(No Model.)

F. W. HIRONIMUS.

SASH BALANCE.

No. 598,478. Patented Feb. 1, 1898.

Fig. 1.

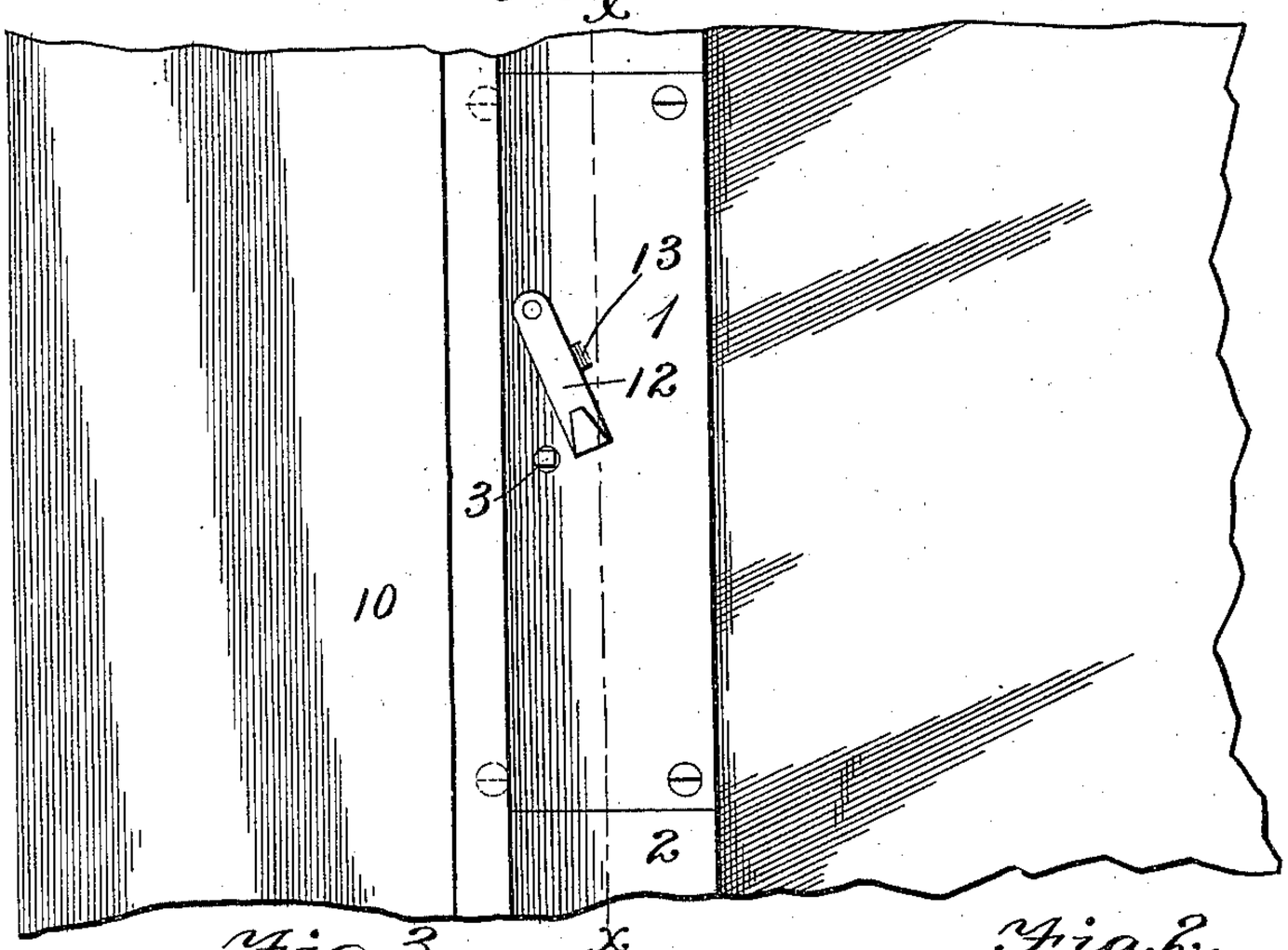

Fig. 3.

