

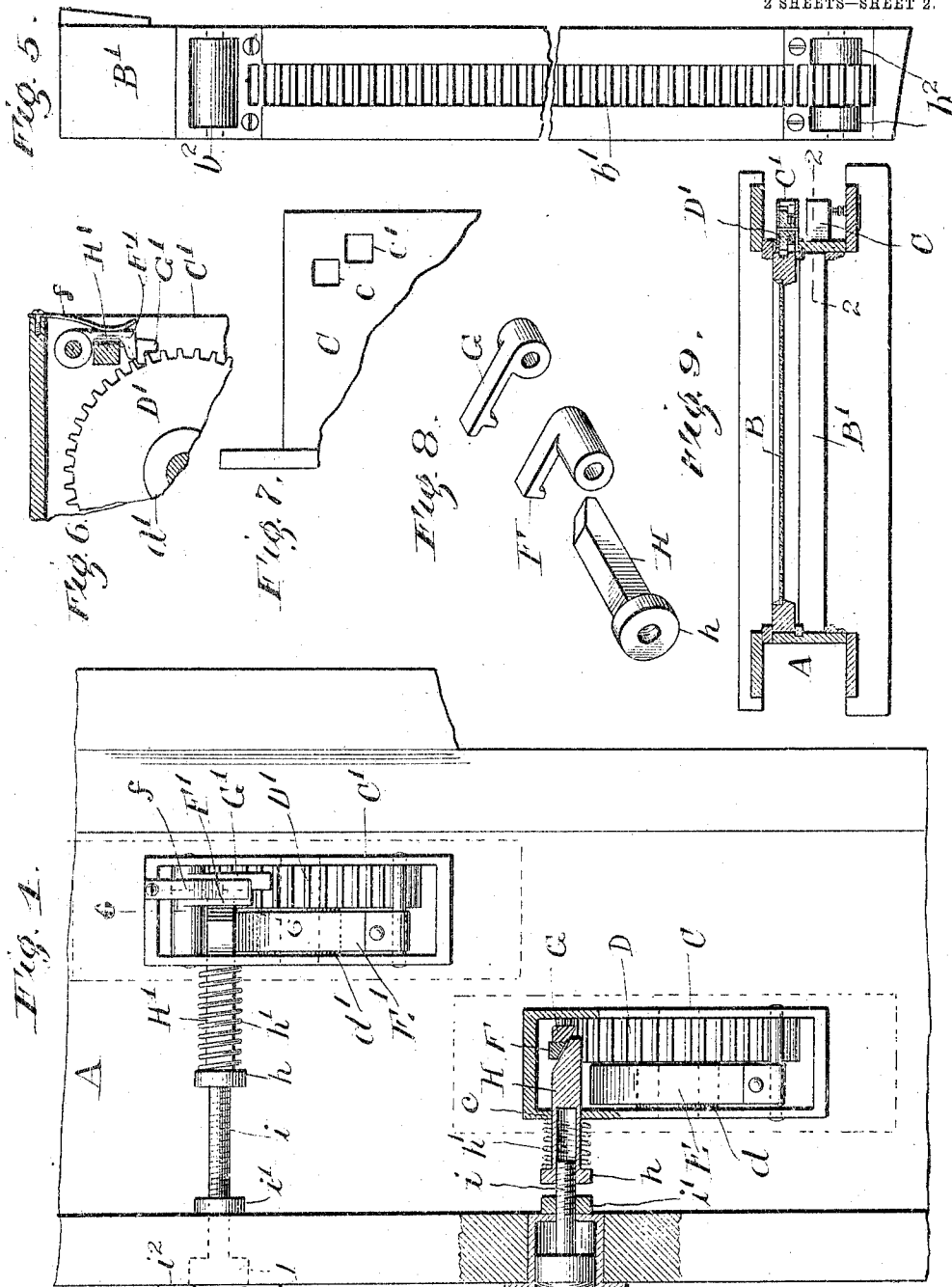
No. 811,382.

PATENTED JAN. 30, 1906.

J. H. CORCORAN.
COMBINED SASH BALANCE AND LOCK.

APPLICATION FILED DEC. 19, 1904.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN H. CORCORAN, OF KENOSHA, WISCONSIN.

COMBINED SASH-BALANCE AND LOCK.

No. 811,382.

Specification of Letters Patent.

Patented Jan. 30, 1906.

Application filed December 19, 1904. Serial No. 237,357.

To all whom it may concern:

Be it known that I, JOHN H. CORCORAN, a citizen of the United States of America, residing at Kenosha, in the county of Kenosha and State of Wisconsin, have invented certain new and useful Improvements in Combined Sash-Balance and Locks, of which the following is a specification.

My invention relates to certain new and useful improvements in combined sash-balance and locks; and its object is to produce a device of this class which shall have certain advantages, which will appear more fully and at large in the course of this specification.

To this end my invention consists in certain novel features, which are shown in the accompanying drawings as embodied in my preferred form of construction.

