

(No Model.)

A. W. THOMPSON.
SASH LIFT AND LOCK.

No. 427,713.

Patented May 13, 1890.

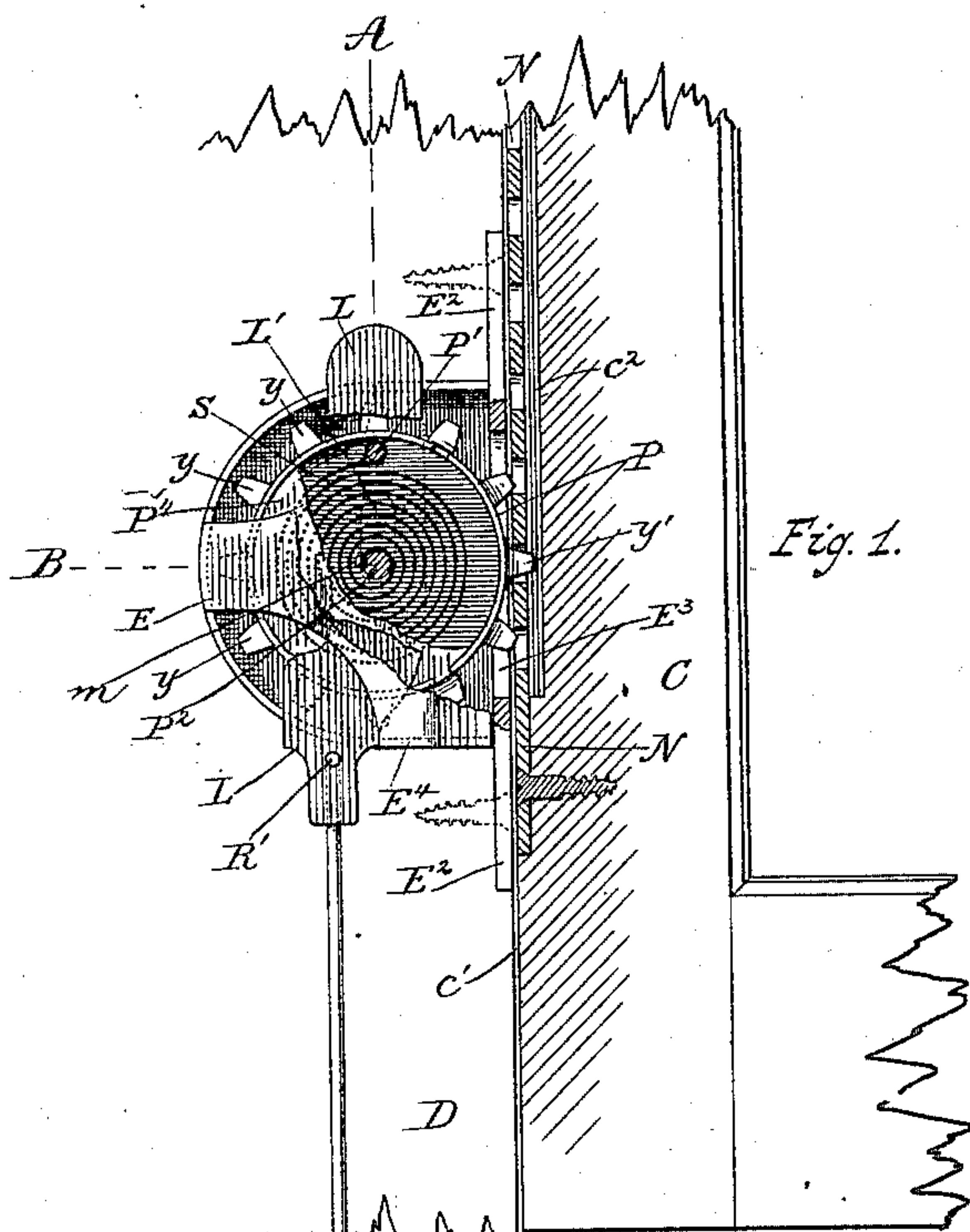


Fig. 1.

