May 10, 1932. C. H. LARSON 1,857,294

SASH LOCK

Filed Jan. 17, 1931

Fig. 1.

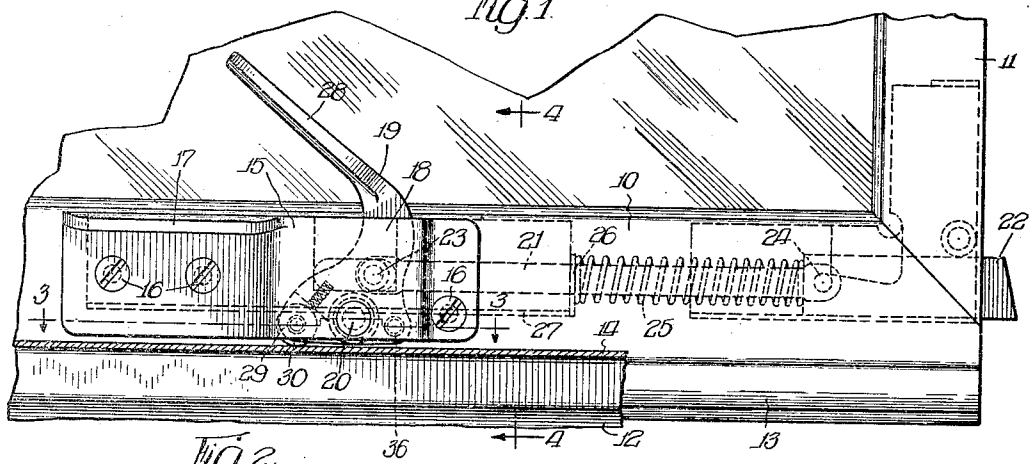


Fig. 2.

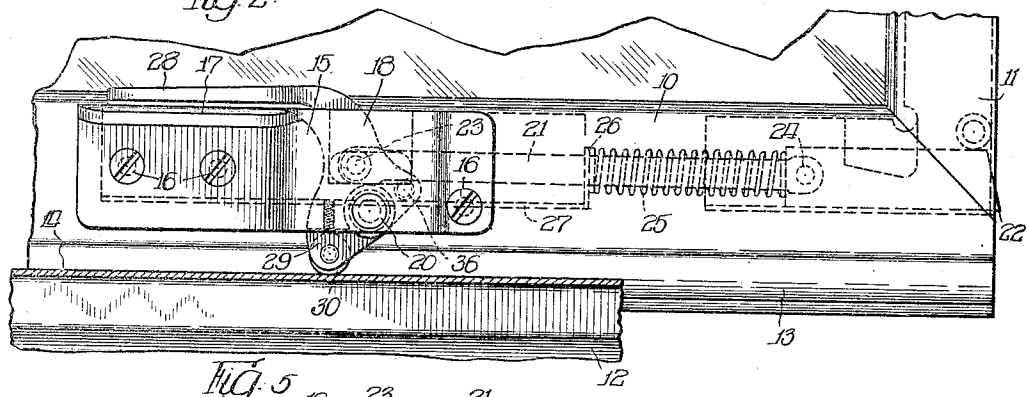


Fig. 5

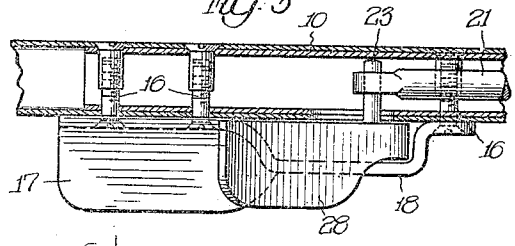


Fig. 6.

