May 6, 1924. 1,493,023

W. E. COAKLEY

HOLDING AND OPERATING MEANS FOR VENTILATOR LOUVERS AND THE LIKE

Filed March 6, 1920

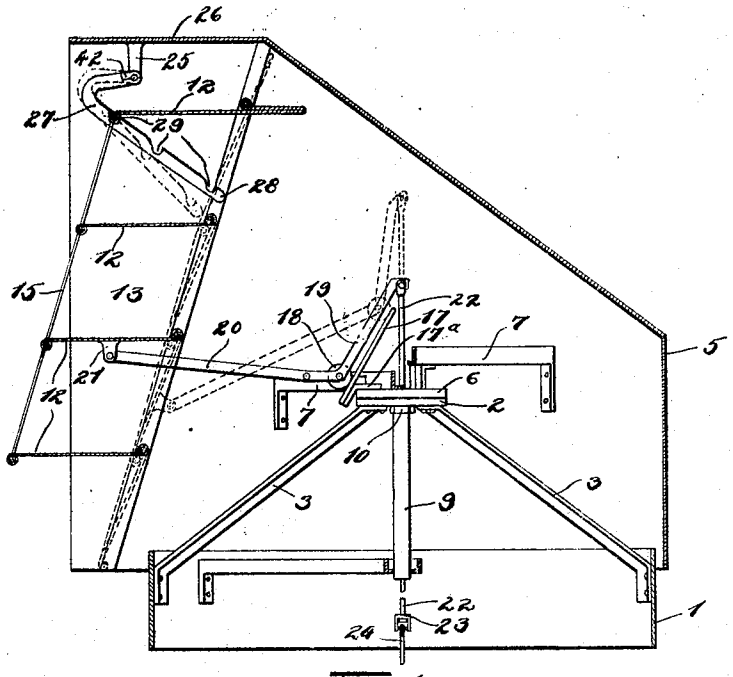


Fig - 1

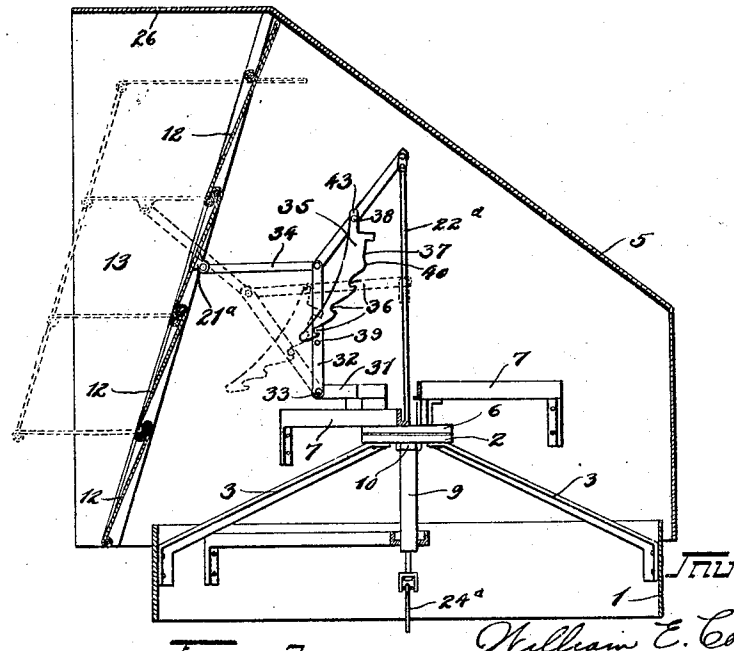


Fig - 2

Inventor
William E. Coakley
By Hull, Smith, Brock & Hull
Attys

Patented May 6, 1924. 1,493,023

UNITED STATES PATENT OFFICE.

WILLIAM E. COAKLEY, OF CLEVELAND, OHIO, ASSIGNOR TO THE OHIO BODY & BLOWER COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

HOLDING AND OPERATING MEANS FOR VENTILATOR LOUVERS AND THE LIKE.

