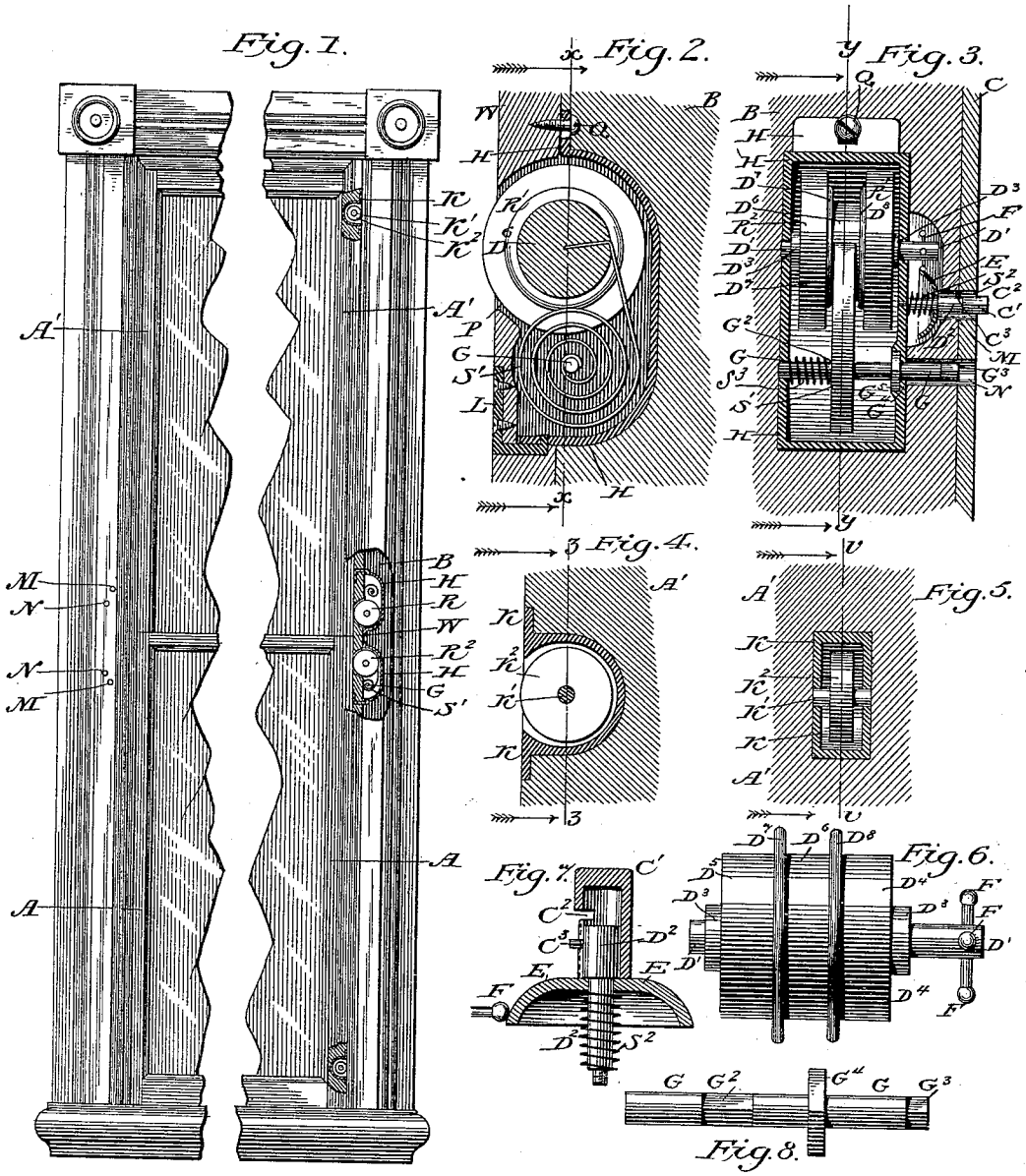
(No Model.)

N. HAMLET.

SASH BALANCE.

No. 481,302. Patented Aug. 23, 1892.



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SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 481,302, dated August 23, 1892.

Application filed March 25, 1892. Serial No. 426,452. (No model.)

To all whom it may concern:

Be it known that I, NOAH HAMLET, a citizen of the United States, residing at Little Rock, in the county of Pulaski and State of Arkansas, have invented certain new and useful Improvements in Sash-Balances; and I 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.

My invention has relation to sash-balances; and it consists in the novel construction and arrangement of its several parts, hereinafter described in this specification and the claims hereto attached.

In the accompanying drawings, Figure 1 is an elevation of a window frame and sash, showing my invention attached thereto. Fig. 2 is a longitudinal sectional view of Fig. 3 cut on the line *y y*. Fig. 3 is an edge view of my invention. Fig. 4 is a sectional view of Fig. 5, cut on the line *v v*. Fig. 5 is an edge view of a rubber bearing-wheel and its journal-frame. Figs. 6, 7, and 8 are detail views.

The device, as shown in Figs. 3 and 2, is mortised into the window-frame, two on each side, with the periphery of their rubber rollers R′ R^2 bearing against the edges of the upper and lower sash.