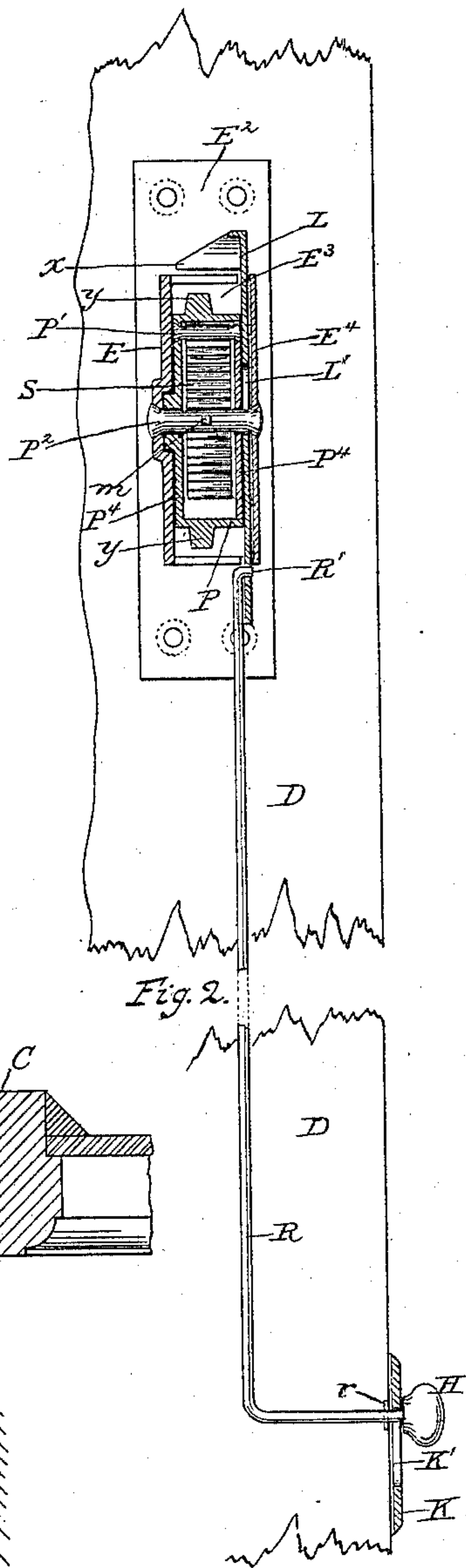


Fig. 2.