Application filed March 6, 1920. Serial No. 363,816.

To all whom it may concern:

Be it known that I, WILLIAM E. COAKLEY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Holding and Operating Means for Ventilator Louvers and the like, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to an automatic holding and operating device peculiarly suitable for use in connection with the louver of ventilators for operating said louver and retaining same in open position, though well adapted for use in other connections where the requirements are analogous.

The object of the invention is to provide a simple, economical, thoroughly reliable and durable automatic device for moving and holding an object in a given position against the returning influence of gravity or other force and which acts to release the object from such position upon the movement of the object slightly further in advance of such position so that the movement of the object in both directions may be controlled, for instance, through the medium of a flexible element connected thereto.

Such a device is illustrated in the accompanying drawing as associated with a ventilator. Fig. 1 is a substantially central vertical section through a ventilator equipped with one form of my improved operating and holding devices for maintaining the louvers of the ventilating device in open position; and Fig. 2 is a similar view showing a modification of such device.

The ventilator wherewith I have shown my holding device associated is of the cowl type and comprises a base ring 1 having a bearing plate 2 supported centrally of and above it, through braces 3. The cowl, designated at 5 is supported through a bearing plate 6 that is sustained centrally of the cowl by braces 7 and which surmounts the former bearing plate 2, suitable anti-friction elements (not shown) being interposed between the two plates. The plates are maintained in proper relation to each other and against separation by a tube 9 which depends from the upper plate, through a central aperture of the lower plate and has a nut 10 applied to it beneath the lower plate.

A series of louvers 12 are pivoted at their upper edges within an open side 13 of the cowl and are adapted to drop by gravity to closing position, in a manner readily understood. The free edges of the louvers are connected by a link 15 so that they may be moved in unison by a common operating means.

Referring to Fig. 1 wherein I have shown one form of operating and retaining means, 17 represents an inclined plate which is welded to a bracket 17ª, fastened to the top bearing plate 6. This plate serves as a track for the roller 18 which is pivoted between a pair of bent arms 19. An arm 20 is pivoted at one end, between the lower ends of arms 19 and at the other end to a projection 21 on the inner side of one of the louvers 12. The upper end of a rod 22, is pivotally connected to the upper end of the bent arms 19 which is disposed directly above the tube 9 and said rod depends through the tube to a point within the base ring 1. The lower end of the rod 22 is provided with a swivel 23, to which is connected a flexible member 24 which depends within the building whereon the ventilator is located so as to be within easy reach, for operating the louvers. Pivotally supported by a bracket 25, which is fastened to the horizontal top portion 26 of the cowl, is a holding device 27 which is essentially a curved arm provided with a rounded toe portion 28 and a series of notches 29 adapted to receive the lower edge of the top louver.

Assuming that the ventilator is in a closed position as shown by the dotted lines, the operation will be as follows: Member 24 is pulled downwardly causing the roller 18 to move downwardly and outwardly on inclined plate 17 thereby forcing arm 20 outwardly to open the louvers. The holding arm 27 is deflected outwardly by the top louver engaging the upper side of the rounded toe portion 28 which movement permits the louver to swing upwardly and clear the swinging arm 27. On the return swing of said arm the edge of the louver is engaged by one of the notches 29 by relaxing the pull on member 22, the particular notch to be engaged depending upon the length of time before relaxing the pull on said chain. When closing the ventilator a pull on member 24 will disengage the edge of the louver

from the notch and simultaneously swing the arm 27 outwardly so that by suddenly relaxing the chain the louver will clear the swinging arm and be permitted to close.

Referring to Fig. 2 wherein I have shown a modification of my louver operating and retaining means, 31 represents a bracket attached to one of the braces 7. A supporting arm 32 is pivotally fastened thereto as indicated at 33. A bent arm 34, which is pivoted to the top of the supporting arm 32, has the outer end thereof pivotally connected to the projection 21^a on one of the louvers, and at the inner end thereof the vertical operating rod 22^a is pivotally fastened thereto in a manner similar to that previously described. A retaining device 35, which is provided with a series of holding notches 36 and a deflecting notch 37, is pivotally connected to the bent arm 34 as indicated at 38. These notches are adapted to engage a pin 39 which projects laterally from the supporting arm 32 and hold the louvers open by engagement of one of said notches therewith.

