Jan. 3, 1928. 1,654,715

T. H. AFFLECK ET AL

VENTILATOR

Filed Dec. 10, 1925 4 Sheets-Sheet 1

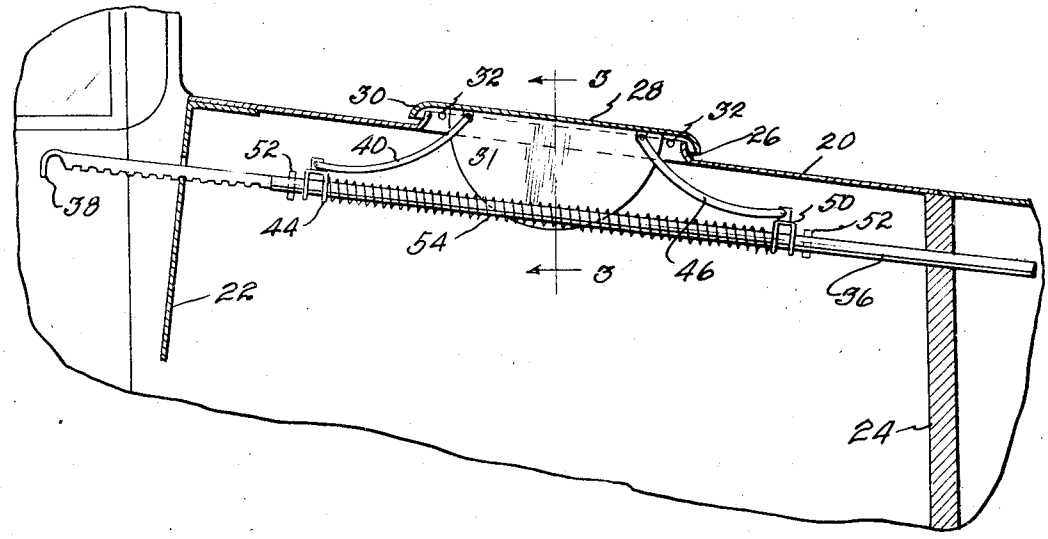


Fig. 1

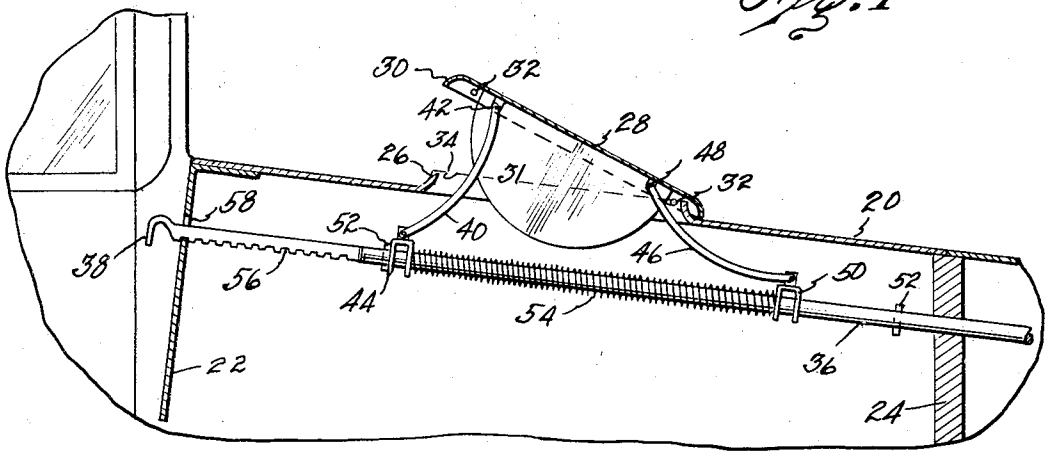


Fig. 2

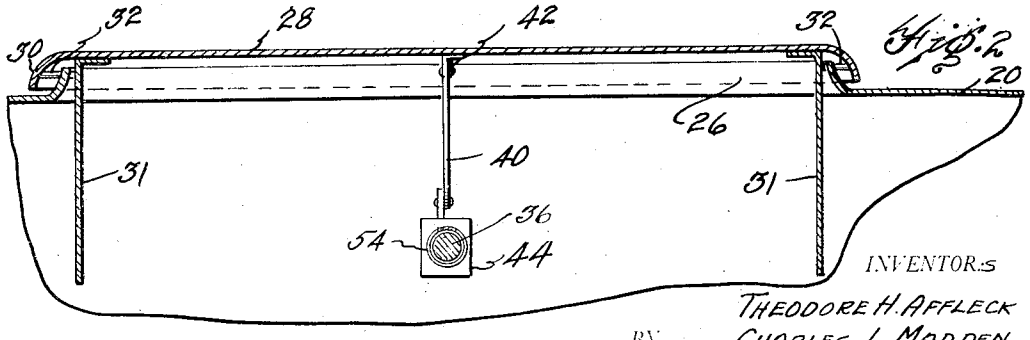


Fig. 3

INVENTORS
THEODORE H. AFFLECK
CHARLES L. MADDEN
BY Parker & Burton
ATTORNEY.