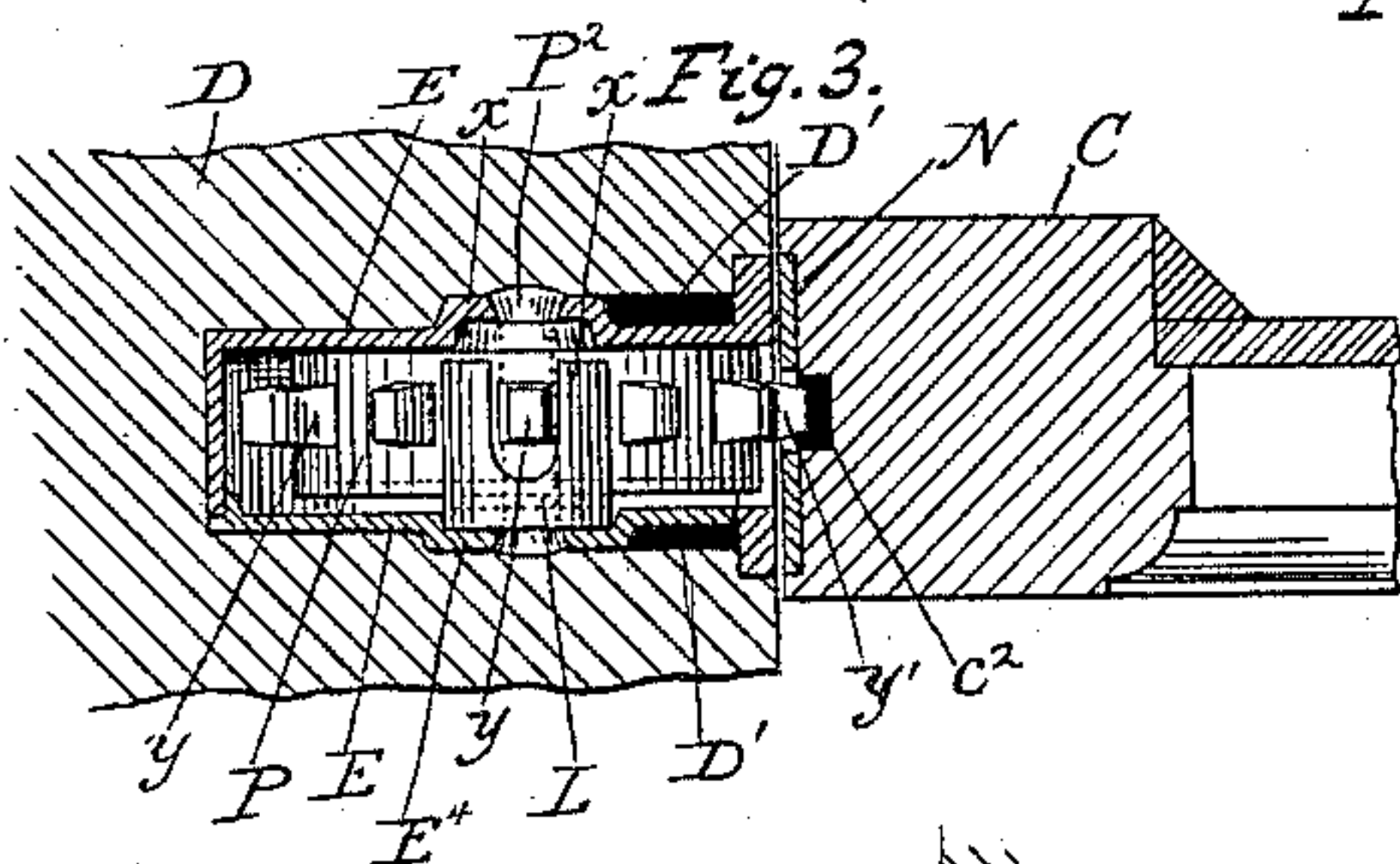


Fig. 3.

