April 24, 1962 J. F. JONES 3,030,671

AWNING TYPE WINDOWS AND LOCKING MEANS THEREFOR

Filed March 22, 1960 2 Sheets-Sheet 1

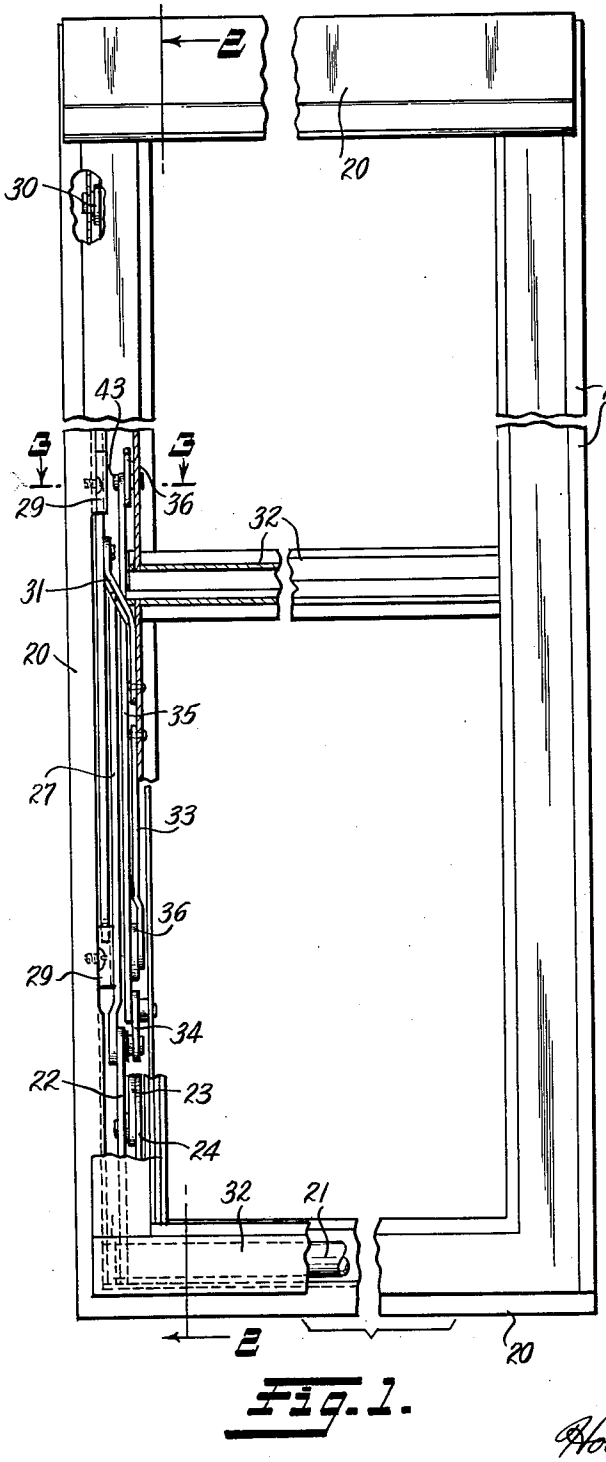


Fig. 1.

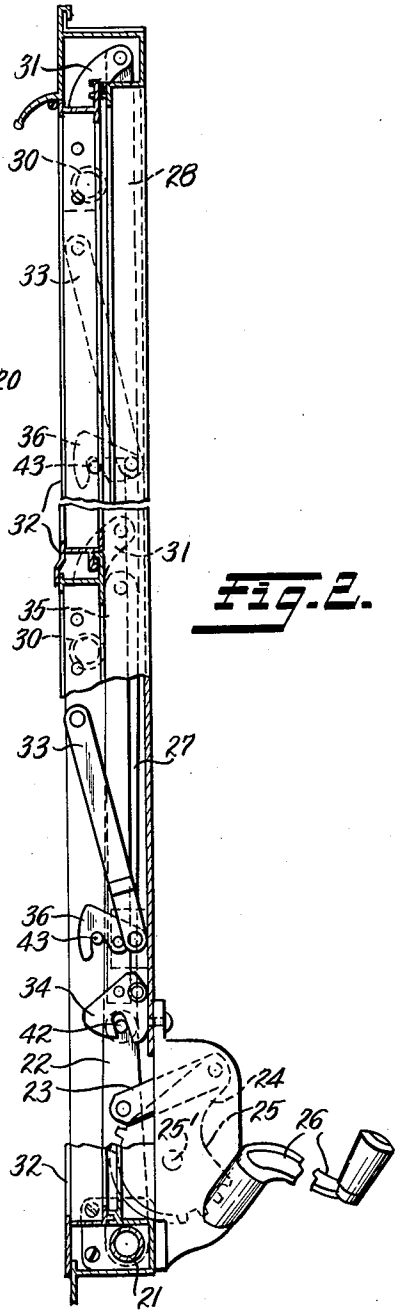


Fig. 2.

