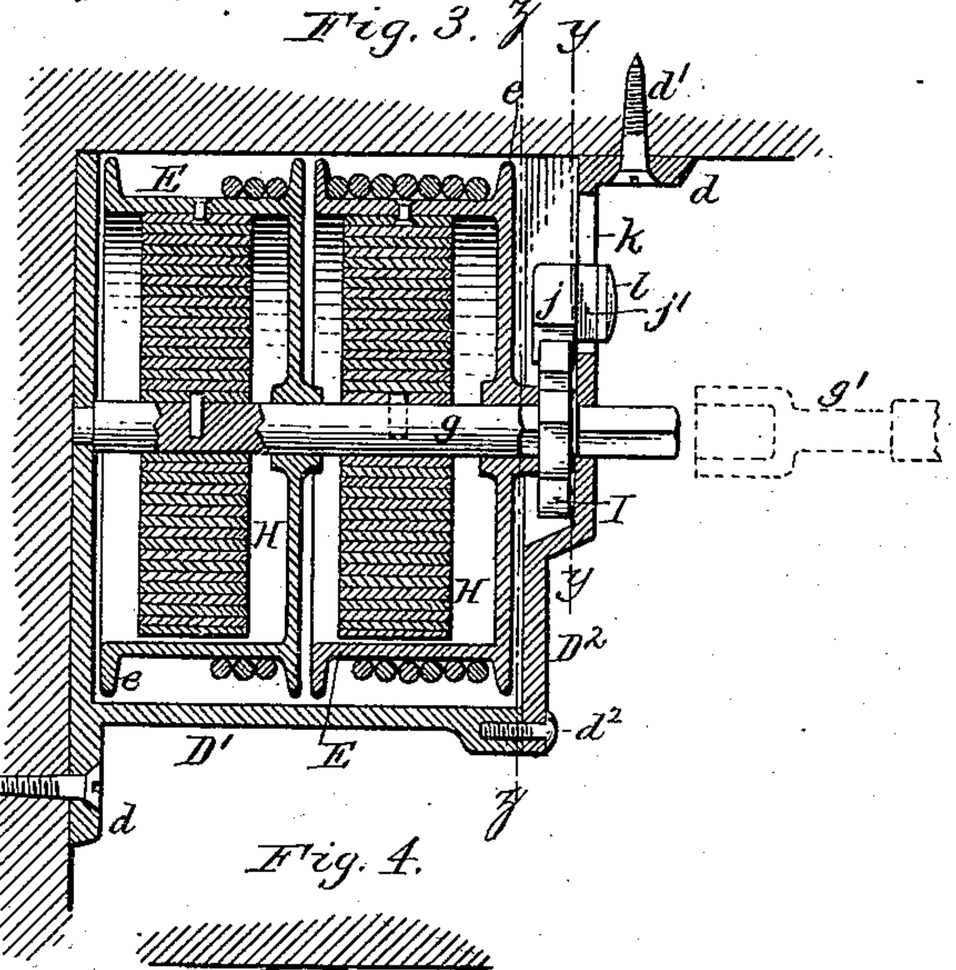
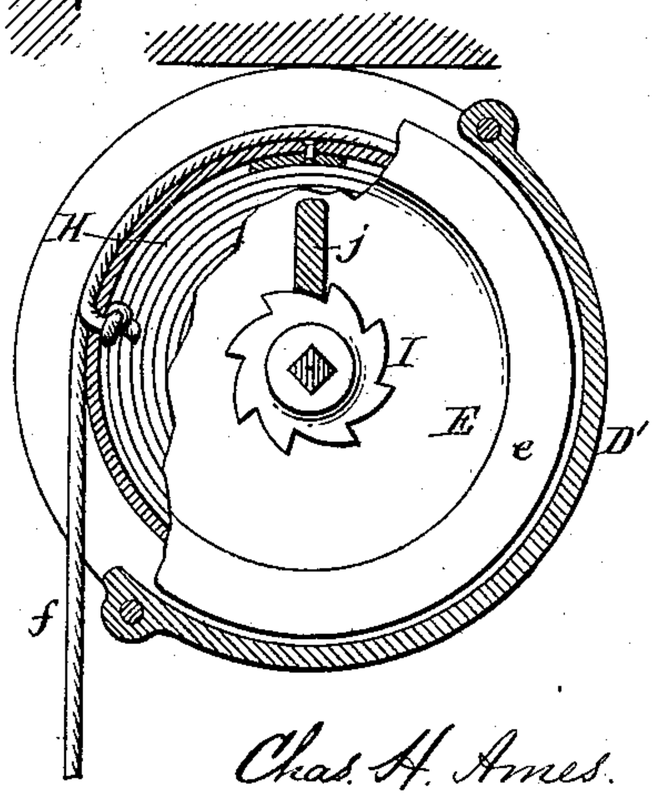


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES H. AMES, OF BUFFALO, NEW YORK, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO DE WITT C. WELCH AND JAMES W. TIFFT, BOTH OF SAME PLACE.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 370,302, dated September 20, 1887.

