Feb. 25, 1969 I. H. PHILLIPS 3,429,071

SASH LOCK FOR REMOVABLE SASH WINDOWS

Filed April 26, 1967

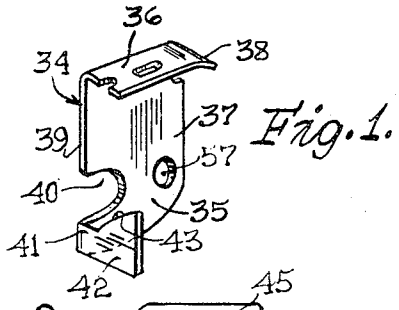


Fig. 1.

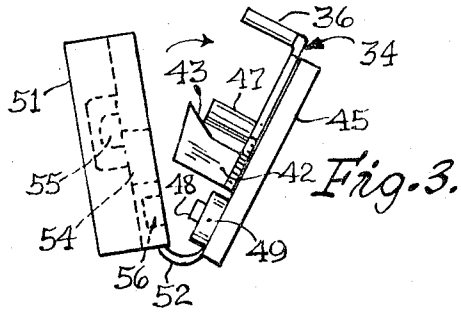


Fig. 3.

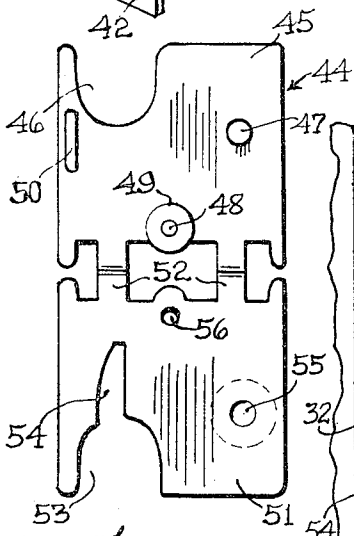


Fig. 2.

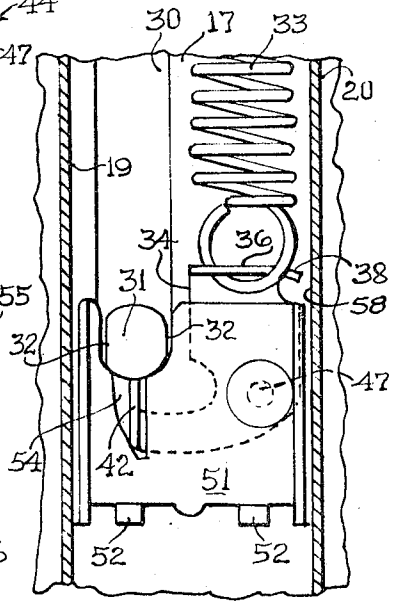


Fig. 4.

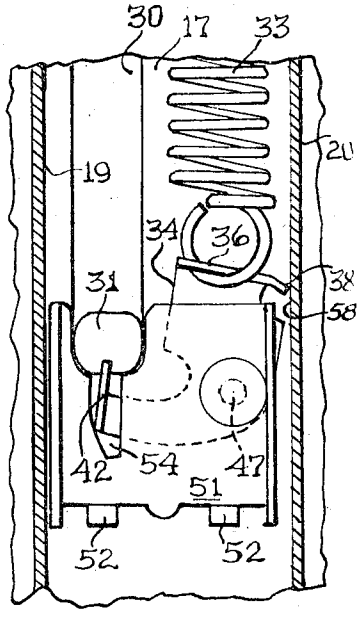


Fig. 5.

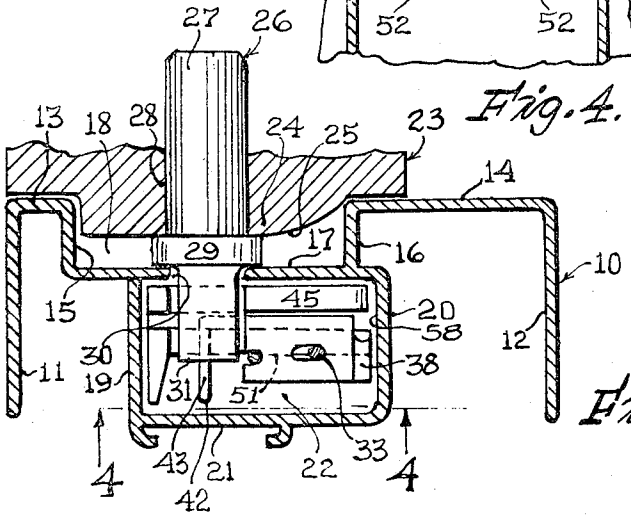


Fig. 6.