The device, as shown in Fig. 5, is let into both edges of the sash, one in each edge of the lower sash at its lower end, and one in each edge of the upper sash at its upper end, so that said sash will move up and down smoothly, evenly, and without noise, as the rubber rollers K^2 bear against the jambs of the frame. The upper sash A′ is placed in the upper part of its tracks in the frame, and then the rollers R′ R^2 are let into the window-frames, and then stops are placed in the lower end of its said tracks sufficiently long to keep it from passing down below said rollers. The lower sash A is placed in its tracks, the rollers R′ R^2 are let into the window-frames, and then stops sufficiently long are placed in the upper part of its tracks to keep it from passing up from between said rollers.

H is an iron frame designed to hold the machinery of my invention, and has back, end, and side walls, with no front wall, so that the periphery of the rubber rollers R′ R^2 may extend through and press against the edges of the sash. The upper lug is provided with a slot, which passes over the screw Q, and thus this end of the frame is held in position. The lower end of the frame H is provided with a perforation, in which fits the end of the hook L, and thus the lower end of the frame is held in position.

D′ is a journal, having near each end shoulders D^3, the outer faces of which bear against the inner faces of the frame, while their inner faces bear against the bearings D^4 D^5. Between said bearings is a drum D^6, to which is secured one end of a strong spiral spring, the other end of which is secured to a journal G. Between said spring and the rubber rollers are circular plates D^7 D^8, to keep the spring from impinging against the rollers. Around each of the bearings D^4 D^5 are rubber rollers R′ R^2.

In order to facilitate the adjustment of the tension of the main spring S′, the shaft G to which it is fastened has a large thin square piece G^4 fastened to it, which fits into a square recess G^5 in the iron frame H, which contains the device. A light spiral spring S^3 between the main spring and the opposite side of said iron frame keeps this square in its square socket; but by pressing endwise upon this shaft this square is thrown out of its socket, thus leaving the shaft free to rotate. As the outer end G^3 is made square for this purpose, a key may be placed upon it, the shaft forced back and the main spring wound to any desired degree of tension. In heavy windows if the friction between the window and rollers be insufficient to sustain the window, small sharp pins may be inserted in the rollers R′ R^2 and allowed to project slightly. After the tension has been adjusted by releasing the endwise pressure on the shaft G the spring S^3 will force the square G^4 back into its socket, thus holding the main spring firm.

In order to render this device more useful, one end of the journal D′, bearing the rubber rollers, is made to project through one side of the iron frame, and has upon its extremity four iron strikers F, which revolve as the window is raised or lowered. A bell E is fastened to the frame in such a manner as in its normal position to be in the path of said strikers. This will be valuable as a burglar-

alarm. A simple push-button arrangement as shown in the drawings, Fig. 7, permits the bell to be thrown in or out at will. The said bell E works around the pin D^2 and is held up against the shoulder of said shaft by means of a spiral spring S^2. The cap c' works over the outer end of said pin, and has in it a slot c^2, so that when pressed down said cap may be caught by the pin c^3, and as its lower end impinges against the the upper face of the bell E the said bell may be then held down and out of the track of the strikers F. The lower end of said pin D^2 is screwed into one wall of the frame H at such a distance from the shaft D′ that the strikers F will strike the bell as said shaft revolves.

The operation of my invention is as follows: The devices, Figs. 3 and 5, being in position and the sash in place, as the sash descends the steel spring S′ will be wound upon the drum D^6, thus increasing the tension of the spring as the sash descends. It is evident that the tendency of the rollers R' R^2 is to rotate contrary to the motion of the descending sash. It is further evident by increasing and adjusting this tension and its resulting tendency to force the sash upward that the tendency of the sash to run down and the opposite tendency of the rollers may be made practically equal, thus making the sash perfectly balanced.

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

1. The combination, with a window frame and sash, the frame H, having rear, end, and side walls, and front opening in its front, and square depressions G^5 in one of its side walls, lock L, adapted to hold the lower end of said frame, shaft D′, journaled in said frame having rubber bearings D^4 D^5, rubber rollers R' R^2, and between said rollers drum D^6 and plates D^7 D^8, shaft G, also journaled in said frame, having rigidly secured to it a square G^4, adapted to fit in depression G^5, spring S′, one end secured to drum D^6, and the other to said shaft G, spiral spring S^3, working around said shaft G between said spring S′ and one wall of the said frame, substantially as shown and described, and for the purposes set forth.

2. The combination, with a window frame and sash, the frame H, having rear, end, and side walls, and opening in its front, and square depression G^5 in one of its side walls, lock L, adapted to hold the lower end of said frame, shaft D′, journaled in said frame, having rubber bearings D^4 D^5, rubber rollers R' R^2, and between said rollers drum D^6 and plates D^7 D^8, shaft G, also journaled in said frame, having rigidly secured to it a square G^4, adapted to fit in depression G^5, spring S′, one end secured to drum D^6, and the other to said shaft G, spiral spring S^3, working around said shaft G between said spring S′ and one wall of the said frame, strikers F, secured on one end of the shaft D′, and bell E, secured to said frame in such a position that said strikers will strike against the same, substantially as shown and described, and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

NOAH HAMLET.

Witnesses:
T. W. WILSON,
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