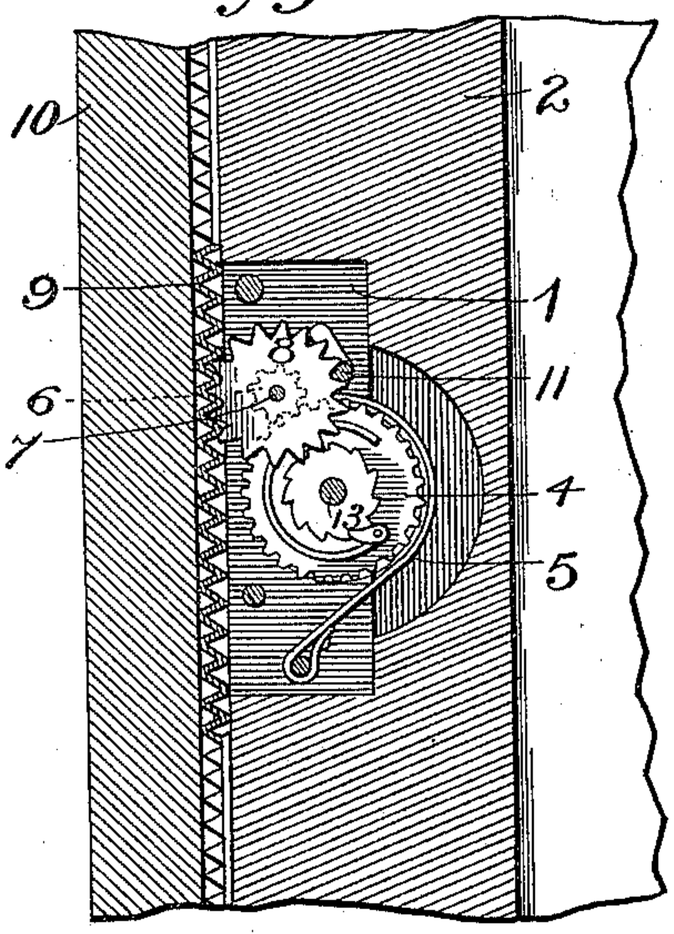

Fig. 2.

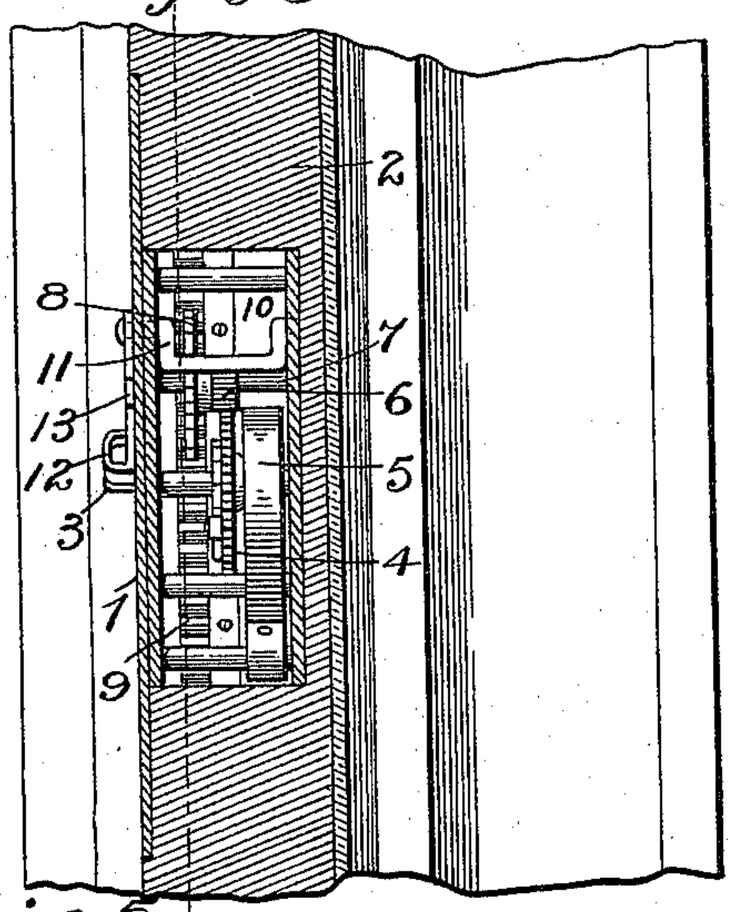

Fig. 4.