In the aforesaid drawings, Figure 1 is an elevation of a window-frame and sash provided with my improved device. Fig. 2 is a vertical section in the line 2 2 of Fig. 9. Fig. 3 is a perspective view of one of the springs engaging with the sash. Fig. 4 is an end view of a portion of the frame, a part being broken away in vertical section, the plane of the section being indicated by the line 4 4 of Fig. 1. Fig. 5 is an elevation of the edge of one of the sash. Fig. 6 is a vertical section in the line 6 6 of Fig. 4, showing a portion of the balance and lock on the upper sash. Fig. 7 is an elevation of the upper corner of one of the frames of my device. Fig. 8 is a perspective view of the two locking-pawls of a single device and the releasing-wedge therefor, and Fig. 9 is a horizontal section in the line 9 9 of Fig. 1.

Referring to the drawings, A is a window-frame of the ordinary form, in which are two sash B B'. The two sash are spring-pressed in one direction by springs *b*, supported on the sash and engaging the stile. Each of the sash has on its opposite side a rack-bar *b'* and antifriction-rollers *b²*, bearing against the adjacent stile, so that the sash will run easily up and down.

The stile, toward which the sash are pressed, is provided with two longitudinal perforations, one adjacent to each of the sash, and in these perforations are secured frames C C'. In the frames C C' are journaled pinions D D', extending through the perforations in the frames and engaging with the rack-bars on the adjacent sash. Each of the pinions D D' has a drum *d* *d'*, preferably integral therewith, upon which drums are wound springs

E E', which tend to hold the corresponding sash in a raised position. Each frame has pivoted to it two pawls, the pawls of the device engaging with the lower sash being designated by F G and those on the device engaging with the upper sash being designated by F' G'. The pawls F G are so arranged that one always engages with one of the teeth of the pinion, while the other lies on top of a tooth and does not engage therewith. By the use of the two pawls of different lengths lost motion is decreased, one or the other of the pawls taking hold immediately upon the slightest backward movement of the pinion. The pawls F' G' are exactly similar to the pawls F G, except that they are turned over on their pivot and also extend therefrom in a direction ninety degrees removed from the pawls F G. In this way the pawls F G prevent the rotation of the pinion D in a right-hand direction as viewed in Fig. 2, while the pawls F' G' prevent rotation of the pinion D' in a left-hand direction as viewed in Fig. 6. A spring *f* holds the pawls F' G' in engagement with the corresponding pinion, while the pawls F G are held in engagement by their own weight. It will be observed that these pawls when in engagement with the pinions make it impossible to raise the lower sash or lower the upper sash.

The front face of each of the frames C C' is provided with two perforations *cc'*. A square beveled lifting-wedge H extends through the opening *c* of the lock and balance of the lower sash and is placed with its beveled surface up to engage the pawls F G to raise them from engagement with the pinion and permit the lower sash to be raised. A similar lifting-wedge H' extends through the opening *c'*. This wedge has its beveled edge turned to one side to engage with the vertical pawls F' G' to move them away from their pinion to permit the upper sash to be lowered. These two lifting-wedges are exactly alike except in length, and it will be obvious that by turning over the pawls and rotating the lifting-wedge and passing it through a different perforation in the sash of the frame a single device can be used interchangeably on an upper or lower sash. These two lifting-wedges are provided with heads *h* and are spring-pressed outward by springs *h'*. Push-buttons, having screw-threaded shanks *i* threaded in the ends of the lifting-wedges, are employed to push them in, and the shanks *i* are provided with lock-nuts *i'*, which engage with the rear ends of sockets

2³, in which the push-buttons move to limit outward movement of the push-buttons and lifting-wedges. The screw-threaded connection between the lifting-wedge and push-button provides means for positioning the lifting-wedge with respect to the pawls regardless of the distance of the socket away from the frames C C'.

It will be obvious from this description of the mechanical arrangement that my improved device serves both as a sash-balance and lock. The springs tend normally to hold the corresponding sash in a raised position, and thereby counterbalance the weight thereof, and the pawls prevent the raising of the lower sash or lowering of the upper sash unless the push-buttons are pressed, which can only be done from the inside of the window.

I realize that considerable variation is possible in the details of this construction without departing from the spirit of my invention, and I do not, therefore, intend to limit myself to the specific form herein shown and described.

I claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the combination with a window and sash, of a rack-bar on one side of the sash, a pinion in engagement with said rack-bar, a pawl engaging the teeth of the pinion, a wedge engaging the pawl to disengage it from the pinion hav-

ing a flange upon its outer end, a spring engaging said flange and adapted to normally hold the wedge out of engagement with the pawl, a push-button threaded on said wedge and a collar threaded upon said push-button and adapted to limit the outward movement thereof.

2. In a device of the class described, the combination with a window, sash, and a rack-bar mounted on one edge thereof, of a lock-casing, a pinion journaled therein and in mesh with said rack-bar, a spring upon said pinion tending to raise the sash, a pawl pivoted on the casing and capable of engagement with the pinion to prevent rotation thereof in one direction when hung in a substantially horizontal plane, and adapted to prevent reverse rotation of the pinion when hung in a substantially vertical plane, a wedge adapted to coact with the pawl when hung in either position to throw the same out of engagement with the pinion and two openings in the casing arranged to guide said wedge in either position with respect to the pawl.

In witness whereof I have signed the above application for Letters Patent at Kenosha, in the county of Kenosha and State of Wisconsin, this 12th day of December, A. D. 1904.

JOHN H. CORCORAN.

Witnesses:

JAMES CAVANAGH,
JOHN P. WATTLES.