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Fig. 4.

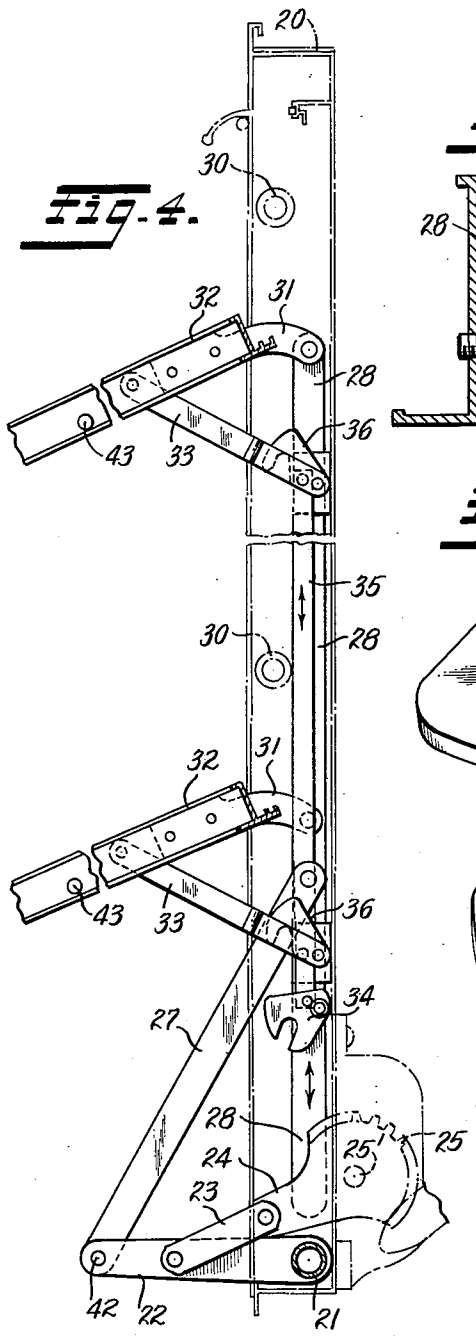


Fig. 3.

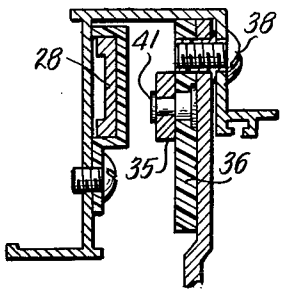


Fig. 5.

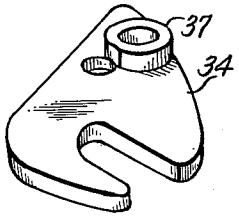


Fig. 6.

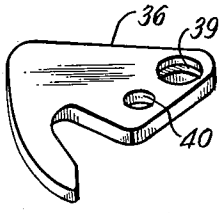
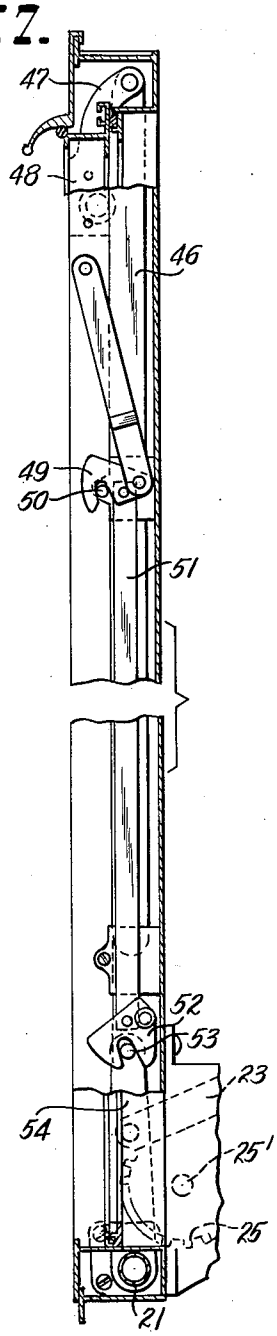


Fig. 7.