Fig. 5.

Inventor

Fred W. Hironimus

Witnesses
Edwin G. McKee
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By his Attorneys,

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UNITED STATES PATENT OFFICE.

FRED W. HIRONIMUS, OF CORYDON, KENTUCKY, ASSIGNOR OF ONE-HALF TO R. A. HARNESS, OF SAME PLACE.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 598,478, dated February 1, 1898.

Application filed April 3, 1897. Serial No. 630,589. (No model.)

To all whom it may concern:

Be it known that I, FRED W. HIRONIMUS, a citizen of the United States, residing at Corydon, in the county of Henderson and State of Kentucky, have invented a new and useful Sash Balance and Lock, of which the following is a specification.

The invention relates to improvements in sash balances and locks.

The object of the present invention is to improve the construction of spring sash-balances and to provide a simple and efficient lock adapted to fasten a window either open or closed or at any adjustment and to prevent the same from being moved upward or downward by exterior pressure.

The invention consists in the construction and novel combination and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and pointed out in the claim hereto appended.

In the drawings, Figure 1 is an elevation of a portion of a window provided with a sash balance and lock constructed in accordance with this invention. Fig. 2 is a vertical sectional view on line *x x* of Fig. 1. Fig. 3 is a similar view on line *y y* of Fig. 2. Fig. 4 is a detail perspective view of the locking device. Fig. 5 is a similar view of a portion of the casing, illustrating the construction of the stop for engaging the handle of the locking device.

Like numerals of reference designate corresponding parts in the several figures of the drawings.

1 designates a casing mounted in a recess of a window-sash 2 and having a winding-shaft 3 mounted in it and disposed horizontally, and upon the winding-shaft is mounted a spring-actuated gear-wheel 4. The gear-wheel, which is connected with the winding-shaft by a clutch of the ordinary construction, is connected with one end of a barrel-spring 5, which has its other end secured to the casing and which is designed to take the place of a sash-weight in balancing the sash. The spring-actuated gear-wheel meshes with a pinion 6 of a shaft 7, which also carries a cog-wheel 8, and the latter engages a rack-bar 9 of the window-frame 10, and the raising and lowering of the sash winds and unwinds the spring, as will be readily apparent. The clutch, which connects the spring-actuated gear-wheel to the winding-shaft, operates in the ordinary manner and enables the spring to be wound up to the proper tension for balancing the sash, and after the spring has been adjusted to the proper tension it does not require any further attention.

The sash, which is designed to be provided at each side with a sash-balance, is locked at any desired adjustment by a locking device 11, consisting of a crank-loop disposed transversely of the casing and journaled at its ends thereon. The crank-loop is adapted to engage the cog-wheel, and its engaging portion is substantially triangular in cross-section to fit the spaces between the teeth of the wheel, which is held against rotation in either direction. The outer end of the crank-shaft is extended through the casing and has a handle 12 secured to it and arranged on the face-plate of the casing, which is provided with a protuberance 13, forming a stop to lock the handle against upward movement and thereby retain the locking device in engagement with the cog-wheel. The protuberance forms a shoulder at one side and a beveled face at the other side, and it effectually prevents the locking device from being thrown out of engagement with the cog-wheel by shaking or jolting the sash.

It will be seen that the sash balance and lock is adapted to be readily applied to any ordinary window, that it will take the place of sash-weights and sash-fasteners, and that the locking device is adapted to securely fasten a sash either closed or at any desired adjustment, and that it cannot be thrown out of engagement with the cog-wheel by jarring or jolting the window-sash.

What I claim is—

In a device of the class described, the combination with a window-frame having a rack-bar, and a sash, of a spring-actuated cog-wheel mounted on the sash and meshing with the rack-bar, a crank-loop journaled in suitable bearings and arranged to swing into and out of engagement with the teeth of the cog-wheel and having one end or journal extended

through the window-sash, a casing or plate mounted on the sash and provided with a protuberance 13 struck up from the metal of the casing or plate and having a beveled face at one side and a shoulder at the other, and a handle arranged on the exterior of the plate or casing and secured to the extended end or journal of the crank-loop, said handle being arranged to swing into and out of engagement with the protuberance 13, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FRED W. HIRONIMUS.

Witnesses:

H. H. BRANDES,

RUDY HEAD.