July 30, 1968 J. L. MARTIN 3,394,955

CHECK RAIL LOCK

Filed June 20, 1966 2 Sheets-Sheet 1

Fig. 1.

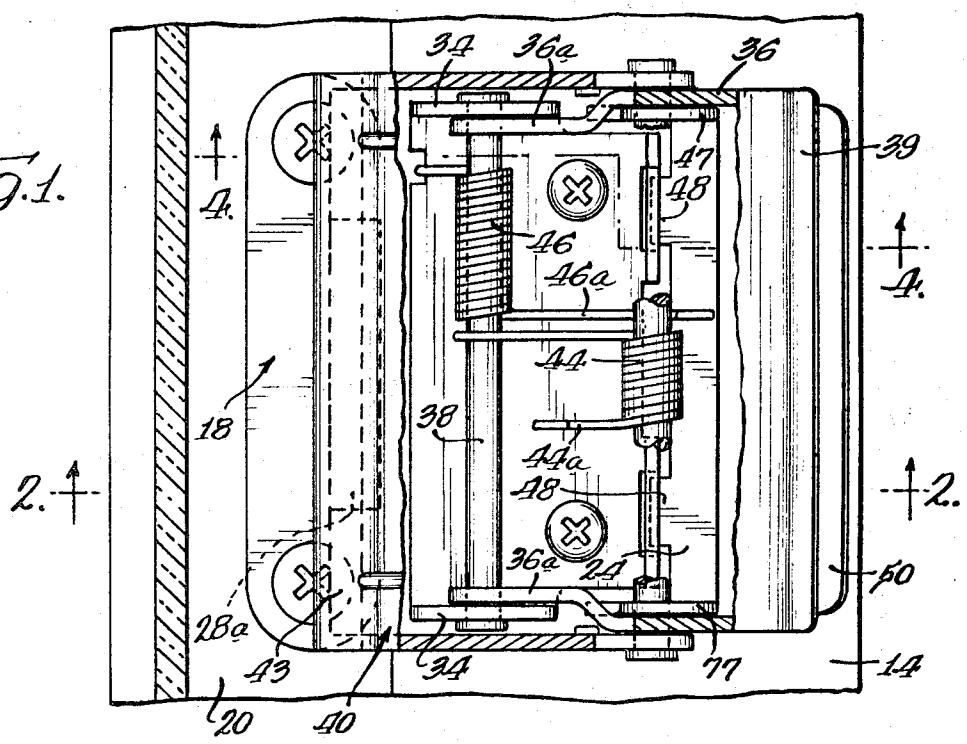


Fig. 2.

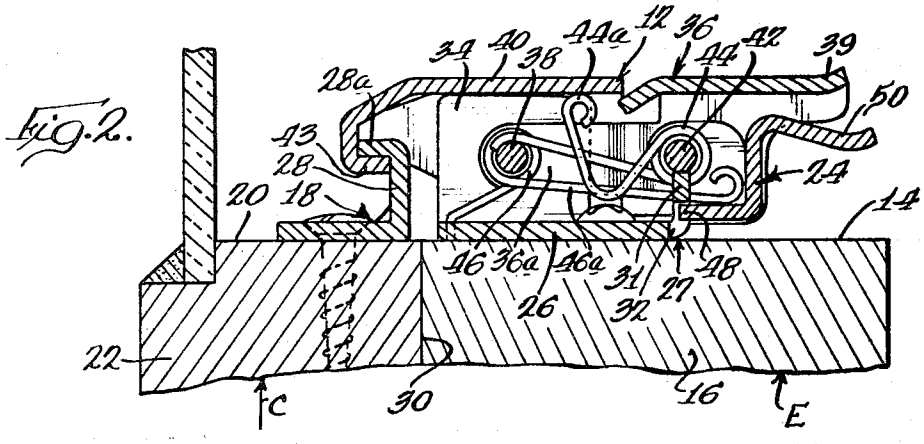
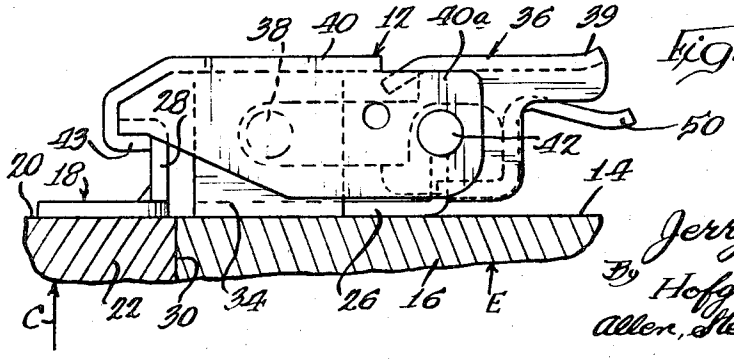