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3,030,671
AWNING TYPE WINDOWS AND LOCKING MEANS THEREFOR

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3 Claims. (Cl. 20—42)

The present invention relates to improvements in windows and more in particular to awning type windows having locking means thereon.

Heretofore awning type windows have not had any means for locking them in a closed position, or if locking means have been provided the pins received in the locking means have not protruded through said means, but have been received in channels or grooves in the side of the lock, which have not functioned satisfactorily because any variation in the louvers have allowed the pin to be released from the groove.

It is an object of the present invention to provide locking means for louver and awning type windows each locking means receiving one single pin in an opening cut into the locking means so as to receive the pin at some point remote from the end thereof.

It is a further object of this invention to provide an awning type window in which the various louvers are simultaneously actuated by a manually operated device that will automatically lock each louver in a closed position when the louver has reached that position.

The various features of novelty which characterize this invention are pointed out with particularity in the claims annexed to and forming part of this specification. For a better understanding of the invention, however, its advantages and specific objects obtained with its use, reference should be had to the accompanying drawings and descriptive matter in which have been illustrated and described a preferred embodiment of the invention.

FIGURE 1 is a fragmentary front elevational view, partly in section, of an awning type window construction of the present invention.

FIG. 2 is a fragmentary vertical sectional view substantially on line 2—2 of FIG. 1 with vents of the awning type window in closed position.

FIG. 3 is an enlarged fragmentary horizontal sectional view on line 3—3 of FIG. 1.

FIG. 4 is a fragmentary vertical sectional view similar to FIG. 2 with the frame structure shown in phanton lines for clarity and the vents shown in open position.

FIG. 5 is an enlarged perspective view of a pivotal locking cam of the present invention.

FIG. 6 is an enlarged perspective view of a pivotal lock of the present invention.

FIG. 7 is a fragmentary vertical sectional view similar to FIG. 2 of a modification showing a one vent window type construction.

Referring more in particular to the drawings, a jamb forming member **20**, shown in FIG. 1, preferably made of aluminum, conceals within the lower part thereof a crank shaft **21** which is rigidly connected to the crank link **22** which is operated by the drive link **23** connected to the center of the crank link **22** and to the driven arm **24** which is operated by the gear device **25**, shown in FIG. 4. This gear device is operated by the manually rotatable crank **26** shown in the closed position in FIG. 2 and shown in the open position in FIG. 4. The crank link **22** has pivoted to the outer end thereof a connecting link **27**. This connecting link is rotatably attached to the slide bar **28** which is held by the slide bar bearings **29** near the bottom thereof and **30** near the top thereof. These bearings are preferably of the nylon roller type, and allow the bar to move upon the actuation of the manually operated crank **26**. Attached to this slide bar **28** are the vent hinges **31**, **31**, connected to the top of each vent **32**, **32**. A link **33**, **33** is pivotally connected to the vent at a point remote from the upper end thereof and to the jamb **20**. A lower cam **34** is pivotally mounted on the jamb member **20**, and has connected to the side thereof the locking bar **35**. For each vent there is a locking latch **36**, **36**, also pivotally mounted on the jamb **20** and pivotally mounted on the locking bar **35**. The cam member **34** is shown in detail in FIG. 5 and comprises a boss **37** having a bore therein to receive a screw held pivot member connecting it to the jamb **20**. The locking latches **36** are shown in detail in FIG. 6 and have two openings therein, the first opening **39** receiving the pivot member **38** which is a threaded bushing at each vent. A second opening **40** is held by means of a rivet **41** in pivotal relation to the locking bar **35**. Each of these latches **36** as well as the cam member **34** is preferably made of nylon or some other type of non-corrosive plastic material and each has a slot cut therein to receive a pin. This allows the pin to project through and beyond both the cam member and the latch members so that when the window width is short the pin will project through the holding member, that is, the cam or latch member, a little further, and will not bind as it would if the receiving slot were only a grooved recess in the side of the holding member. If the window width is long the pin will still have engagement with the slot which would not be true if the receiving opening were a recess in the side of the latch or the cam member.

There is a pin **42** projecting from the pivot point of the crank link **22**. There are lower pins **43**, **43** on each of the vents **32**, **32**.

While the operating mechanism is described and illustrated on one side of the window frame only, there is a similar mechanism operating on the other side and the two are connected with the crank shaft **21** and operate simultaneously.