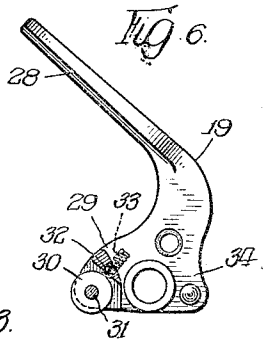


Fig. 4

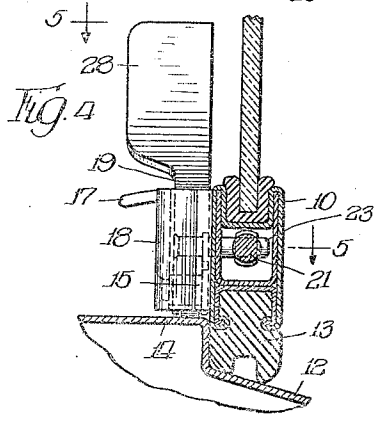
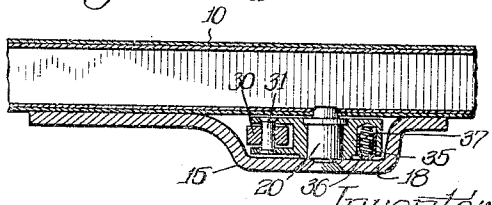


Fig. 3.



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UNITED STATES PATENT OFFICE

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SASH LOCK

Application filed January 17, 1931. Serial No. 509,294.

This invention has to do with sash locks of the so-called starter type, in which the lock is provided with means for forcing the sash up away from the sill.

The object of the invention is to provide an improved lock of the type described which is extremely simple in construction and efficient in operation.

Other more specific objects and advantages of the invention will be apparent to those skilled in the art upon a full understanding of the construction, arrangement and operation of the improved lock.

In order that the invention may be readily understood, one form of the same is presented herein, but it will of course be appreciated that the invention is susceptible of embodiment in other structurally modified forms coming equally within the scope of the appended claims.

In the accompanying drawings:

Fig. 1 is an inside face view of a sash equipped with the lock of the invention, showing the sash in its closed position;

Fig. 2 is a similar view, showing the sash forced up away from the sill under the action of the lock;

Fig. 3 is a horizontal section through the lock, taken on the line 3—3 of Fig. 1;

Fig. 4 is a vertical section, taken on the line 4—4 of Fig. 1;

Fig. 5 is a horizontal section, taken on the irregular line 5—5 of Fig. 4; and

Fig. 6 is a partially broken away side view of the operating lever of the lock.

The lock is shown in the drawings attached to the bottom rail 10 of a sheet metal sash 11. Two of the locks are preferably used on the bottom rail 10, one near each end of the latter, but since both locks are the same except for being reversed, only the right-hand lock need be described. The sill of the associated window frame is provided with an outer portion 12 which engages with a sealing strip 13 on the bottom rail 10 of the sash and an inner portion 14 which coacts with the lock in a manner hereinafter described.

The lock includes a horizontally elongated sheet metal case 15 which is attached by screws 16 to the inner face of the bottom rail 10. The case 15 is provided at its top with a flange 17 which forms a lifting handle, and is provided near one end with an offset portion 18 which forms a recess for the reception of an operating lever 19. The lever 19 is pivoted at 20 to the offset portion 18 of the case adjacent the lower edge of the latter and is connected by a link 21 to a horizontally slidable bolt 22. The link 21, which is pivoted to the lever 19 at 23 and is pivoted to the bolt 22 at 24, is encompassed by a coil spring 25 which is compressed between a flange 26 on a reinforcing channel 27 and the opposed end of the bolt 22. The spring 25 normally maintains the lever 19 and the bolt 22 in the positions shown in Fig. 1.

The lever 19 is provided with an inclined finger piece 28 above the lifting handle 17 of the case 15, and is also provided with a horizontally projecting portion 29 within the offset portion 18 of the case. The outer end of the portion 29 of the lever is bifurcated and contains a small roller 30 which is journaled on a cross pin 31 in a position wherein the lower edge of the roller is disposed slightly below the lower edge of the portion 29 of the lever. The roller 30 is engaged by one end of a small coil spring 32 which is compressed within a recess 33 above the roller. The spring 32 effectively prevents the roller 30 from rattling, without interfering with rotation of the same.