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SASH LOCK FOR REMOVABLE SASH WINDOWS

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Int. Cl. E05d 15/22, 13/12, 17/00

ABSTRACT OF THE DISCLOSURE

A spring sash balance for removable sliding sash windows having an automatic sash balance locking member actuated by the window when the same is to be removed or pivoted relative to the mounting sash.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction and in which:

FIG. 1 is a perspective view of the locking member of the invention.

FIG. 2 is a plan view of the lock carrier in its unassembled condition.

FIG. 3 is an end elevational view showing the lock and lock carrier in their preassembled relation.

FIG. 4 is a fragmentary detailed side sectional view showing the invention in an unlocked position.

FIG. 5 is a side elevational detailed view showing the invention in its locked position, and

FIG. 6 is a fragmentary detailed sectional view showing the invention in relation to a window sash and mounting channel.

Referring to FIG. 6 there is shown in section a mounting channel **10** of the type that is adapted to be yieldably mounted on the vertical walls defining the window opening. It being understood that to either side of the window opening there will be complementary mounting channels of the construction hereinafter described.

The mounting channel **10** of FIG. 6 includes edge walls **11** and **12** which terminate into front wall sections **13** and **14**, respectively. Formed in the front wall sections **13** and **14** by recessed side flanges **15** and **16**, which flanges terminate into a base wall **17** is an elongated window sash frame guideway **18**. Mounted to the rear of the base wall **17** are side walls **19** and **20** interconnected with a rear wall **21** so as to form a retaining chamber **22**, which extends throughout the elongated length of the mounting channel **10**.

A vertical edge portion of a window frame **23** provides a tongue **24** which projects into the window sash frame guideway **18** so as to be slidably guided therein. The tongue **24** of the window frame **23** provides an arcuated cam face **25** which bears upon the corner line of junction between the front wall **14** and side flange **16**, as seen in FIG. 6.

Carried by the window frame **23** is a pivot and supporting pin **26**. This pin has an insert end **27** which is projected into a suitable aperture **28** formed in the window frame **23**. It also provides a circular collar **29** which is of a diameter greater than an elongated slot **30** formed in the base wall **17** of the mounting channel **10**. The collar **29** is adapted to be disposed between the side edge of the window frame **23** and the base wall **17** as shown in FIG. 6. The pin **26** provides a trigger end **31** which has its opposite side edges flattened as at **32** so that the trigger end **31** may be projected into the slot **30** as shown in FIGS. 4 and 6.

All of the above identified structural elements are well-known in the art and make up no part of the present invention except for their functional relationship thereto.

As is recognized in the art of removable and tiltable

window sashes, it is required that the sash balancing member, which in the present instance is indicated as an expendable coil spring **33**, be locked in place during the tilting or removing of the window frame from the sash mounting. To accomplish this required function a sash balancing lock member is provided. In the present instance the lock **34** comprises a metallic member having a substantially thin, flat body **35**, the top edge portion of which is angularly bent to provide a top flange **36**. The top flange **36** has an extension carried at one end normally bent out of its longitudinal plane, and extending beyond the rear edge **37** of the body **35** of the lock **34**, forming a locking contact element **38**. The front edge **39** of the body **35** is recessed as at **40** and provides an elongated leg **41** which has its free end bent to extend laterally therefrom so as to lie in a plane transverse to the plane of the top flange **36**. This angular end forms a trip finger **42** having a cam face **43** tapered downwardly and in the direction of the leg **41** as seen in FIGS. 1 and 3.

A lock carrier **44** may be of a one-piece molded construction, preferably formed from a plastic material. The carrier **44** will include a front wall **45**, the top edge of which adjacent to one side is recessed as at **46**, for a purpose hereinafter made apparent. The front wall **45** has formed on one face thereof a perpendicularly extending pivot post **47** as well as a locking stud **48** carried by a spacer bearing **49**. A spacer bar **50** is provided adjacent one side edge of wall **45**, and lies in substantial horizontal alignment with the pivot pin **47**. The rear wall **51** of the carrier **44** is connected to the front wall **44** by two spaced apart bendable stirrup members **52**. This rear wall **51** is provided with a recess **53** which also includes a guide slot **54**. The face of the rear wall **51** which is adapted to be bent into confronting relation with the one face of the front wall **45** provides circular recesses **55** and **56** which will receive the pivot pin **47** and mounting stud **48**, respectively, in a manner shown in FIG. 3.