Jan. 3, 1928. 1,654,715

T. H. AFFLECK ET AL

VENTILATOR

Filed Dec. 10, 1925 4 Sheets-Sheet 2

Fig. 4

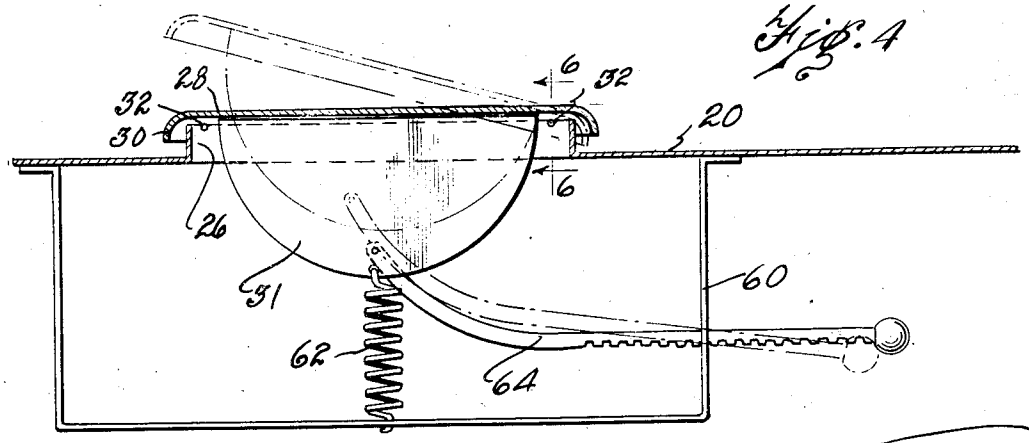


Fig. 5

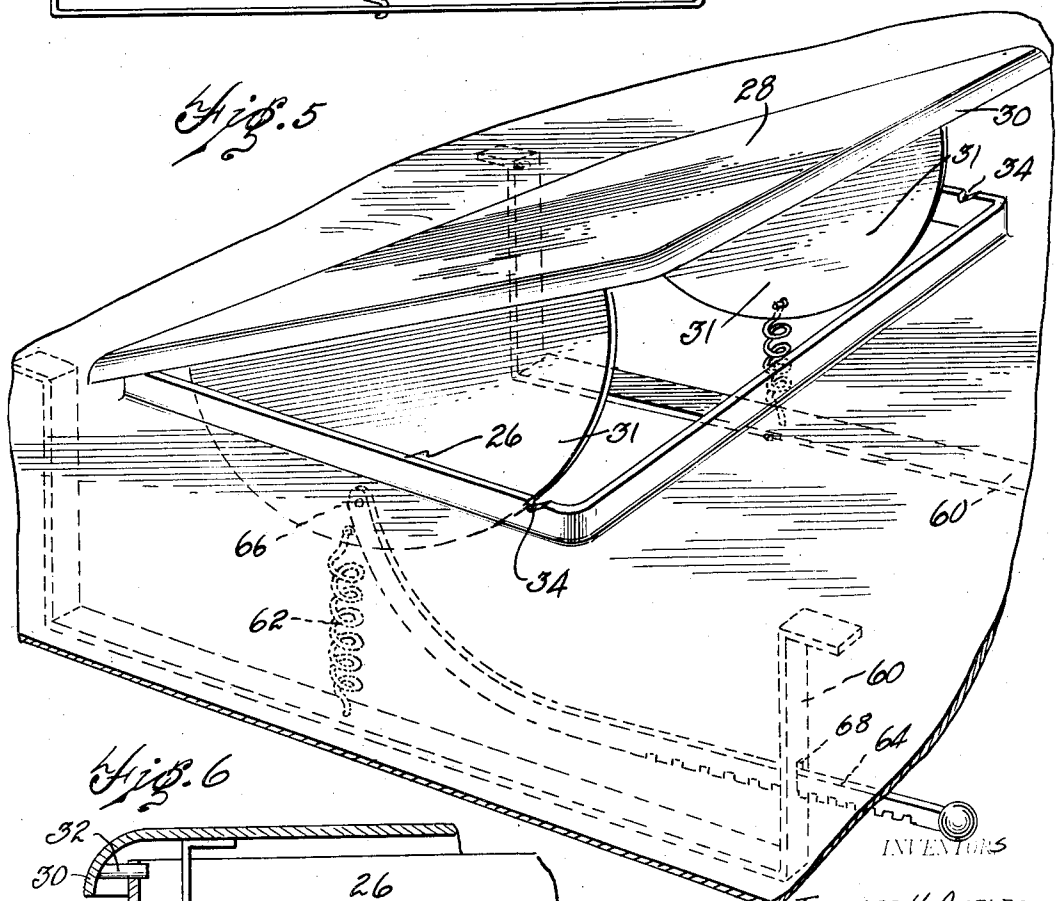
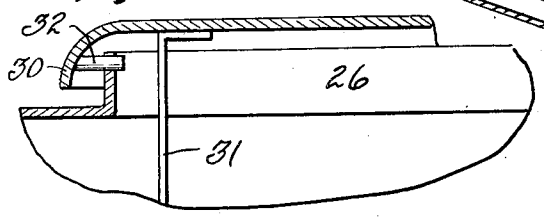


Fig. 6



INVENTORS
THEODORE H. AFFLECK
CHARLES L. MADDEN
BY
Parker & Burton
ATTORNEY.

Jan. 3, 1928. 1,654,715

T. H. AFFLECK ET AL

VENTILATOR

Filed Dec. 10, 1925 4 Sheets-Sheet 3

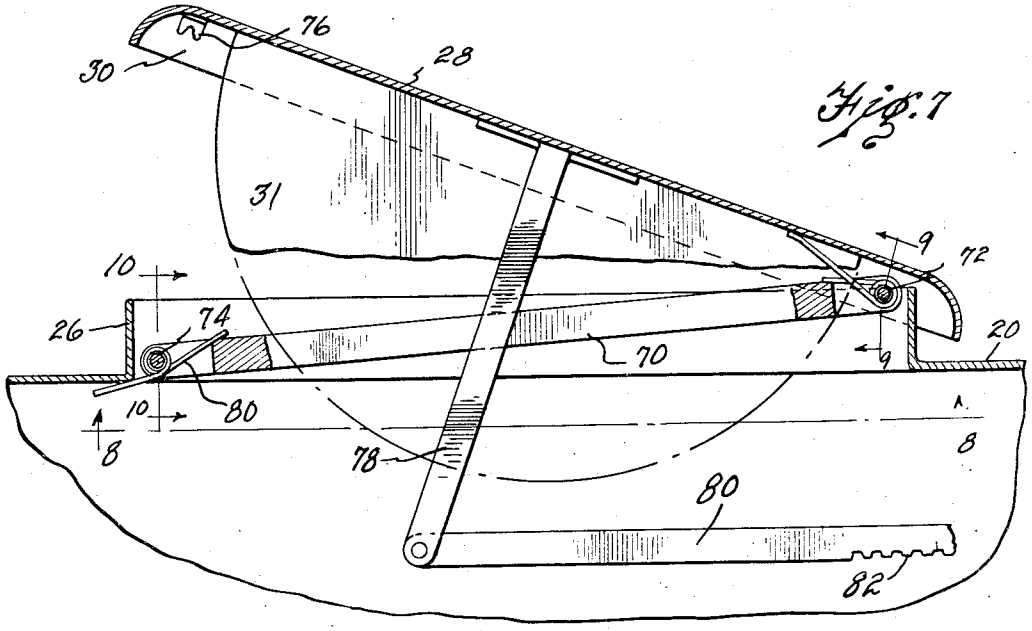


Fig. 7

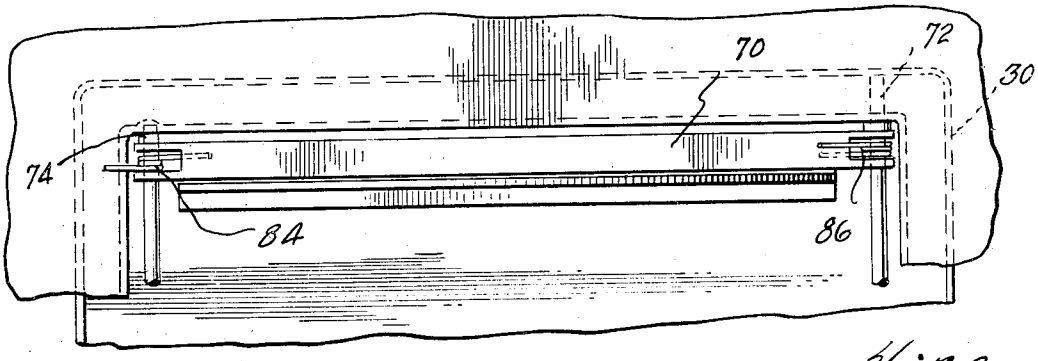


Fig. 8

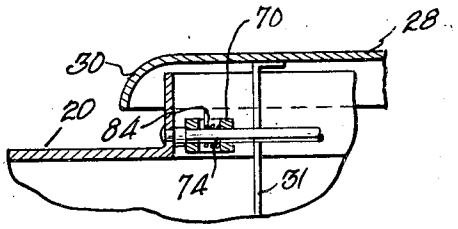


Fig. 10

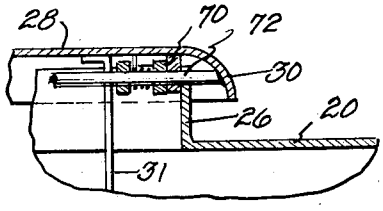


Fig. 9

INVENTORS
THEODORE H. AFFLECK
CHARLES L. MADDEN
BY Parker & Burton
ATTORNEY.

Jan. 3, 1928. 1,654,715

T. H. AFFLECK ET AL.

VENTILATOR

Filed Dec. 10, 1925 4 Sheets-Sheet 4

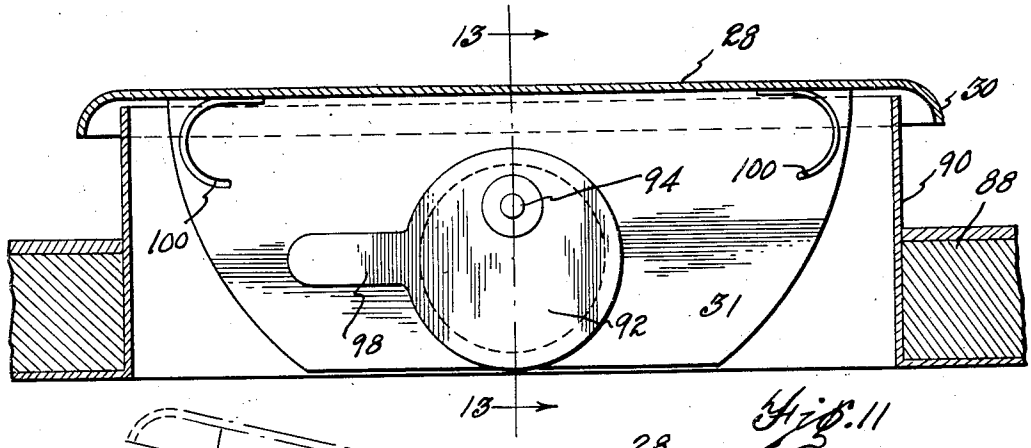


Fig. 11

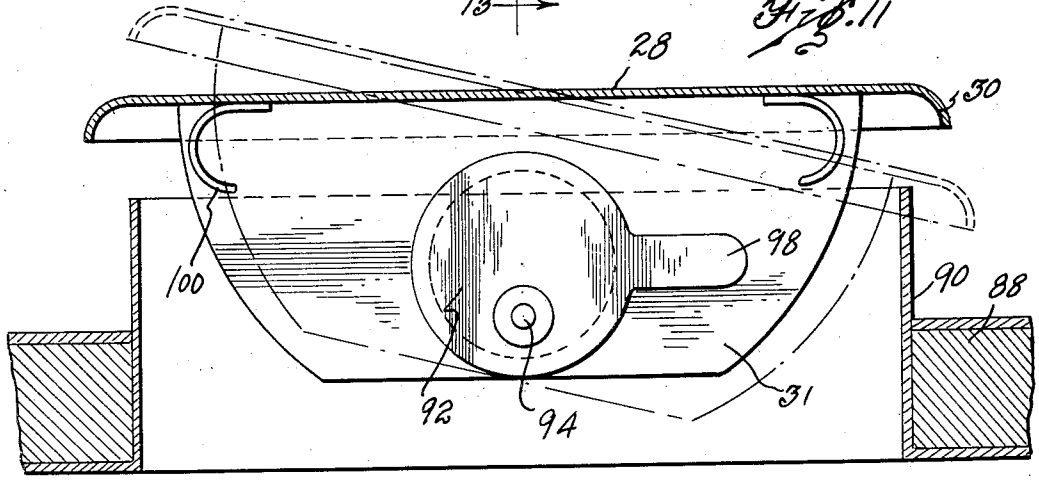


Fig. 12

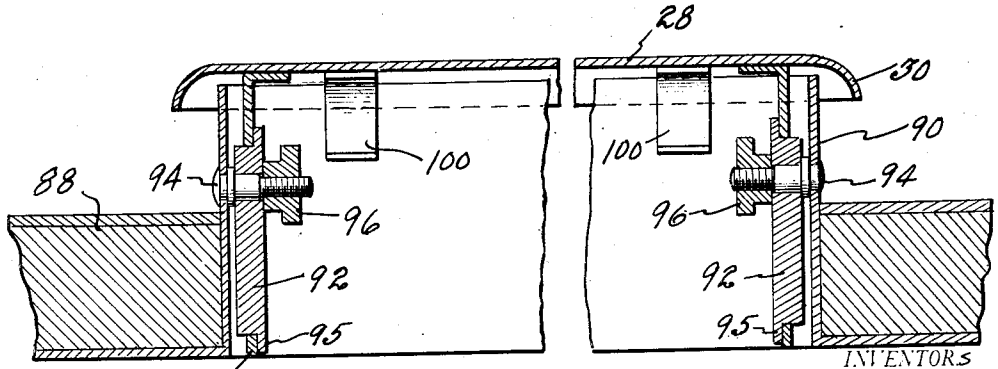


Fig. 13

INVENTORS
THEODORE H. AFFLECK
CHARLES L. MADDEN
BY Parker & Burton
ATTORNEY.

Patented Jan. 3, 1928. 1,654,715

UNITED STATES PATENT OFFICE.

THEODORE H. AFFLECK, OF CLEVELAND, OHIO, AND CHARLES L. MADDEN, OF DETROIT, MICHIGAN; SAID THEODORE H. AFFLECK ASSIGNOR TO SAID CHARLES L. MADDEN.

VENTILATOR.

Application filed December 10, 1925. Serial No. 74,440.

Our invention relates to improvements in ventilators for vehicle bodies.

The object is to provide a ventilator for a vehicle body which is so constructed that either the front end or the rear end of the ventilator may be raised to regulate the air admitted through the ventilator opening into the vehicle body in the manner desired.

An important advantage is the provision of a ventilator in a suitable wall portion of a vehicle body, such as the cowl or roof of a closed automobile, boat or aeroplane body, which ventilator is so built and has a closure so mounted that either the front end or the rear end of the closure may be tilted upwardly and supported at different elevations in the open position.

An important advantage of this invention is the fact that ventilation of the car body may be had with a strong draft by opening ventilator toward the front, also ventilation of the car body may be had without any draft by opening ventilator toward the rear.

A meritorious feature resides in the construction of such a ventilator with a minimum number of parts adapted to be easily and quickly operated and held against rattle at any adjusted open position and which is provided with side wall portions adapted to close the ventilator opening on the sides at any open position of the ventilator.

The above objects and advantages, together with others of importance and merit, will more fully appear from the following specification, appended claims and accompanying drawings, in which:

Figure 1 is a sectional view through an automobile cowl provided with a ventilator embodying our invention.

Fig. 2 is a cross-sectional view on the same line as Fig. 1 showing the rear end of the ventilator elevated.

Fig. 3 is a cross-sectional view taken on line 3—3, Fig. 1.

Fig. 4 is a cross-sectional view through a wall portion provided with a modified form of a ventilator embodying our invention.

Fig. 5 is a perspective of the ventilator shown in Fig. 4 with one end of the ventilator elevated.

Fig. 6 is a detail sectional view taken on line 6—6, Fig. 4.

Fig. 7 is a sectional view through a wall portion showing a second modified form of ventilator construction embodying our invention.

Fig. 8 is a fragmentary bottom plan view of Fig. 7.

Fig. 9 is a cross-sectional view taken on line 9—9, Fig. 7.

Fig. 10 is a cross-sectional view taken on line 10—10, Fig. 7.

Fig. 11 is a cross-sectional view through a wall opening showing a third modified form of ventilator construction embodying our invention.

Fig. 12 is a cross-sectional view taken on the same line as Fig. 11 showing the ventilator in the open position.

Fig. 13 is a broken away cross-sectional view taken on line 13—13 of Fig. 11.

In Figs. 1 to 10 inclusive of the drawings we have shown our invention as embodied in a ventilator mounted in the cowl of an automobile body to ventilate the foot space and the interior of the body. In Figs. 11 to 13 we have shown an embodiment of our invention disposed in a wall portion such as the roof of a vehicle. Obviously our ventilator may be installed at any suitable place in the wall of the body of the vehicle. In automobile practice ventilators are commonly placed either in the cowl or roof of closed bodies.

It is desirable that a ventilator be capable of regulation so that the air draft admitted through the ventilator opening may be controlled to meet the requirements and the condition of the weather. At one time a strong air blast may be needed while at another time the minimum amount of air movement may be required. Our ventilator is of such a character as to meet these requirements and various intermediate stages between the maximum and minimum amount of air flow. Through the use of our invention ventilation may be accomplished with or without creating a draft.

In Figs. 1 to 10, let 20 indicate the cowl of an automobile body provided with an instrument board 22 and a dash board 24. The cowl is provided with a ventilator opening having a coaming 26 about its margin. A closure 28 is provided for such opening. This closure has a downwardly-extending flange 30 adapted to seat over the coaming 26. The closure is provided with side wall

portions 31 arcuate in form which extend downwardly within the opening on opposite sides and serve to close the opening at the sides at any position of elevation.

The closure is so supported that either the front end or the rear end may be elevated to an open position and mechanism is provided to elevate either the front end or the rear end of the closure and to support it at different heights of elevation in the open position. This mechanism is of such a character as to be easily and quickly actuated to tilt either end of the closure and to support the same in such manner as to prevent rattle of the parts at the pivotal mountings of the closure. Different types of mounting and operative mechanism are illustrated.

In Figs. 1 to 3 we have shown a closure having pivot pins 32 positioned on opposite sides at both the front and rear end. These pivot pins are removably received in notches 34 formed in the coaming 26 so that either the front or the rear end of the closure may be raised, the closure pivoting about the pivot pins at its opposite end.

To elevate the closure we provide an operating member 36 which extends through the instrument board and is provided interiorly of the body with a handle 38 and is supported at the opposite end in the dash 24 for endwise movement. A link 40 is pivoted at 42 to the rear end of the closure and is provided with a saddle 44 slidably mounted upon the rod 36. A link 46 is pivoted at 48 to the forward end of the closure and is provided with a saddle 50 slidably mounted upon the rod 36. Stops 52 are carried by the rod 36, being positioned beyond the saddles 44 and 50. An expansion coil spring 54 is carried by the rod 36 interposed between the saddle members 44 and 50 to hold them apart, as appears in Fig. 1, so as to hold the closure in the covered position.