Application filed April 26, 1887. Serial No. 236,154. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. AMES, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Sash-Balances, of which the following is a specification.

This invention relates to an improvement in that class of sash-balances which are composed of a spring pulley or drum connected with the sash by a cord, and which are provided with a ratchet-and-pawl mechanism whereby the tension of the spring-pulley can be regulated.

The object of my invention is to produce a simple sash-balance of this character; and the invention consists of the improvement which will be hereinafter fully described, and pointed out in the claim.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of a window-frame provided with my improved sash-balance. Fig. 2 represents a front elevation of the sash-balance. Fig. 3 is a vertical section, on an enlarged scale, in line *x x*, Fig. 1. Fig. 4 is an end elevation of the ratchet and drum, showing the drum partly in section and showing the pawl and shaft in a section taken in line *y y*, Fig. 3, and the casing in a section in line *z z*, Fig. 3. Fig. 5 is a top plan view of the sliding pawl and the ratchet-wheel.

Like letters of reference refer to like parts in the several figures.

A represents the window casing or jamb, B the upper sash, and B′ the lower sash, which slide in suitable ways in the window-casing; and C is the lintel or top cross-piece of the window-frame.

D represents the sash-balance, arranged in one of the upper corners of the window-frame and inclosed by a suitable casing, D′. The latter is formed with perforated lugs or ears *d*, which are secured by screws *d′* to the lintel and window-jamb.

E E represent the pulleys or drums, which are arranged in the casing D′ and upon which the sash-cords *f* are wound. The latter are preferably secured to the pulleys E by passing the end of the cord through an opening in the rim of the pulley and forming a knot on the end of the cord on the inner side of the pulley, as shown in Fig. 4. The drums or pulleys E E are each provided with marginal flanges *e*, and are mounted upon a horizontal shaft or spindle, *g*, which is journaled in suitable bearings formed in the casing D′. The outer end of the spindle *g* passes through the casing D′, and is made square, so that it can be turned by a suitable wrench or key, *g′*. (Shown by dotted lines in Fig. 3.) The end plate, D², of the casing D′ is made detachable from the body of the casing and is secured to the latter by screws *d²*.

H represents the coiled springs, arranged within the pulleys E E, and each secured with its inner end to the shaft or spindle *g* and with its outer end to the rim of the pulley, so that by turning the shaft in the proper direction the springs will be strained.

I represents a ratchet-wheel secured to the shaft *g* within the casing D, and *j* represents a pawl which engages with the ratchet-wheel I by gravity and holds the same against backward movement. The pawl *j* slides vertically in an elongated opening or slot, *k*, formed in the end plate of the casing D′, and is provided with a contracted neck or shank, *j′*, which projects through the slot *k* and terminates in a button or finger-piece, *l*, whereby the pawl can be raised. The button *l* is made larger than the width of the slot *k*, so as to retain the pawl in the slot. The pawl *j* is introduced into the slot *k* from the inner side of the casing D′, and the upper end of the slot is formed with an enlargement, *k′*, for the passage of the button *l*.

In adjusting my improved sash-balance the shaft *g* is turned by the key *g′* until the springs H have received sufficient tension to balance the sash. If it is desired to relax the springs H, the pawl *j* is lifted by means of the button *l* and the shaft *g* allowed to move backwardly until the springs have been given the proper tension. The pawl *j* is then permitted to fall in engagement with the ratchet-wheel I, whereby the shaft *g* is held against turning and the springs H are prevented from unwinding.

The upper sash, B, is provided near its upper end with a rod or projection, *m*, which is adapted to engage with a spring-catch, *n*, when the sash is in its highest position. By this means the position of the upper sash is not af-

fected by the movements of the lower sash, which latter, by its frictional contact with the upper sash, has a tendency to draw the same downwardly. The spring-catch *n* is preferably secured in a socket, *o*, formed in the casing D′, and is made in the form of a hook, *n′*, which is provided with an inclined extension, *p*, for guiding the projection *m* into engagement with the hook. Upon raising the upper sash, B, the projection *m* strikes the extension *p* and engages with the hook *n′*, and by pulling the sash downwardly the spring-catch *n* is deflected and the projection *m* disengaged therefrom.

My improved sash-balance is simple in construction and can be easily and quickly adjusted.

I claim as my invention—

The combination, with the pulley E and its shaft *g*, provided with a ratchet-wheel, I, of a spring, H, connecting the pulley with the shaft, a casing, D′, provided with a vertical slot, *k*, having an enlargement, *l′*, and a loose pawl, *j*, sliding in said slot, and having a contracted neck, *j′*, and an enlarged finger-piece, *l*, substantially as set forth.

Witness my hand this 12th day of April, 1887.

CHARLES H. AMES.

Witnesses:
D. C. WELCH,
CARL F. GEYER.