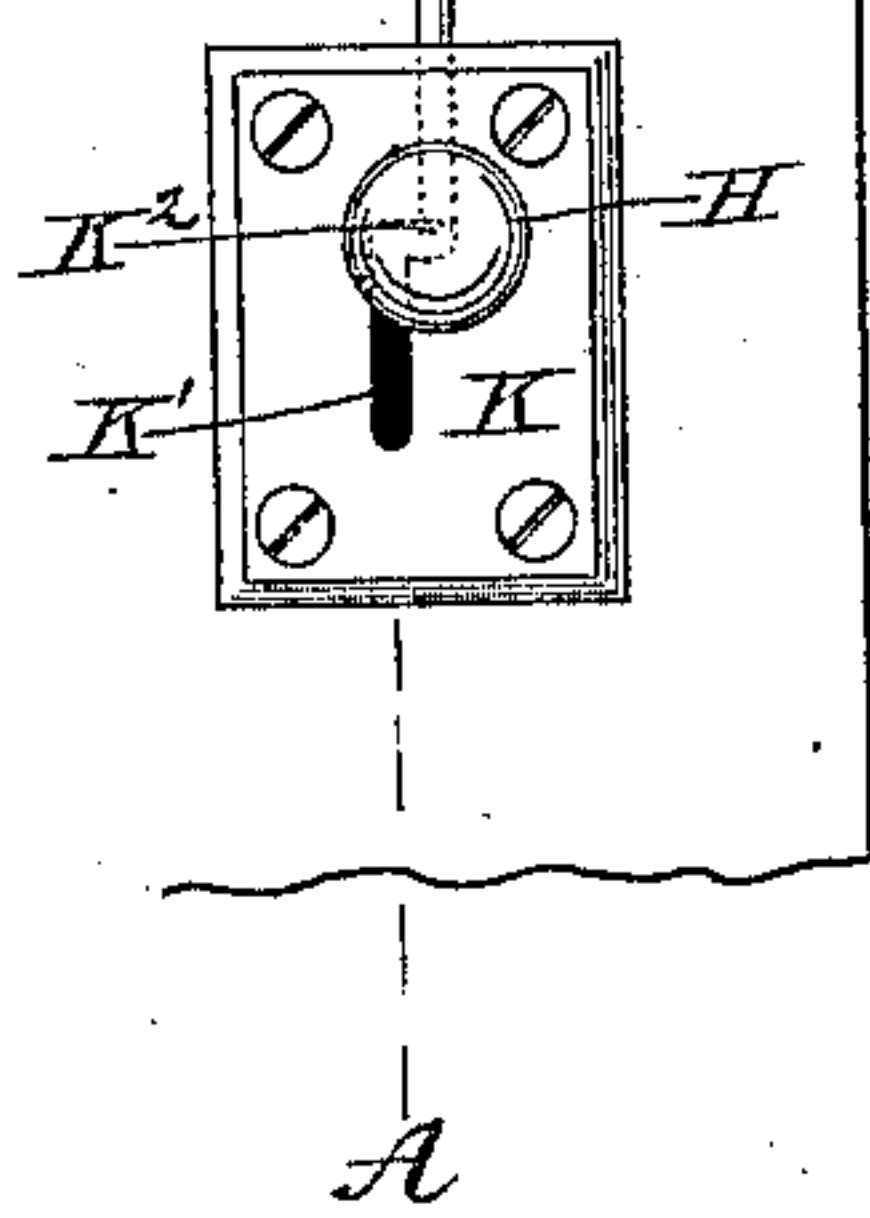


Fig. 4.

Witnesses.

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UNITED STATES PATENT OFFICE.

ARTHUR W. THOMPSON, OF GREENBUSH, NEW YORK.

SASH LIFT AND LOCK.

SPECIFICATION forming part of Letters Patent No. 427,713, dated May 13, 1890.

Application filed March 17, 1890. Serial No. 344,191. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR W. THOMPSON, of the town of Greenbush, county of Rensselaer, and State of New York, have invented a new and useful Improvement in Combined Sash Raisers and Fasteners, of which the following is a specification.

My invention relates to the raising and lowering of window-sashes and the fastening of the same, and its object is to do away with the cumbersome weights, cords, and catches now in use.

Another purpose of my invention is the raising and lowering of windows where weights and cords are not used, as railway-car windows.

My invention consists in securing a rack or equivalent slotted plate to the edge or side of the sash, and a gear or pinion in a recess in the frame adapted to mesh with the rack on the sash, the operating mechanism of the gear consisting of a spring whose strength is adjusted to the weight of the sash, said gear being provided with a locking device operated from without the frame.

Accompanying this specification and forming a part of it is one plate of drawings containing four figures, in all of which similar letters refer to corresponding parts.

Figure 1 is a plan view of my invention, showing a lower sash C raised, sufficient of the sash being removed to show the rack N and the window-frame D, containing the recessed pinion or gear, part of the frame, as well as parts of the gear and gear-casing, being removed, portions of the device being indicated by dotted lines. Fig. 2 is a sectional drawing taken on the line A A of Fig. 1. Fig. 3 is a plan view of the gear and locking device viewed from above, the case and frame being in section at line B of Fig. 1. Fig. 4 shows the side of the sash opposite that to which the rack is secured provided with the anti-friction roller W.

