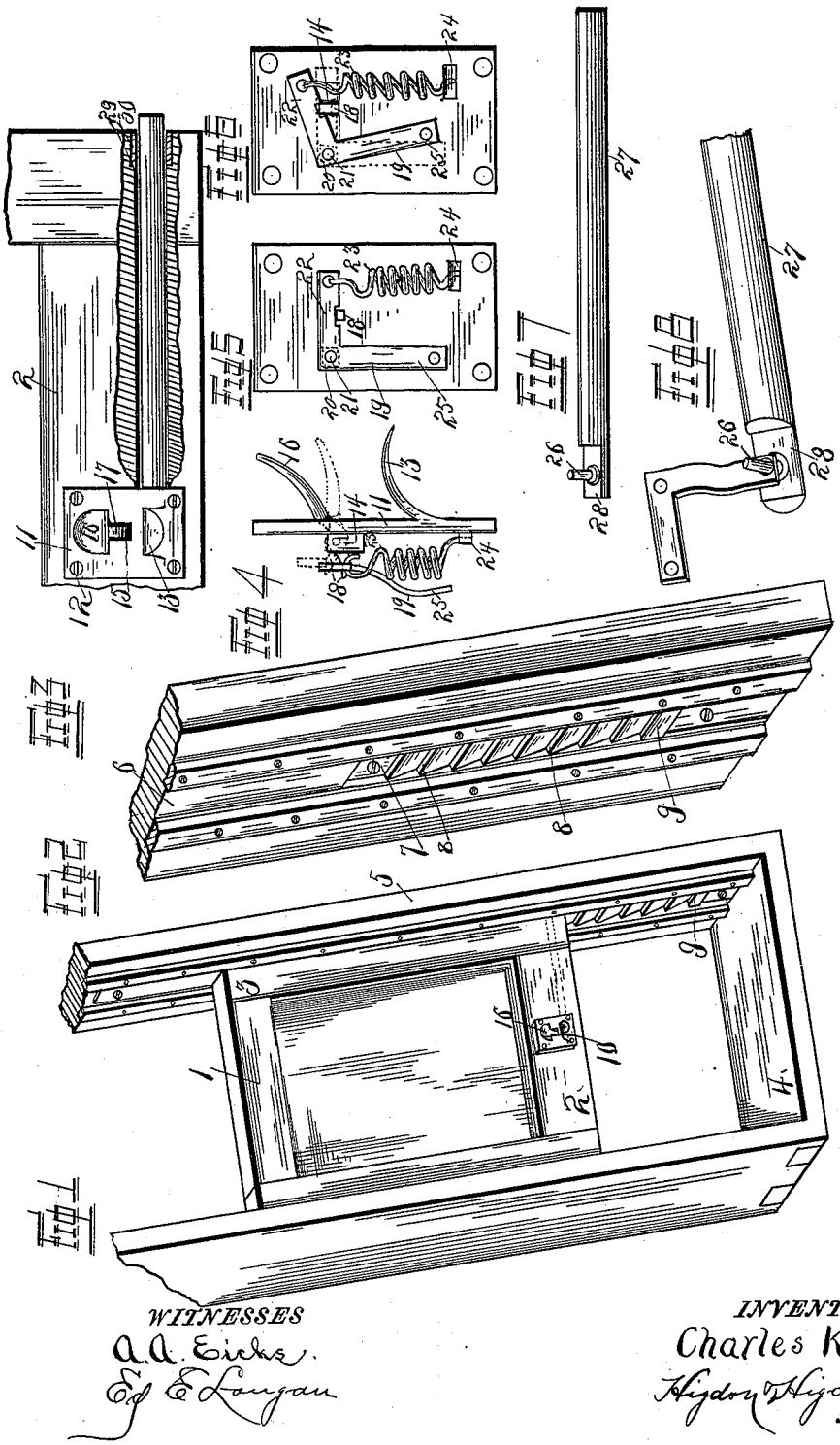
(No Model.)

C. KNAPP.

SASH FASTENER.

No. 463,518. Patented Nov. 17, 1891.



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SASH-FASTENER.

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To all whom it may concern:

Be it known that I, CHARLES KNAPP, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in a Combined Automatic Sash Lift and Lock, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in a combined automatic sash lift and lock; and it consists in the novel arrangement and combination of parts, as will be more fully hereinafter described, and designated in the claims.

In the drawings, Figure 1 is a perspective view of a window-frame with the parts broken away and a sash showing my invention applied thereto. Fig. 2 is a perspective view of one of the jambs of a window-frame with parts broken away, showing a part of my invention applied thereto. Fig. 3 is a front elevation of a sash with parts broken away, showing part of my invention applied to the same. Fig. 4 is a side elevation of the automatic lock detached. Fig. 5 is a rear elevation of the same when the sash is locked down or when the lock is in its normal position. Fig. 6 is a rear elevation of the automatic lock when the same is operated. Fig. 7 is a detail view of a reciprocating locking-rod which I employ in carrying out my invention, and Fig. 8 is a detail view of said reciprocating rod and the lever which reciprocates the same.

The object of my invention is to construct a combined automatic sash lift and lock (the same especially designed for railway-cars) and so devised that the sash can be manipulated and locked with one hand, and also that the sash may be held at any desired elevation.

I will give a further description of the utility and advantages of my invention in connection with a mechanical description thereof.

Referring to the drawings, 1 indicates the sash, which may be made of any suitable and desired construction and of any suitable material, and embodies the ordinary form of a railway or any other car window-sash.

2 indicates the lower horizontal cross-piece of said sash, and 3 one of the vertical pieces thereof.