The lever 19 is provided, opposite the portion 29, with a smaller projecting portion 34. The portion 34 of the lever contains a recess 35 which opens toward the offset portion 18 of the case 15 and slidably supports a cup-shaped plunger 36 which houses a compressed spring 37. The spring-pressed plunger 36 serves to maintain the portions of the operating lever above and on the other side of the pivotal axis 20 in resilient contact with the portion 18 of the case and consequently out of contact with the inner face of the bottom rail 10, whereby to eliminate practically all rattle and vibration in the lock.

When the cooperating finger-engaging parts 28 and 17 of the lock assembly are pinched together, the roller 30 which is lo-

cated directly above the horizontal inner portion 14 of the sill, will be forced downwardly and laterally with respect to the latter, thereby camming the sash upwardly into the slightly raised position shown in Fig. 2, from which position the loosened sash may be easily raised any distance desired. When the finger piece 28 is released, the nose of the bolt 22 will spring outwardly into latched engagement with a suitable rack at the side of the sash, the weight of the sash being meanwhile supported by the lifting handle 17.

In the particular lock structure shown, the operating lever 19 is set inwardly some distance from the side of the sash, necessitating the employment of the connecting link 21. In so far as the starter action of the lock is concerned, this particular arrangement has no bearing upon the invention, the lever 19 being directly connected with the bolt 22 if desired, as shown, for instance, in recently issued Levan Patent No. 1,784,147.

I claim:

1. In a sash lock of the starter type, a pivotally mounted operating lever provided with a handle portion and a sill-engaging cam portion, both of which portions are located on the same side of the vertical plane which passes through the pivotal axis of the lever, said handle portion being depressible to cause the cam portion to be forced against the sill.

2. In a sash lock of the starter type, a pivotally mounted operating lever provided with a handle portion and a sill-engaging cam portion, both of which portions are located on the same side of the vertical plane which passes through the pivotal axis of the lever, and a retractible rack-engaging member connected with the lever, said handle portion being depressible to cause the cam portion to be forced against the sill and the member to be withdrawn from the rack.

3. In a sash lock of the starter type, a lock casing for attachment to a sash, an operating lever pivoted to the casing and provided at its upper end with an inclined finger-engaging portion, and a roller journaled on the lower portion of the lever beneath the inclined finger-engaging portion at one side of the pivotal axis for rolling engagement with the sill of an associated window frame upon depression of the finger-engaging portion of the lever.

4. In a sash lock of the starter type, a pivotally mounted operating lever, a roller journaled on the lever for rolling engagement with the sill of an associated window frame, and a spring in contact with the roller for preventing vibratory movement thereof.

5. In a sash lock of the starter type, a pivotally mounted operating lever, a roller journaled on the lever for rolling engagement with the sill of an associated window frame, and a spring compressed between the lever and the roller for preventing vibratory movement of the latter.

6. In a sash lock of the starter type, a lock casing for attachment to the bottom rail of a sash, an operating lever pivoted to the casing, cam means associated with the lever for engagement with the sill of an associated window frame, and spring means for maintaining a portion of the lever in engagement with a portion of the casing, whereby to prevent vibratory movement of the lever.

7. In a sash lock of the starter type, a horizontally elongated sheet metal casing provided with a lifting flange and with an offset portion, an operating lever pivoted to the casing within the offset portion and provided above the lifting flange with an inclined finger-engaging portion, and a roller journaled on a horizontally projecting portion of the lever at one side of the pivotal axis of the latter for rolling engagement with the sill of an associated window frame upon movement of the finger-engaging portion of the lever toward the lifting flange of the casing.

In testimony whereof I have hereunto subscribed my name.

CARL H. LARSON.