Fig. 3.



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Fig. 4.

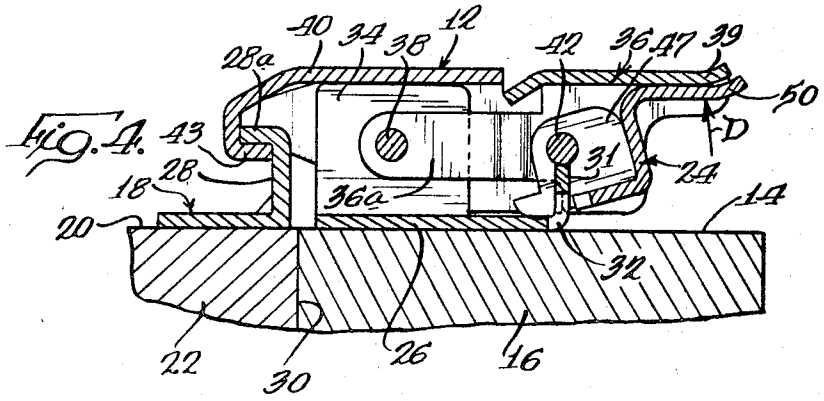


Fig. 5.

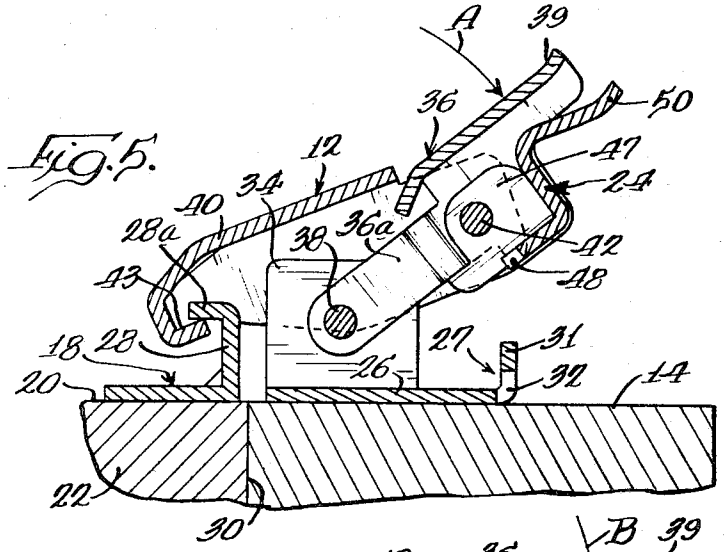
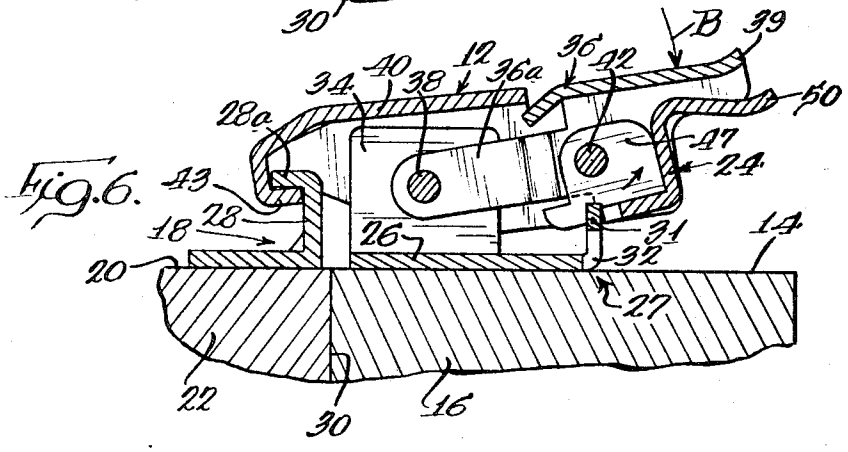


Fig. 6.