Assuming that the ventilator is in the closed position as shown by the full lines, the operation will be as follows: Member 24^a is pulled downwardly causing the bent arm 34 to rock about the pivotal connection at the top of supporting arm 32 and partially raise the louvers. As the louvers open to maximum position (shown by the dotted lines) supporting arm 32 will swing about pivot 33 to compensate for the increase in radius. Meanwhile, the retaining device 35 has been sliding freely over pin 39 and by relaxing the pull on member 24^a the pin 39 will be engaged in one of the notches 36 to hold the louvers and operating mechanism in a fixed position. In order to lower the louvers, the flexible member 24^a is pulled downwardly until pin 39 engages the deflecting notch 37. If the pull on said flexible member is now suddenly relaxed the pin 39 will strike the toe 40 of notch 37 and deflect the retaining device 35 outwardly and thereby permit the louvers to drop.

The purpose of swivel 23 is to prevent the flexible member 24 from becoming twisted as the ventilator rotates about its axis to meet varying wind directions.

In each of the above devices I preferably provide the retaining device with a fusible portion so that in case of fire the excessive heat will melt said fusible portion and cause the ventilator to close automatically. In Fig. 1 I have indicated the fusible portion at 42 and in Fig. 2, 43 represents such portion.

Having thus described my invention, what I claim is:—

1. In a device of the class described, the combination with a pivoted member adapted to open and close an opening, of an arm having a plurality of notches therein, said arm being disposed in operative relation to said pivoted member whereby the edge of said pivoted member may engage said notches and means for operating said pivoted member, said arm being tripped into and out of engagement with said pivoted member solely by the movement of said member.

2. In a device of the class described, the combination with a pivoted member adapted to open and close an opening, of a curved arm pivoted adjacent said pivoted member and adapted to contact therewith when said member is in the closed position, a plurality of notches formed in said arm and adapted to receive the edge of said member when in the open position and means for operating said pivoted member, said member being adapted to deflect said arm when moved to open position, and said arm being adapted to swing across and engage the edge of said member to hold said member in the open position.

3. In a device of the class described, the combination with a cowl, of a pivoted member adapted to open and close an opening in said cowl, a curved arm depending from said cowl and adapted to contact with said pivoted member when in the closed position, means carried by said arm for retaining said pivoted member in the open position and means for operating said pivoted member, said member being adapted to deflect said arm when moved to open position, and said arm being adapted to swing across and engage the edge of said member to hold said member in the open position.

4. In a device of the class described, the combination with a cowl, of a pivoted member adapted to open and close an opening in said cowl, a curved arm pivotally fastened to the top of said cowl and adapted to contact with said pivoted member when in the closed position, a plurality of notches in said arm for retaining said member in the open position, and means for operating said pivoted member, said arm being tripped into and out of engagement with said pivoted member solely by the movement of said member.

5. In a device of the class described, the combination with a cowl, of a pivoted member adapted to open and close an opening in said cowl, means for retaining said member in the open position, an inclined track positioned within said cowl, a roller adapted to traverse said track, an arm fastened to said roller, a second arm connecting said pivoted member and said first mentioned arm and means for moving said roller along said track to operate said pivoted member.

6. In a device of the class described, the combination with a cowl, of a pivoted member adapted to open and close an opening in said cowl, an arm depending from said cowl adjacent said pivoted member, said arm be-

ing pivoted to said cowl and deflected outwardly and inwardly toward said pivoted member, said arm being provided with a plurality of notches and the free end of said arm being adapted to contact with said pivoted member when in the closed position, and means for operating said pivoted member, the movement of said pivoted member being adapted to operate said arm to hold or release said member.

In testimony whereof, I hereunto affix my signature.

WILLIAM E. COAKLEY.