

UNITED STATES PATENT OFFICE.

WILLIAM SHAW, OF HUDSON, NEW YORK.

IMPROVEMENT IN SASH-FASTENINGS.

Specification forming part of Letters Patent No. 43,608, dated July 19, 1864.

To all whom it may concern:

Be it known that I, WILLIAM SHAW, of the city of Hudson, in the county of Columbia and State of New York, have invented a new and useful improvement in devices for elevating and locking window-sashes, which I call a "double-spring sash lock and elevator;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the drawings annexed, forming a part of this specification, of which—

Figure 1 is an outside view, when closed, showing the sliding thumb-piece, arm, and elbow and catch attached. Fig. 2 is a perspective view representing it in position, a portion of the jamb-casing of the window being removed. Fig. 3 is a view of the interior, the top of the case or box being removed so as to exhibit the springs, pinions with eccentric hub, &c.

Letter A represents the cast-iron case or box which incloses the springs, pinions, &c. B is the eccentric hub or reel; C, bridge-piece or partition; D, cog wheel or pinion; E, spiral spring; F, face or front edge of box A; G, rack in edge of sash; H, jamb-casing; I, dovetail groove to receive and wedge one end of spring E; K, socket or recess cast in inside of box A to secure the other end of spring E; L, same in lower compartment; M, thumb-piece, arm, elbow, and catch combined; N, locking-catch; O, elliptic spring which operates the catch N; *a a'*, arms; *b b'*, projecting guards; *c c'*, notches in sides of arms *a a'*; *s s'*, slots or mortises in shell of box A.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

It consists of a light cast-iron shell or case, A, containing two apartments, or, rather, compartments, each of which, when complete and in position, incloses a spiral spring, E, one above the other, but not in the same plane, a cog wheel or pinion, D, an elliptic spring, O, and an eccentric hub or reel, B, attached to the pinion D near its center, with its dovetail groove I. The bridge-piece C is common to both and useful to both of the compartments. The cogs of pinion D project through openings in the face F, and match into a rack, G, secured in a groove in the adjoining edge of each sash. This rack is let into the groove so

that the ends of the cogs will be nearly, but not quite, flush with the edge of the sash, being a little below. On each of the pinions a hub or reel, B, is cast eccentric—that is, placed a little on one side of the center or axis of the pinion. (See Fig. 3, lower compartment.) Each hub is provided with a dovetail groove, I, to receive one end of a spiral spring, E, which winds around the hub or reel B, the other end being secured in sockets or recesses K in upper, and L in lower, compartment. The pinions are placed on opposite sides of the box or case A, and operate the upper and outer one on the upper sash, and the lower and inside one on the lower sash. The operating medium of this device (represented by the letter M) is the thumb-lever, arm, or elbow and catch, all connected and constituting one piece, and secured to the outside of the case A, one end passing through slots or mortises *s s'* in the sides of the case. On this is the catch N, which is forced between the teeth of pinion D by means of the spring O, placed behind the same. The other pinion in the neighboring apartment is provided with similar arrangements and devices for the same or a similar purpose. The use of the bridge-piece C is to keep the springs E E' in place, to hold the lid-screws of box, and to form stops or bearings for one end of the springs O O'. The size and strength of the spiral springs E E' are made proportionate to the weight of the sash to be elevated.

c c' are notches in the side of the thumb-lever arms *a a'*, which, catching on the edge of the flanges or projecting guard *b b'* when pressed back, hold them so that the sashes may be moved up or down freely without the interference of the catch N, and the same as if no catch were there.

Having described the construction of my sash lock and elevator, I will explain where and in what manner I insert it in the window-jamb. In the jamb, adjoining or opposite to the meeting-rails of the upper and lower sashes, I cut a mortise sufficient to admit the box or case A, so that its face F shall be flush with the jamb. The parting-strip is not severed, but notched on its back side, so as to pass down over the face or edge of the lock and appear perfect, as if no lock were there. The pinions project through the face or front of the lock sufficient to engage the gear in the rack

G on the sashes. The lock being thus inserted in the jamb, (see Fig. 2,) and the upper and lower sashes being provided with the racks G, (see Fig. 1,) bedded into their edges so that the outer ends of the cogs are at least flush with (better be a little below) their edges, on pressing the thumb-piece M' back, so as to disengage the catch N' from the cogs of pinion D', the sash will by the aid of spring E' be elevated with the same ease and facility as with cords and weights. The thumb being removed from the thumb-piece M, catch N engages the cogs on the back side of pinions, and locks the sash at any point of elevation desired. On the opposite edge of light sash I use small friction-rollers.

The above-described device differs from all others, in being a double spring elevator and lock combined, and so arranged and inclosed in case A as to operate on both the upper and lower sash at the same or at different times, as may be required; and I claim for it the following as some of the advantages it possesses over pulleys, weights, and cords: First, it is cheaper; second, it is less liable to get out of order; third, the sashes are more easily removed to be cleaned or repaired; fourth, it is more durable; fifth, it greatly diminishes the

expense of constructing the window-frames, as no boxes are required; sixth, it being a lock as well as elevator, no sash-locks, required with weights and pulleys, need be provided.

I am aware that spiral springs have been employed singly to aid in elevating window-sashes. I do not, therefore, claim this, nor do I claim the use of the rack and pinion for this purpose; but

What I claim, and desire to secure by Letters Patent of the United States, is—

1. Inclosing in case A the two spiral springs E E', when each is attached to the eccentric hub and arranged and combined with their respective pinions D D' substantially in the manner and for the purpose set forth.

2. The case or box A, constructed as set forth.

3. The two sliding catches N N', with their elbows, arms, and thumb-pieces combined, when arranged in connection with the pinions D D', springs O O', and case A, substantially as and for the purpose described.

WILLIAM SHAW.

Witnesses:

HIRAM W. DIXON,
JAS. C. REGUSON.