United States Patent Office 3,394,955 Patented July 30, 1968

3,394,955

CHECK RAIL LOCK

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Filed June 20, 1966, Ser. No. 558,642
2 Claims. (Cl. 292—113)

ABSTRACT OF THE DISCLOSURE

This invention is a toggle type window lock for double hung windows comprising a catch means on the top surface of the bottom sash of the top window and a latch means on the top surface of the top sash of the bottom window. The latch means is pivoted about a link which is in turn pivoted on the top sash and held in the engaged position by a second catch member.

This invention relates to a toggle type window lock for use with double hung windows having adjacent upper and lower sashes and more particularly to such a window lock having manualy releasably safety lock structure.

A toggle type window lock such as those shown in the patent to Anderson 3,109,675 has as one of its cooperating parts a narrow catch which is conveniently mounted upon a narrow sash rail. The other part of the lock is comprised of a cap or lever portion and associated elements which cooperate with the catch in locking the window down. The cap has a toggle connection between it and a second sash rail to draw the catch toward the second sash to a locked position. This invention pertains to an improvement for such toggle locks and is comprised of a means for retaining the lock in its locked position to prevent the lock from disengaging on relative lateral movement between the two sashes. The retaining means is located to be easily grapsed and released by one's fingers simultaneously with grasping the lever portion of the lock to permit disengagement of the cap from the catch.

It is, therefore, the principal object of this invention to provide a new and improved toggle type window lock.

It is a further object of this invention to provide a manually released retaining means associated with the cap or lever portion of the toggle lock to prevent the lock from becoming unlocked or disengaged on relative movement of the two sashes, said retaining means being easily grasped and released simutaneously with grasping the lever portion of the lock.

It is still another object of this invention to provide a toggle type window lock of the character described wherein the retaining means is located for easy grasping and releasing by the fingers simultaneously with grasping the lever portion of the lock to permit disengagement of the lock.

Other objects and advantages will become readily apparent from the following detailed description taken in connection with the accompanying drawings in which:

FIG. 1 is a plan view of a toggle type window lock embodying the invention in association with a double hung window, with a portion of the cap cut away to facilitate the illustration;

FIG. 2 is a vertical section, taken generally along the line 2—2 of FIG. 1;

FIG. 3 is a side elevation view of the lock in association with a window;

FIG. 4 is a vertical section, taken generally along the line 4—4 of FIG. 1, with the retaining member pivoted to its raised position to permit disengagement of the lock;

FIG. 5 is a view of the lock similar to that of FIG. 4 with the lock in a first position of initial engagement; and

FIG. 6 is a view of the lock of FIG. 5 in a sequential

position just prior to becoming wholly engaged and retained.

While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will herein be described in detail an embodiment of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment illustrated. The scope of the invention will be pointed out in the appended claims.

As shown in FIG. 2, the toggle type window lock of the present invention is comprised of four major cooperating parts, namely, a latch means in the form of a split cap, generally designated **12**, which with its associated elements is mounted to the top surface of an upper horizontal sash rail **14** of the lower sash **16** of a double hung window, a first catch means indicated generally at **18** which is adapted for mounting on the lower sash rail **20** of the upper sash **22** of the double hung window, a releasable retaining means indicated generally at **24** pivotally mounted to the split cap **12**, and a mounting base plate **26** having a second catch means indicated generally at **27** cooperating with the retaining member **24** to prevent disengagement of the window lock on relative movement of the two sashes.

The first catch **18** extends along the lower sash rail **20** and has an upright portion **28** terminating in an outer hook portion **28***a* extending horizontally away from the lower sash **16**. The first catch is adapted to be affixed to the lower rail **20** of the upper sash **22** with the upright portion extending upwardly from the bottom rail adjacent the inner face **30** of the upper sash **22**.

