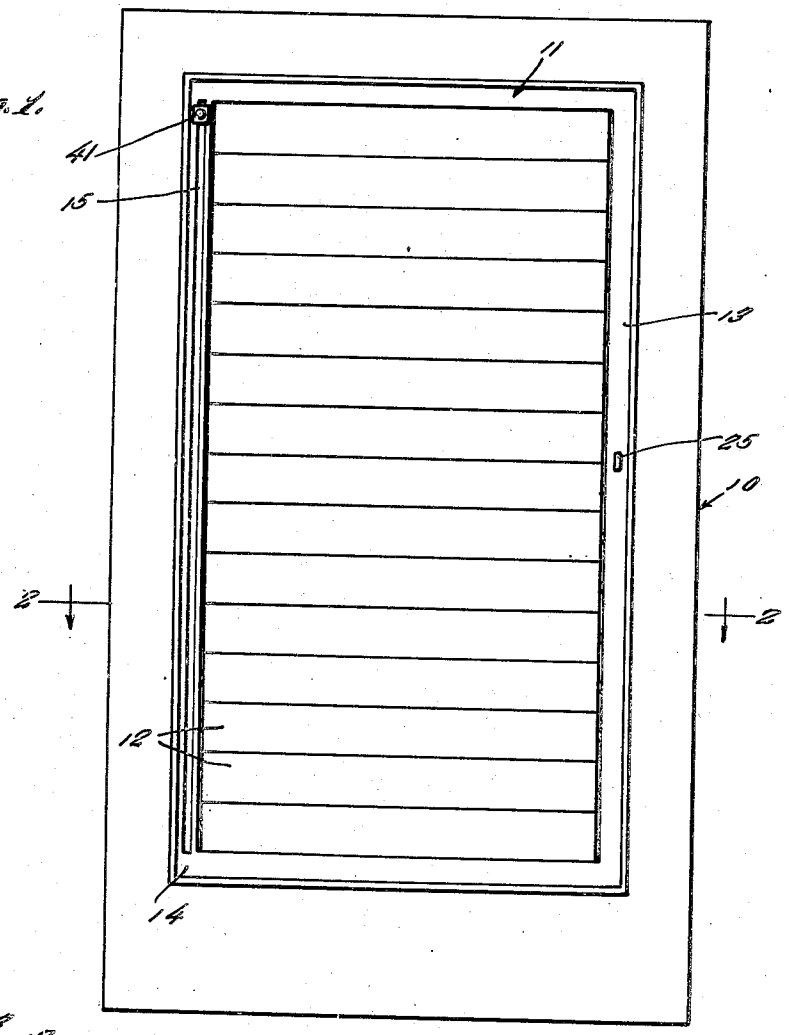
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ADJUSTABLE AND CONTROLLABLE VENTILATOR MEANS

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Fig. 1.



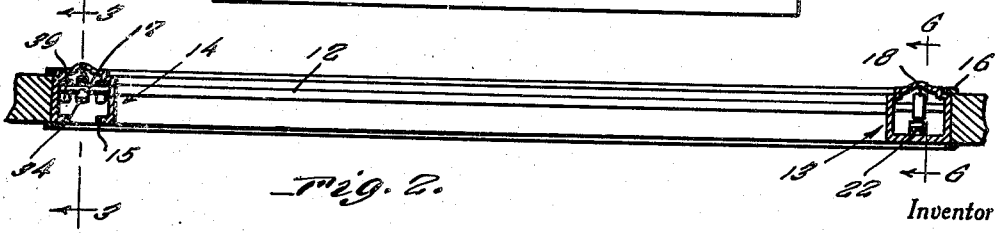


Fig. 2.

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Fig. 3.

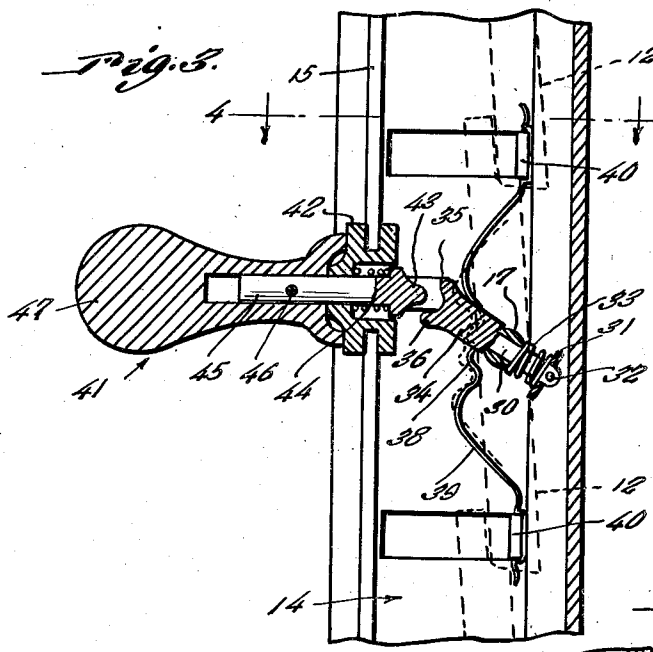


Fig. 5.

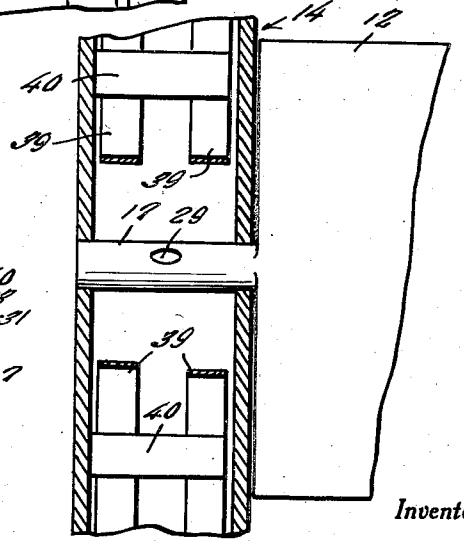
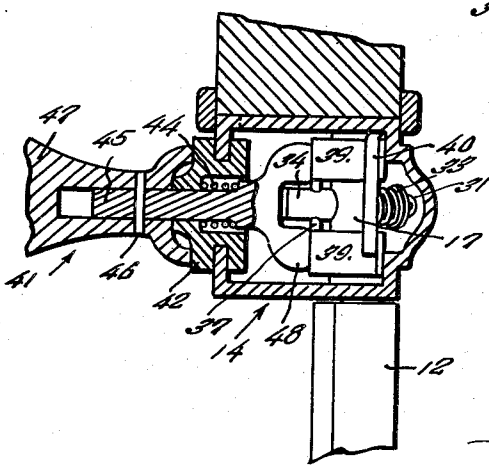


Fig. 4.



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Fig. 6.

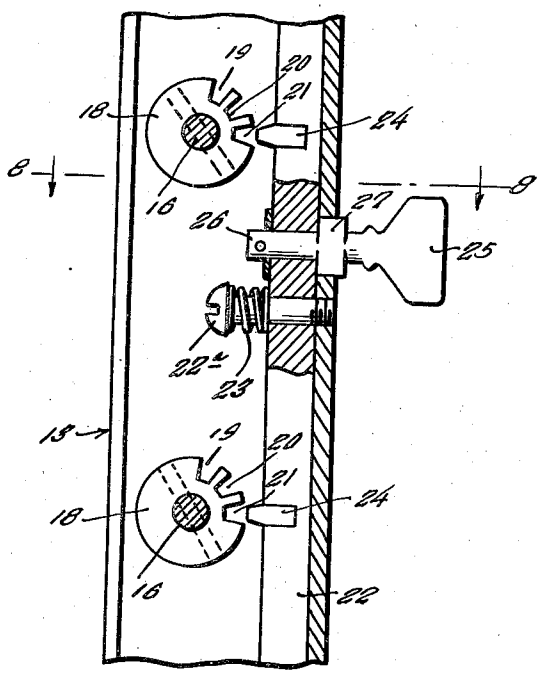


Fig. 7.

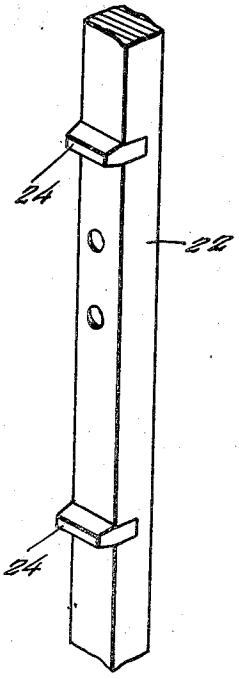


Fig. 8.

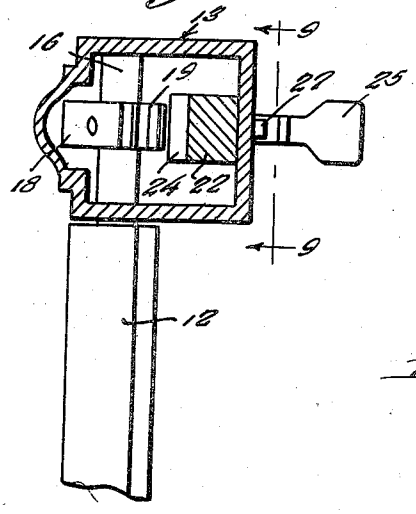
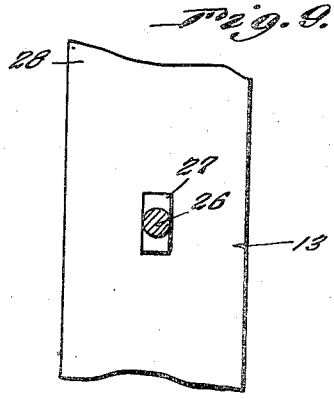


Fig. 9.



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UNITED STATES PATENT OFFICE

2,165,351

ADJUSTABLE AND CONTROLLABLE VENTILATOR MEANS

Harry Valentine Derveaux, Miami Beach, Fla.

Application January 6, 1938, Serial No. 183,736

3 Claims. (Cl. 98—110)

The present invention relates to a structure such as may be broadly alluded to as an improved ventilator construction wherein the specific structural improvements pertain to an oscillatory louver or shutter having means at opposite ends for coordinated adjustment and locking purposes.

I am, of course, aware, that it is not new to mount one or more louvers or slats in a support for oscillation. It is perhaps appropriate to say therefore, that the invention pertains to a structure including one or more oscillatory shutters having progressively or intermittently operable means at opposite ends, the means at one end serving for rotary regulation and the means at the opposite end to fix or retain the shutter in the position to which it has been adjusted.

One structural feature of the invention has to do with the adoption and use of a hand controlled slidably mounted trigger unit, this being cooperated with detent equipped trip and actuating means on the journal of the shutter, whereby to provide what is hand controlled substantially automatic oscillatory tilting of the shutter for variable ventilating purposes.

A further feature of the invention is directed toward the mutually cooperable fastener or retaining means associated with the opposite end journal of each shutter or louver, the means at opposite ends being so coordinated as to possess matching and mutual dependent relationship.

Other features and advantages will become more readily apparent from the following description and the accompanying illustrative drawings.

In the accompanying drawings, wherein like reference numerals designate like parts throughout the views:

Figure 1 is a front elevation of what may be generally called a window having multiple slat or louver ventilating means, the features of this invention being associated therewith to open and close the louvers.

Figure 2 is a horizontal section on the plane of the line 2—2 of Figure 1.

Figure 3 is an enlarged fragmentary vertical section which may be said to be on the plane of the line 3—3 of Figure 2.

Figure 4 is a horizontal section occurring approximately on the plane of the line 4—4 of Figure 3, parts being in section and elevation.

Figure 5 is a fragmentary detail section and elevational view showing the spring means and journal at the end of one of the slats or louvers.

Figure 6 is a view similar to Figure 3, the sections being vertically disclosed and approximately on the plane of the line 6—6 of Figure 2.

Figure 7 is a detail perspective view.

Figure 8 is a horizontal section which may be said to be taken on the plane of the line 8—8 of Figure 6.

Figure 9 is a section on the line 9—9 of Figure 8.

By way of introduction to the detailed description it is to be pointed out that the features forming the chief novelty to be hereinafter claimed are such as to be restricted to use to a single oscillatory slat, louver or shutter. In the drawings, for sake of more appropriate illustration, the inventive concept is illustrated as being embodied in a full-sized window construction having a plurality of slats.

In the drawings, in Figure 1, the numeral 10 may appropriately identify a door frame, a window frame or the like having an inner special adapter frame 11 to accommodate the adjustable slats or louvers 12. As shown to advantage in Figure 2 the vertical hollow stiles of the frame structure 11 are differentiated by the numerals 13 and 14. Thus these parts serve as casings for the mechanism forming the adjusting and retaining means for the various slats. It will be observed that the vertical stile or casing 14 has in its outer face a longitudinally elongated slot 15. The corresponding face of the other stile 13 is imperforate except for the point which serves to accommodate an operating knob hereinafter described.

In order to simplify the description it is to be pointed out that the slats 12 are of appropriate dimensions and construction. Each slat has supporting and adjusting trunnions or journals at opposite ends. The journal at one end as shown to the right in Figure 2 is denoted by the numeral 16. The journal at the opposite end is differentiated by the numeral 17. A collar 18 is fixedly mounted on the journal 16 as brought out to advantage in Figures 6 and 8. The peripheral portion of this is formed with three notches of predetermined positions and shape. These notches constitute keeper seats and are distinguished by the numerals 19, 20 and 21. Confined in the casing and cooperable with the various notched collars will be found an operating bar or rod 22. This is slidably mounted on an attaching bolt 22^a as shown to advantage in Figure 6. The bolt is surrounded by a coiled return spring 23 which serves to maintain the substantially wedge shaped detents or keeper lugs 24 out of engagement with the keeper notches 19, 20 and 21. These detents 24 are simultaneously moved into and out of engagement with the keeper notches by a single control button. The button 25 is of appropriate construction and has its shank portion 26 suitably fastened to the detent control bar 22. The shank is also provided with a block-like retention element 27 slidable in a correspondingly shaped slot in the web 28 of the casing.

In order to give utility to this single button controlled locking or retaining means, particularly the selectively usable keeper notches 19, 20 and 21, it is necessary to provide adjusting means of the form, or an equivalent style, shown to advantage in Figures 3, 4 and 5.

Referring first to Figure 5, it will be observed that the apertured trunnion is here provided with a hole 29 to accommodate a slidable actuating pin 30 (see Figures 3 and 4). This pin mounted in the journal, is in effect a trip or rocker arm for the trunnion. One protruding end thereof is provided with a washer 31 held in place by a pin 32, there being a coiled spring 33 interposed between the washer and trunnion and surrounding the trip pin 30. The opposite protruding end of the pin is formed into a head 34 and this terminates in cams 35 and 36. Extending at right angles, and located on diametrically opposite sides of the head 34 are detents 37 and these are selectively engageable with the three retaining bends 38 in the longitudinally bowed flat springs 39. As brought out to advantage in Figures 3 and 5 the free ends of the retaining strips 39 are suitably anchored and held in place as indicated at the points 40. The strips are arranged in parallelism and the head 34 sweeps in an arcuate path between said strips 39. Consequently, we have here a selectively adjustable trip or resilient latch means designed to oscillate the slat so that it may occupy a full closed position, a full open position, or a part open position, depending on visibility and ventilation required.

A manually slidable trigger unit denoted generally at 41, is employed for the purpose of rocking the adjusting trip device just described. This unit 41 is slidably mounted in the slot 15. Hence, it may be moved to a position to adjust just one of the slats or more than one, depending on the circumstances required. That is to say, it is possible to maintain some of the slats closed, to open others full and others part-way. Consequently, the device 41 is in the nature of an adjusting shoe and it in fact, includes an appropriate slide or shoe 42 slidable in the slot. The part 42 is provided with a socket to accommodate the spring pressed trigger. The head of the trigger 43 is located in the casing to coact with the aforementioned cams 35 and 36. The retractable spring means 44 cooperates with a socket in the slide 42. The shank of the trigger 45 is secured by a pin 46 in the hand grip 47, the latter part being located on the exterior of the casing for convenient use. As shown in Figure 4, the trigger includes a yoke whose fingers 48 ride in contact with the convexed and bent portion of the aforementioned retaining strip 39.

In operation the invention functions as follows: By sliding the device 41 from the upper position seen in Figure 1 down in the slot 15 to a position opposite the trip means as shown in Figure 3 it is obvious that the nose 43 of the releasing trigger is engaged with one of the cams 35 or 36, as the case may be. Thus, the downward sliding movement of this part serves to oscillate the trip pin and the trip pin in turn adjusts the trunnion 17 on which it is mounted. The detent pins 37 engage in the retention seat 38 in the retaining strip 39 to hold the trunnion in the position to which it is thus moved. When the desired degree of adjustment is attained to move the slat to either part open or full open position, the knob 47 is grasped and pulled out so that any further sliding movement of the device 41 enables the trip 43 to swing clear of the lugs 35 or 36. This device 41 may be operated either downwardly or upwardly to open or close the slat through the instrumentality of the trip means thus described and constructed.

The coordinated locking means on the opposite end can be brought into play to lock the slat into position to which it has been moved. All that is necessary is to force the knob 25 in. This presses the strip 22 in against the spring 23 and engages the lug with one of the aligned keeper notches 19, 20 or 21 as the case may be. When the trip 22 is forced in the button or knob 25 is turned so as to dislodge the retaining element 27 from its slot in the casing and to place it crosswise of the slot on the interior of the casing.

It is thought that the description taken in connection with the drawings will enable a clear understanding of the invention to be had. Therefore, a more lengthy description is thought unnecessary.

While the preferred embodiment of the invention has been shown and described, it is to be understood that minor changes coming within the field of invention claimed may be resorted to if desired.

I claim:

1. In a construction of the class described, a relatively stationary frame, a pair of complemental ventilating slats mounted for oscillation in bearings in said frame, said slats having superposed parallel trunnions at corresponding ends, duplicate rocker devices carried by said trunnions, said rocker devices constituting trip and regulating means, a relatively movable slide on said frame, and means on said slide for selectively engaging said rocker devices, whereby to individually open and close said slats in the manner and for the purposes described.

2. In a construction of the class described, a relatively stationary frame, a plurality of horizontally disposed ventilating slats mounted for oscillation in said frame, the frame on one side including a hollow vertical slotted casing, the ends of the slats adjacent said casing being provided with oscillatory trunnions, a rocker device and selectively usable retaining means therefor cooperable with each trunnion, a single operating unit including a slide mounted in said slot, a handle for operating the slide and a trigger for selective releasable and operating coaction with the desired rocker device, whereby to permit one or more of the slats to be closed, fully opened or partially opened as the case may be.

3. In a construction of the class described, a frame including a hollow casing, a slat including a journal mounted for oscillation in said casing, a pin mounted on said journal and disposed at right angles thereto, said pin including a head having outstanding detents and terminal cam elements, a pair of spaced parallel resilient retaining strips mounted in the casing, said head being operable between said strips, said strips being provided with selectively usable retaining bends to accommodate said detents, the outer wall of said casing having a slot, a slide mounted in said slot, a spring pressed trigger-forming plunger carried by said slide, said plunger having its inner end fashioned to provide a trip for actuating and releasable engagement with said cams in the manner and for the purposes described.

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