The modification shown in FIG. 7, shows a picture window type installation where there is only one vent and this operates on the same principle as the modification shown in FIGURES 1 to 6 inclusive. The vent **46** is held in position by means of the vent hinge **47** which is attached to a slide bar **46** and is held in a closed position by the locking latch **49** which receives and retains a pin **50** on the side of the vent. The locking latch **49** is operated by the locking bar **51** which in turn is controlled by the cam **52** which receives and retains the pin **53** which is attached to crank link **54** which is operated by the same type of mechanism as shown in FIGS. 1 to 4 inclusive.

When the vents are in closed position, as shown in FIGS. 1 and 2, and the manually rotatable crank is operated, the gear device **25** rotates about its pivot point **25'** and the arm **24** moves toward the outside of the window. This forces the drive link **23** downwardly and moves the crank link **22** outwardly and rotates the shaft **21** operating the mechanism on the other side of the window. When the crank link **22** moves downwardly the pin **42** which is retained within the lower cam **34** moves that cam outwardly raising the locking bar **35** and releasing the locking latches **36**, **36** from the pins **43**, **43** on each side of each vent. This allows the vent to move outwardly as the slide bar moves downwardly within its bearing due to the downward force applied by the connecting link **27** to the slide bar. This moves the top of each vent downwardly, the pin **43** having been released, and the vent pivoting on the link **33** moves outwardly.

When the process is reversed and the vents closed due to the bar moving upwardly the pin **42** is received within the cam **34** which moves the locking bar downwardly and

pulls the locking latches 36, 36 downwardly over each of the pins 43, 43 on each side of each vent.

While in accordance with the statutes there has been illustrated and described the best form of the embodiment of the invention now known, it will be apparent to those skilled in the art that changes may be made in the form of the apparatus disclosed without departing from the spirit of this invention as set forth in the appended claims, and that in some cases certain features of this invention may be used or changed without a corresponding use of other features.

What is claimed is:

1. In a window construction comprising in combination: a frame, a plurality of vertically swinging vents pivotally mounted in said frame, and means for causing said vents to swing including a slide bar slidably mounted in said frame and pivotally connected to each vent, a crank link pivotally connected to said slide bar, and crank means carried on said frame and pivotally connected to said crank link for swinging said crank link to actuate said slide bar, the improved locking means which comprises a cam mounted on said frame and having pivotally connected thereto a vertically moving latch bar, one separate locking latch for every vent mounted on said frame being pivotally connected to said latch bar and operated thereby, a pin mounted on said crank link which imparts motion to said cam and is received in and protrudes through a slot in said cam and holds the same in closed position, a second pin on each vent which is received in, protrudes through, and is held by a slot in each separate locking latch.

2. A window construction comprising in combination: a frame, at least one vertically swinging vent mounted in said frame, a vertically moving slide bar mounted in the side of said frame, each vent being pivotally connected at its top to the slide bar for actuation, and pivotally connected at a point intermediate the ends of said vent to the frame, a crank means mounted at the bottom of said frame for manual operation, said crank means operating said slide bar through a crank link; a cam mounted on said frame and having pivotally connected thereto a vertically moving latch bar, at least one separate locking latch on said frame being pivotally connected to said latch bar and operated thereby, a pin on said crank link which imparts motion to said cam and is received in and protrudes through a slot in said cam and holds the same in closed position, at least one second pin mounted on a vent which is received in and protrudes through and is held by a slot in each separate locking latch.

3. A window construction comprising in combination: a frame, a plurality of vertically swinging vents mounted in said frame, a vertically moving slide bar mounted in the side of said frame, each vent being pivotally connected at its top to the slide bar for actuation, and pivotally connected at a point intermediate the ends of said vent to the frame, a crank means mounted at the bottom of said frame for manual operation, said crank means operating said slide bar through a crank link; a cam mounted on said frame and having pivotally connected thereto a vertically moving latch bar, one separate locking latch for every vent mounted on said frame being pivotally connected to said latch bar and operated thereby, a pin mounted on said crank link which imparts motion to said cam and is received in and protrudes through a slot in said cam and holds the same in closed position, a second pin on each vent which is received in and protrudes through and is held by a slot in each separate locking latch.

References Cited in the file of this patent

UNITED STATES PATENTS

2,893,728	Tucker	July 7, 1959
2,950,510	Tucker	Aug. 30, 1960
2,967,334	Abelson	Jan. 10, 1961