The sash C slides in the ordinary ways in the frame D in the usual manner. Upon the edge C' a groove C² is cut, running nearly the length of the sash, and in this groove is fitted a slotted plate N, as shown. Instead of this plate, however, a rack-bar may be used with the same result.

The frame D, broken to allow for indefinite

length, is recessed at D', and in this recess the pinion P, contained in the casing E, the latter having the face E², provided with the opening E³, is secured. The shaft P² is fixed, being riveted to the outer faces of the casing E and serving to bind them together, and upon this shaft the pinion works. The position of the pinion in the frame is near the top of the sash, and so that it meshes with the slotted plate N on the edge thereof.

The pinion P is a shell, and between its faces P⁴ P⁴ is adjusted the spiral spring S, one end of which is secured to the shoulder m on the shaft P² and the other fastened to the pin P', the latter serving also to rivet the faces P⁴ P⁴ together.

L is a metallic lock-plate, having the slot L', by means of which the shaft P², passing through said slot L, is adjusted to move up and down upon said shaft, any lateral movement of said lock-plate being prevented by the guide E⁴, constructed in the casing E. This lock-plate is formed with an offset, as shown by the dotted lines in Fig. 1, and its upper end, as viewed in Fig. 3, is provided with the jaws x x, which lap over the pinion P, the space between said jaws being adapted to receive and hold any one of the pins y y. At the other end of L the rod R is secured, being pivoted at R'. This rod R passes down inside D until the desired point of operating the device is reached, when it is bent at an angle and brought outside D, the end of the rod passing through the slot K' of the plate K, which is secured to the frame, and terminating in a handle or button H. The slot K' terminates at its upper end in the jog K². The pin r, passing through R and resting directly against the inner side of K, is used for the purpose of steadying R.

The strength of the spring S is adjusted to meet the weight of the sash C, and the direction of its coil is such that when the sash is lowered and the pinion meshing with the slotted plate revolves these revolutions wind the spring.

To operate my device when the window is closed, the handle H is raised, carrying the rod R, and the end of the latter is slipped into and caught by the jog K². This movement raises the lock-plate L and frees the pinion P from the clutch of the jaws x x. The

upward movement of the sash is started by hand and the pinion P, meshing with the rack N, revolves. The spring S, whose strength is adjusted to meet and raise the weight of the sash, unwinds, and thus unwinding communicates its movement to the pinion P, which thus continues the upward movement of the sash without further manual effort. When the sash has reached its desired height, the rod R, by means of the handle H, is released from the jog K² and pulled down to the bottom of the slot K', this action lowering the lock-plate, the jaws *x x* of which close down upon the pinion on either side of one of the pins *y y*, and at the same time another pin *y'* is meshed with the plate N, thus locking the sash securely.

The action of the gear meshing with the slotted plate imparts a lateral pressure to the sash, and in order to overcome this and make the movement of the window easy I recess or groove the opposite edge of the sash, as shown at W', and insert the roller W therein, allowing it to project a little beyond the edge of

the sash, and thus bear on the frame. If desired, this bearing-surface may be shod with metal.

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

A raising and lowering device for windows, consisting of the slotted plate N, secured to the edge of the sash, the hollow gear P, contained in the casing E and working on the fixed shaft P² and adapted to mesh with plate N, the spiral spring S, adapted to cause said gear to revolve, the plate L, having the slot L' and the jaws *x x*, and provided with the rod R, combined with the slotted plate K, as and for the purpose hereinbefore described and set forth.

In witness whereof I have hereunto set my hand this 14th day of March, in the year 1890.

ARTHUR W. THOMPSON.

In presence of—

GEO. W. GIBBONS,
GEO. M. BURHAUS.