The mounting base plate **26** is adapted for mounting on the upper rail **14** of the lower sash **16** across from the first catch **18** and has an upright portion **31** extending along the upper rail **14** of the lower sash **16**. The upright portion **31** has spaced slots **32** therethrough which form the second catch means for receiving the retaining member **24** (as hereinafter described). Integral with the base member are upright arms **34** rising from opposite ends of the base. Upon the upright arms **34** is pivotally mounted a rear cap part, generally designated **36**, of the spit cap **12**, as at the pivot shaft **38** extending transversely between arms **34**. The rear part has a manually engageable exposed lip **39** for easy grasping to pivot the latch means or split cap **12** about shaft **38**. Extension **40***a* (FIG. 3) of a forward cap part **40** are pivotally attached to the middle of the rear cap part **36** as at pivot shaft **42** extending transversely beneath the rear part to provide a toggle arrangement similar to that disclosed in the aforementioned patent. The rear cap part **36** has arms **36***a* extending beneath the front cap part **40** and pivoted on shaft **38**. Along its forward edge, the forward cap part **40** has a transverse locking hook portion **43** which engages the hook portion **28***a* of the first catch means **18** to hook the window sashes together when the window is closed. Torsion spring arm **44***a* of torsion spring **44**, wound around shaft **42**, forces the forward cap part **40** upwardly away from the catch **18**. Simultaneously therewith, torsion spring **46**, wrapped around shaft **38**, forces the rear cap part **36** downwardly upon the mounting base **26**. Spring arm **46***a* of torsion spring **46** forces the retaining member **24** in a locked position, as shown in FIG. 2.

It is to be understood that although in the embodiment shown the torsion springs **44** and **46** are mounted on pivot shafts **42** and **38**, respectively, their positions can be otherwise changed without effecting the operation of the lock. Also, the novel retaining member **24** of this invention (as subsequently described) may be employed with an integral cap and link type latch means, as shown in the various embodiments in the aforemen-

tioned patent, as well as with the split cap form of toggle lock shown in the drawings herein. The same toggle type leverage is afforded in either form.

The locking operation of a toggle type lock as above described is accomplished by grasping the lip **39** of the rear cap part **36** of the split cap **12**, tilting the cap forwardly about pivot shaft **38** to permit the cap locking hook **43** to be extended over the catch hook **28***a*. Then by applying downward pressure upon the rear cap part **36**, as seen by the arrow A in FIG. 5, cap locking hook **43** and catch hook **28***a* become engaged in a first position of locking, as illustrated in FIG. 5. A further downward pressure on the rear cap part in the direction of arrow B, FIG. 6, causes the forward cap part **40** to become seated upon the upright arms **34** of the mounting base plate **26** and draws the catch **18**, and the sash **22** to which it is mounted, inwardly toward sash **16**. This locking engagement causes the opening between the adjacent sashes to become tightly closed thereby making tampering with the lock from without practically impossible and precludes the entrance of dust or other elements from entering therethrough.

Up to this point, the structure described is generally old and movement of the upper sash **22** in the direction of arrow C, FIGS. 2 and 3, relative to lower sash **16** can cause the toggle lock to become disengaged as the forward cap part **40** is pivoted about shaft **42** extending transversely beneath cap **36** which is pivoted about shaft **38** which is fixed to the lower shash by mounting plate **26**, thus moving cap **36** opposite to arrows A and B, and thus allowing cap **40** to become disengaged from catch **18**.

The movement of lower sash **16** in direction of arrow E, FIGS. 2 and 3, relative to upper sash **22** can cause the toggle lock to become disengaged as the forward cap part **40** is seated upon upright arms **34**, pivoted about shaft **42** beneath cap **36** which is pivoted about shaft **38** that is fixed to lower sash by mounting plate **26**, thus extensions **40***a* are cammed upward moving cap **36** in opposite direction to arrows A and B allowing cap **40** to become disengaged from catch **18**. The retaining member **24** of this invention is designed to prevent such disengagement of the lock.