The lock **34** has an aperture **57** formed in the body **35** thereof adapted to have journaled therein the pivot pin **47** when the carrier is assembled in the manner described and as shown in FIG. 3. When the lock **34** is so assembled the trip finger **42** will project into the guide slot **54** formed in the rear wall **51** of the carrier **44** as shown in FIGS. 4 and 5.

When the lock **34** is mounted on to the carrier **44** the spring **33** will have one end connected to the flange **36** of the lock **34** as seen in FIGS. 4 and 5. When the whole window assembly is completed the pivot and support pin **26** will project through the slot **30** formed in the mounting channel **10** and be inserted in the recesses **46** and **53** formed in the front wall **45** and rear wall **51** of the lock carrier **44**, and by the weight of the window will engage and depress the trip finger **42** so that the same is moved into the slot **54** formed in the rear wall **51** of the carrier **44** as seen in FIG. 4. This position of the lock **34** is normally against the tension of the counter-balancing spring **33** which has a tendency to pivot the lock **34** in a clockwise direction about the pivot post **47** provided by the lock carrier **44** as viewed in FIGS. 4 and 5.

When the window is to be tilted and removed the cam face **25** formed by the window frame **23** will bear against the mounting channel **10** and resiliently move the same laterally away from the window unit much in the manner as set forth in United States Letters Patent 2,828,513 issued Apr. 1, 1958.

As the window is tilted the pin **26** will likewise be rotated through its longitudinal axis such that it will assume the position shown in FIG. 5 where, as the pin **26** has rotated the mounting channel **10** has moved laterally thereof, permitting the insert end **31** of such pin **26** to move down the cam face **43** of the trip finger **42**, permitting the lock **34** to be pivoted in a clockwise direction

about pivot post **47** under tension of the counter-balancing spring **33** until the locking contact element **38** of the top flange **36** frictionally engages the inner surface **58** of the wall **20** of the chamber **22** formed on the mounting channel **10**. This condition of the structure is clearly shown in FIG. 5.

Under the locked condition as hereinbefore described the window may be removed from the window opening while the lock carrier **44**, lock **34**, and counter-balancing spring **33** remain in their position longitudinally of the mounting channel **10**.

When the window is reinserted into the sash the pin **26** will be caused to once again engage the trip finger **42** so that under the weight of the window the lock **34** will be pivoted into its unlocked position as viewed in FIG. 4.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A lock for a sash balancing member of a tiltable, removable window having a pivotal supporting pin removably mounted in a sash lock carrier slidably contained in one of a pair of resiliently separable opposed channel sashes with a locking member pivotally mounted in the lock carrier and connected to one end of the sash balancing member and pivoted in one direction by the force thereof to latch the lock carrier against slidable movement through the channel sash wherein the improvement comprises:

(a) a trip finger carried by and extending perpendicularly to the locking member and in longitudinal alignment beneath the pivotal supporting pin, the weight of which when supported on said trip finger acts to counterweight the pivoting force of the sash balancing member on the locking member and pivots the same in an opposite direction, and

(b) means provided by said trip finger over which one end of the pivotal supporting pin laterally moves as it is axially rotated when the window is tilted so as to be displaced from engagement with the locking member while supported by the lock carrier, permitting the locking member to be pivoted in one direction by the force of the sash balancing member into locking contact with the channel sash.

2. A lock for a sash balancing member as defined by claim **1** wherein said means over which one end of the pivotal supporting pin laterally moves comprises a cam surface extending inwardly and downwardly in the direction of the outer end of the pivotal supporting pin.

3. A lock for a sash balancing member as defined by claim **1** wherein the sash lock carrier is of a one-piece construction providing complementary sections foldable into spaced confronting relation and between which is pivotally mounted the locking member, each of said sections providing an aligned recess forming a seat for the free end of the pivotal supporting pin, one of said recesses formed in one of said sections having open communication with an elongated slot through which movably projects said trip finger.

4. A lock for a sash balancing member as defined by claim **3** wherein said means over which one end of the pivotal supporting pin laterally moves comprises a cam surface extending inwardly and downwardly in the direction of the outer end of the pivotal supporting pin, with said cam surface movable through said elongated slot formed in one of said sections.

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U.S. Cl. X.R.

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