4 indicates the window-sash frame, and 5 indicates one of the vertical jambs thereof. Located in the vertical groove 6 of said jamb, in which the sash 1 vertically moves, is a bar 7, provided with a series of horizontal shoulders 8, and at its lower portion with a shoulder 9, for the purposes more fully hereinafter described.

Having given a general outline of my invention, I will now proceed to describe the lifting mechanism and also the mechanism which locks the sash down and holds the same at any desired elevation.

10 indicates the lifting and locking mechanism, which I will now proceed to describe in detail, referring to Figs. 4, 5, 6, 7, and 8 for illustration.

11 indicates a rectangular plate, the same being provided with a series of holes or perforations through which screws 12 may pass for securing said plate to the horizontal piece 2 of the window-sash. Cast integrally with plate 11 is a finger-piece 13, which is used for the purpose of elevating the window-sash. Said piece 13 may embody any desired and suitable form. Secured to the rear face of said plate 11 are lugs 14, and said lugs 14 are located in alignment with the lateral edges of an elongated perforation 15, formed in said plate.

16 indicates a thumb-piece, as illustrated in Figs. 1, 3, and 4. Said thumb-piece is provided with a decreased portion 17, which is adapted to pass through the elongated perforation 15 and projects therefrom, constituting an upturned arm 18. Said arm 18 is pivoted to and mounted in between the lugs 14.

19 indicates a right-angular lever, which is pivotally secured on the lug 20 (shown in dotted lines in Fig. 5) and mounted on a pin 21, which passes therethrough and into said lug 20. The arm 22 of said lever is secured to one end of the spiral spring 23 in any suitable and mechanical manner, and the other end of said spring is secured in any suitable and mechanical manner to a lug 24, cast integrally with plate 11. It may be noted in this connection that the horizontal piece 2 is recessed, (which is not illustrated,) so that the lever 19, the spring 23, and the other parts secured to rear face of plate 11 may be located in said recess.

Arm 25 of lever 19 is pivotally mounted on

a stud 26, formed on the reciprocating locking-rod 27. It may be noted in this connection that the lug 26 projects from a decreased portion 28 of the reciprocating locking-rod 27 and also that the operation of lever 19 reciprocates the rod 27. The arm 18 of the thumb-piece 16 normally rests under the arm 22 of lever 19, as illustrated in Figs. 5 and 6, and also that said thumb-piece 16 or, more specifically, the arm 18 thereof actuates said right-angular lever 19. The reciprocating rod 27 passes through or is located in a bore 29, formed in the horizontal piece 2 and the vertical piece 3 of the window-sash and normally projects beyond the edge of said vertical piece 3, as illustrated in Fig. 3, when the sash is down and locked. Said rod 27 is also mounted in a metallic bearing-ring 30, the same being located in the vertical piece 3 of the window-sash.

Having fully described the mechanical parts of my invention, I will now proceed to describe the operation of the same. The parts are constructed and put together in mechanical form substantially as hereinbefore described. In order to fully comprehend the operation of my invention, the reader should first conceive the sash to be down or the window closed. In this position the projecting end of the locking-bar 27 rests directly under and against the shoulder 9 of the bar 7, and in such position the sash 1 can be elevated and the window opened only by a person on the inside and having access to the thumb-piece 16.

I will now proceed to describe the manner of unlocking the sash 1, so that the same may be elevated, and also the method of lifting the same. The operator should first apply the forefinger under the finger-piece 13, and simultaneously with such application he should press down on the thumb-piece 16 with his thumb. By pressing down on thumb-piece 16 the arm 18 thereof will be elevated, and will consequently carry with it in an upward movement the arm 22 of lever 19. The upper movement of arm 22 will throw the arm 25 of lever 19 toward the spring 23, toward the left in Fig. 1 or toward the right in Fig. 6. Said movement of arm 25 will retract the locking-rod 27 to the left, as illustrated in Fig. 1, from under the shoulder 9, and the sash may be then elevated by the operator lifting up on a finger-piece 13. Said sash may be elevated to any desired distance, and when left free the rod 27, or rather the projecting end thereof, will automatically engage with some one of the series of horizontal shoulders 8, and consequently prevent the window-sash 1 from falling down. By changing the construction of the vertical bar 7 (which, however, is not illustrated)—that is, by forming a series of holes therein in lieu of the horizontal shoulders 8—the sash 1 may be locked (or prevented from being moved up or down only by persons on the inside) at any desired elevation. It may be noted in this connection that the locking-rod 27 is horizontally located, as hereinbefore described, and reciprocates in a horizontal direction. The function of spring 23 is to hold the right-angular lever 19 in a position as illustrated in Fig. 5, and when said lever is in said position the locking-bar 27 projects beyond the vertical piece 3, and consequently locks the sash down if the window-sash is closed, or holds it at any desired adjustment or position when the window is open; or, in other words, the elasticity of spring 23 holds down the arm 22, and consequently, through arm 25, pushes the rod 27, so that the end of the same projects under the shoulder 9 or rests on and engages with a series of horizontal shoulders 8.

Having fully described my invention, what I claim is—

A combined automatic sash lift and lock having a plate 11, a finger-piece 13, cast integrally therewith and on the front face thereof, an elongated perforation 15, formed in said plate, lugs 14, cast integrally with the rear surface of said plate, a thumb-piece 16, provided with a decreased portion 17, and an arm 18, pivotally mounted between said lugs 14, a lug 20, cast integrally with the rear surface of said plate, a right-angular lever 19, provided with arms 22 and 25, pivotally mounted on said lug 20, a spiral spring 23, secured to said arm 22 and lug 24, formed on the rear surface of said plate, a reciprocating rocking rod 27, provided with a stud 26, on which arm 25 of lever 19 is mounted, and a bar 7, provided with horizontal shoulders 8 and a shoulder 9, substantially as set forth.

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

CHARLES KNAPP.

Witnesses:
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