The releasable retaining member **24** extends beneath the lip **39** of the rear cap part **36** and has ears **47** pivotally mounted to shaft **42** under the rear cap part. The retaining member pivots about shaft **42** from a retaining position (FIG. 2) wherein forwardly extending tongues **48** (FIG. 1) of the retaining member extend into slots **32** in the upright portion of the mounting base plate **26** to provide coacting lock means between the mounting plate and the retaining member. In this locked position, there can be no relative movement between the sashes because the locking hook portion **43** of the split cap is rigidly locked to the first catch **18** secured to the upper sash and the retaining member **24** is rigidly locked to the mounting base plate **26** secured to the lower sash. Spring arm **46***a* urges the retaining member into its locked position. The retaining member **24** has a grasping flange **50** entending rearwardly from ears **47** and underlying lip **39** of the rear cap part **36** and is easily grasped with the lip in a manner best illustrated in FIG. 4. Initial squeezing in the direction of arrow D (FIG. 4) causes the retaining member **24** to pivot about shaft **42** against spring **46** and move tongues **48** out of slots **32** so that the cap can be elevated from the mounting base in a direction opposite to arrows B and A in FIGS. 6 and 5, respectively, to disengage the locking portion of the forward cap part from the first catch **18**. It can be seen that the retaining member is conveniently located for easy grasping and releasing by one's fingers simultaneously with grasping the lip **39** of the rear cap part **36** of the split cap **12** to permit sequential releasing and disengaging the lock in a single motion.

I claim:

1. A lock for a double hung window having a bottom sash with a top rail and a top sash with a bottom rail, said lock including: a first catch adapted to be affixed to the bottom rail of said top sash; a latch means having a locking portion selectively engageable with said first catch and a toggle connection connecting the latch means to the top rail of said bottom sash, said toggle connected latch means being pivotable to cause said locking portion to be engaged with said first catch to draw said first catch and top sash toward the bottom sash to a locked position and to cause said locking portion to be disengaged from said first catch to permit one or both of the windows to be moved with respect to each other, said latch means including an easily graspable exposed lip to facilitate pivoting the latch means; a second catch adapted to be affixed to said top rail of the bottom sash adjacent said latch means a releasable member pivotally secured to said latch means and selectively engageable with said second catch to retain the locking portion of said latch means in its locked position with said first catch, said releasable member having a transverse flange underlying and spaced from the exposed lip on said latch means, said flange being movable toward said lip on simultaneous grasping of said flange and said exposed lip, the movement of said flange toward said lip causing disengagement of said releasable member to sequentially disengage said releasable member from said second catch and disengage the locking portion of said latch means from said first catch and means urging said releasable member into engagement with said second catch.

2. A toggle type window lock for use with a double hung window having an upper and a lower sash in planes offset from each other and top and bottom rails respectively in abutting relation when the window is closed, comprising, a first catch adapted for attachment to said bottom rail, a latch means for selective engagement with the first catch, a mounting plate for the latch means adapted for attachment to said bottom rail, said latch means having a two-part cap lying generally in a plane normal to the planes of said upper and lower sashes with one part having a locking portion for engaging said first catch, the cap second part extending beneath said one part and pivotally mounted on said mounting plate, the cap second part having a shaft extending transversely therebeneath and pivotally mounting said one part thereon, said second part extending to the rear of said one part and providing a manually engageable lip for movement of said cap, a releasable retaining member pivoted on said shaft and having a flange extending rearwardly from said shaft and spaced from and underlying said lip, coacting lock means on said mounting plate directly beneath said shaft and said retaining member including interengaging tongue and slot means, said tongue and slot means having interengaging surfaces lying in planes generally perpendicular to forces through said shaft tending to move the cap about its pivot point on said mounting plate, and means urging said coacting lock means into locking engagement so that said flange on said releasable member may be squeezed toward said lip against said urging means to sequentially release said coacting lock means, elevate said two-part cap from said mounting plate and release the locking portion of said cap from said first catch.

References Cited

UNITED STATES PATENTS

3,109,675	11/1963	Anderson	292—109
3,237,978	3/1966	Swanson	292—113

MARVIN A. CHAMPION, *Primary Examiner.*

J. R. MOSES, *Assistant Examiner.*

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,394,955 July 30, 1968

Jerry L. Martin

It is certified that error appears in the above identified patent and that said Letters Patent are hereby corrected as shown below:

In the heading to the printed specification, line 4, "Truth Toll Co." should read -- Truth Tool Co. --.

Signed and sealed this 16th day of December 1969.

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents