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OPERATOR UNIT FOR LOUVRED CLOSURES

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Fig. 1.

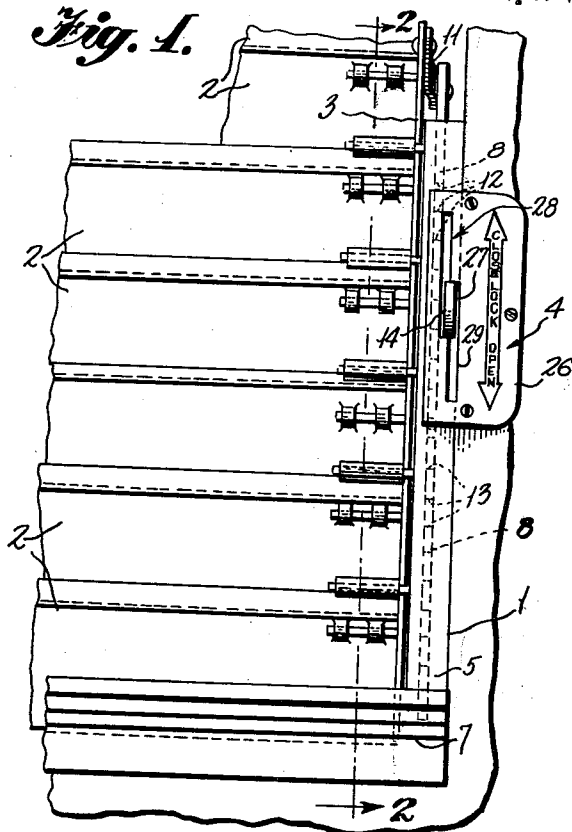


Fig. 2.

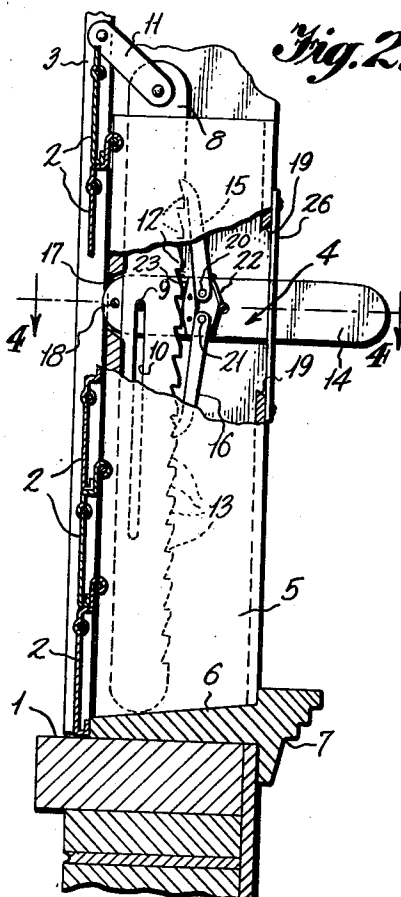


Fig. 3.

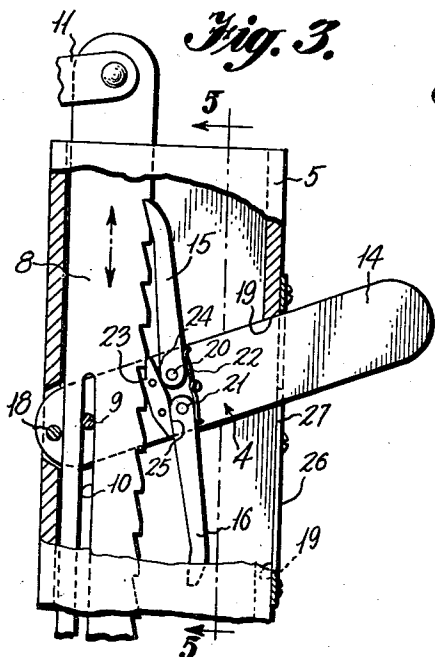


Fig. 5.

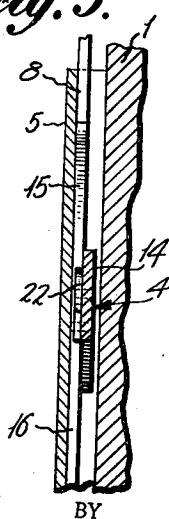
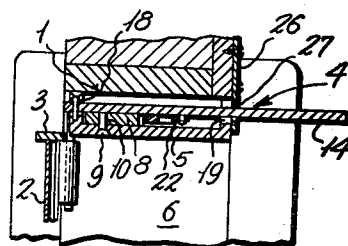


Fig. 4.



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OPERATOR UNIT FOR LOUVRED CLOSURES

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4 Claims. (Cl. 268—96)

This invention relates to operators for jalousies, or other movable louvre or slat type closures, and particularly to such devices of the locking type.

Operating devices for opening, closing and locking jalousie louvres in positions of adjustment have been proposed, but they have involved complicated mechanisms which are expensive and subject to breakage or becoming inoperative with slight use.

The principal object of the present invention is to provide an operating device for jalousies and the like which operates upon a simple ratchet principle, which will be capable of opening or closing the louvres to any desired degree and locking them in that position so that they cannot be moved from outside the window or other opening.

A more specific object of the invention is to provide such a device in which the mechanism will be locked whenever the operating lever is brought to neutral position, and yet the operating lever may be moved freely in either direction from the neutral position.

Another object is the provision of such a device which may be manufactured and sold as a unit for attachment to existing jalousies or shutters.

Other objects of the invention will become apparent from the following description of one practical embodiment of the invention, when taken in conjunction with the drawings which accompany, and form a part of, this specification.

In the drawings:

Figure 1 is a partial front elevation of a jalousie installed in a window with the operator of the present invention in place;

Figure 2 is a vertical section through the jalousie showing the operator mounting channel broken in section to illustrate the operative parts, and is taken on the line 2—2 of Figure 1;

Figure 3 is an enlarged detail view of a portion of Figure 2 showing the operator moved to another position;

Figure 4 is a horizontal section taken on the line 4—4 of Figure 2; and,

Figure 5 is a vertical section taken on the line 5—5 of Figure 3.

In general, the invention consists of an operator unit for jalousies, or other like movable louvre device, which may be connected to the control rod of the jalousie and, by means of a lever and ratchet arrangement will move the louvres to desired position and lock them against further movement.

Referring to the drawings in detail, there is shown a window opening 1 in which a jalousie having tiltable louvres 2 is mounted. All of the louvres are connected to a control rod 3 for simultaneous tilting when the control rod is moved vertically. The jalousie may be of any standard construction, and forms no part of this invention.

The operator 4 is housed within a mounting channel 5 which may be secured to the side stile of a window frame in any desired manner. The channel will be mounted with its open face adjacent the stile so that its central web will form a protective cover for the working parts of the unit. The channel will usually be mounted with its bottom 6 resting upon the window sill 7 for convenience and accessibility, and the bottom is inclined to fit against the upper surface of the sill.

Within the channel 5, a control link 8 is mounted for vertical movement. The control link is mounted close

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to one side flange of the channel and is guided in its movement by means of a guide pin 9, secured to and projecting inwardly from the central web of the channel, which projects into a longitudinal slot 10 in the control link. This link may be connected to the control rod 3 of the jalousie in any desired manner, such as by the connector 11, so that movement of the control link will be imparted to the jalousie control rod to tilt the louvres. The control link 8 has ratchet teeth along its side edge remote from the side wall of the channel. These teeth are in two groups positioned above and below the longitudinal center of the link, the teeth of the upper group 12 being oppositely inclined from those of the lower group 13. The teeth of group 12 have their abrupt faces downwardly to be engaged by an upwardly moving dog, and group 13 have their abrupt faces upwardly to be engaged by a downwardly moving dog.

The control link is caused to move by an operating lever 14 which carries two pivoted dogs 15 and 16. The side wall of the channel adjacent the control link is notched, as at 17, to receive the end of the control lever and a pivot pin 18 passes through the channel wall and the lever to pivotally mount the lever. The opposite end of the lever projects through an opening 19 in the other wall of the channel to serve as a handle by which the device may be operated.

The upper and lower dogs, 15 and 16 respectively, are pivoted to the operating lever at equal distances from the pivotal point of the lever and at equal distances on opposite side of the lever center line by means of the pivot pins 20 and 21. The dogs are of equal length and each is provided with a tooth-engaging portion at its free end. Dog 15 is adapted to engage the teeth of group 12 when the lever is moved upwardly, and dog 16 engages teeth of group 13 when the lever is moved downwardly. The dogs are urged toward tooth-engaging position by means of a spring 22 which is attached to the lever 14 at its middle and has its projecting arms bearing upon the backs of the dogs.

A stop is provided on the operating lever to limit the pivotal movement of the dogs toward the control link. The stop is so arranged that both dogs may be in engagement with the teeth of their respective groups when the control lever is in a horizontal position, but each dog is prevented from further inward movement. The stop is in the form of a lug 23 which is fixed to the face of the operating lever and projects into the path of movement of the dogs. The lug has oppositely inclined faces 24 and 25 which have the same angle as the inner edges of the respective dogs when in engagement with the teeth, and the lug is positioned so that the inclined faces are in contact with the dogs when the lever is in a horizontal position. By reason of this construction both of the dogs are in position to be operated when the lever is in its neutral, or horizontal position but only one dog will be in engagement with the teeth when the operating lever is moved from its neutral position. If the operating lever is moved upwardly, for example, the stop lug 23 will move with it and the lower inclined face 25 will hold the lower dog 16 at the same angle it assumed when the operating lever was in neutral, which will cause that dog to move out of engagement with the teeth. The upper inclined face 24 of the lug will have shifted in the opposite direction so that the upper dog 15 is free to remain in engagement with the teeth of the control link. Consequently the upward movement of the lever will move the control link upwardly to shift the position of the jalousie louvres. When the operating lever is brought back to a neutral position the upper dog will slide freely over the inclined faces of the teeth and become engaged with a lower tooth to further lift the control link upon the next upward movement of the operating lever. During this entire operation the lower dog is held out of engagement with the teeth. It will be obvious that the operation is reversed when the lever is moved downwardly from the neutral horizontal position.

In order to lock the devices in positions of adjustment, an escutcheon plate 26 is provided, secured to the frame of the window, and overlying the opening 19 in the wall of the channel. A guide opening 27 is formed in the plate to receive the operating lever 14 and control its

3 movement. The opening has two passages 28 and 29 which are positioned side by side and overlapping one another lengthwise by a distance equal to the width of the operating lever so that the overlapping portions form a cross-over to permit the operating lever to be moved along either guide passage and to shift over from one to the other when in its neutral or horizontal position. The guide passages in the plate are so arranged that the operating lever will assume a position intermediate the two when in neutral position. In other words, the lever will lie in the cross-over, half in one passage and half in the other. The ends of the overlapping guide passages will prevent the lever from moving either upwardly or downwardly. The lever has sufficient resiliency so it can be moved either to the right or left to lie in either one guide passage or the other. When moved to the left, as viewed in Figure 1, the lever is free to move upwardly in the guide passage 28 to lift the control link. When moved to the right, as viewed in Figure 1, the lever is free to move downwardly in the guide passage 29. When the lever is brought to neutral position and released it will immediately assume its normal position intermediate the two guide passages and be locked against movement in either direction.

It is believed that the operation of the unit has been described sufficiently in the foregoing to make its use quite clear, but it should be noted that by moving the control lever into the guide passage 28 of the escutcheon plate and employing a repeated up and down motion, the control link may be moved upwardly any amount to obtain a desired setting of the jalousie louvres. In the same movement of the operating lever into the passage-way 29 and rocking it up and down will lower the control link and consequently move the jalousie louvres in the opposite direction.

While in the above one practical embodiment of the invention has been disclosed, it will be understood that the specific details of construction which have been described and illustrated are merely by way of example and the invention may take other forms within the scope of the appended claims.

What is claimed is:

1. An operator for closures having a plurality of tiltable louvres connected to a control rod for simultaneous movement comprising, a housing, a control link mounted for sliding movement in said housing, a connector coupling said control rod and control link for similar movement, an operating lever pivotally mounted in said housing and having an inoperative neutral position perpendicular to said control link, said control link having oppositely disposed groups of ratchet teeth above and below its center on one edge, dogs pivotally mounted upon said operating lever projecting above and below said lever and spring biased toward engagement with said respective groups of ratchet teeth, and stop means on said operating lever to engage said dogs and limit the pivotal movement of said dogs toward said teeth to the angle with respect to said operating lever assumed by said dogs when in engagement with said teeth and said operating lever is in neutral position.

2. An operator for closures having a plurality of tiltable louvres connected to a control rod for simultaneous movement comprising, a housing, a control link mounted for sliding movement in said housing, a connector cou-

pling said control rod and control link for similar movement, an operating lever pivotally mounted in said housing and having an inoperative neutral position perpendicular to said control link, said control link having oppositely disposed groups of ratchet teeth above and below its center on one edge, dogs pivotally mounted upon said operating lever projecting above and below said lever and spring biased toward engagement with said respective groups of ratchet teeth, stop means on said operating lever to engage said dogs and limit the pivotal movement of said dogs toward said teeth to the angle with respect to said operating lever assumed by said dogs when in engagement with said teeth and said operating lever is in neutral position, and means to lock said operating lever in neutral position.

3. An operator for closures having a plurality of tiltable louvres connected to a control rod for simultaneous movement comprising, a housing, a control link mounted for sliding movement in said housing, a connector coupling said control rod and control link for similar movement, an operating lever pivotally mounted in said housing and having an inoperative neutral position perpendicular to said control link, said control link having oppositely disposed groups of ratchet teeth above and below its center on one edge, dogs pivotally mounted upon said operating lever projecting above and below said lever and spring biased toward engagement with said respective groups of ratchet teeth, stop means on said operating lever to engage said dogs and limit the pivotal movement of said dogs toward said teeth to the angle with respect to said operating lever assumed by said dogs when in engagement with said teeth and said operating lever is in neutral position, and an escutcheon plate having a guide opening for said operating handle, said opening having vertical guide passages offset transversely and vertically with respect to one another and a cross-over passage connecting adjacent ends of the two vertical passages, said operating lever when in neutral position being in said cross-over passage and locked against vertical movement.

4. An operator for closures having a plurality of tiltable louvres connected to a control rod for simultaneous movement comprising, a housing, a control link mounted for sliding movement in said housing, a connector coupling said control rod and control link for similar movement, an operating lever pivotally mounted in said housing and having an inoperative neutral position perpendicular to said control link, said control link having oppositely disposed groups of ratchet teeth above and below its center on one edge, dogs pivotally mounted upon said operating lever projecting above and below said lever and spring biased toward engagement with said respective groups of ratchet teeth, and a stop lug on said operating lever to contact said dogs and limit pivotal movement toward said teeth, said stop lug having inclined surfaces in contact with the respective dogs when said dogs are in engagement with the teeth and said operating lever is in neutral position.

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