It will be seen that when the operating rod 36 is moved forwardly to the position shown in Fig. 2, the rear end of the closure will be tilted upwardly. If the operating rod 36 is moved rearwardly beyond the position shown in Fig. 1, the forward end of the closure would be tilted upwardly. The closure would in each instance pivot about its pivotal connection at the opposite end from the elevated end. The rod 36 is provided with a plurality of notches 56 adapted to engage over the edge of the opening 58 in the instrument board through which the rod passes to hold the same at adjusted positions.

In Figs. 4, 5 and 6 we have illustrated a modified form of our invention in which we employ the pivot pins 32 described in connection with the description of Figs. 1 to 3 and the notches 34 in the coaming also hereinabove described to serve as pivotal mountings for each end of the closure. To raise and lower the closure we provide different operating mechanism. A pair of brackets 60 are secured to the wall portion of the body, as appears in Figs. 4 and 5, and a spring 62 engages these brackets with the adjacent side wall portions 31 of the closure, exerting a downward pull on the closure to hold it yieldably in the closed position. An operating lever 64 is pivoted at 66 about one side wall portion 31 and is mounted to travel through an opening 68 in one of the brackets 60. It will be seen that as this lever is moved endwise in one direction the closure will be rocked to raise the forward end thereof and as the lever is moved in the opposite direction the closure will be rocked to tilt the rearward end upwardly. This open position is shown in dotted outline in Fig. 4 and in full outline in Fig. 5.

In Figs. 7 to 10 we have shown a second modified form of operating mechanism. A link 70 is pivoted at 72 to one side of the closure at one end. A corresponding link (not shown in the drawing) is pivoted to the same end of the closure at the opposite side. Opposite ends of these links are pivoted at 74 to the coaming. The closure is provided at the end opposite that to which the link is pivoted with a saddle 76 adapted to seat over a pivot pin mounted in the coaming. An arm 78 extends downwardly from the closure and is pivoted at its lower end to an operating rod 80. This operating rod is provided with notches 82 and extends through an instrument board and is adapted to be adjustably moved through the opening therein in the same manner as described in connection with the operating rod shown in Figs. 1 to 3.

Anti-rattling springs 84 are wound about the pivot pins 74 and engaged at one end over the link 70 and at the opposite end against the side wall of the body, while similar anti-rattling springs 86 are wound about the pivot pins 72 and engaged at one end against the closure and at the opposite end against the link 70. It will be seen that as the operating member 80 is moved forwardly the forward end of the closure is elevated while if it is moved rearwardly the closure is rocked to elevate the rearward end.

In Figs. 11 to 13 we have shown a third modified form of our invention, here illustrated and used in the roof of a vehicle body. The roof or other side wall portion is indicated as 88 having a ventilator opening surrounded by a coaming 90 and a closure 28 provided with a marginal flange 30 and side walls 31 of the same character as described in connection with the construction shown in the figures heretofore explained.

A rotatable cam 92 is pivoted by a pin 94 to the coaming 90. This cam is eccentrically mounted in a side wall portion 31 of the

closure and has a flange 95 engaging such side wall. One of these cams is provided for each side wall of the closure. Adjusting nuts 96 are carried by each pin 94. Each rotatable cam 92 has a handle 98 by means of which it may be rotated to raise or lower the closure, as shown in Fig. 12. The position of elevation in this figure is shown in solid line. Handles 100 are secured to the under side of the closure at each end and when the closure has been raised to the position shown in solid line in Fig. 11, either one of these handles may be grasped and either end of the closure pulled down upon the coaming so as to elevate either the front or the rear end of the closure, the adjusting nuts 96 being loosened and tightened to permit the completion of these operations.

What we claim is:

1. In a road vehicle body, a wall portion provided with a ventilator opening having a surrounding coaming, a closure for said opening provided with a marginal flange adapted to seat over said coaming, a pair of links one on each side of the opening, each link pivoted at one end therein, and at the opposite end to the closure whereby, the closure may be swung upwardly with said links about their pivot or swung upwardly away from the links about its pivotal connection therewith, an arm depending below said closure and an operating lever engaging said arm to swing the same to tilt the closure upwardly from either end, a spring about the pivot at one end of the link engaging the link and the adjacent side of the opening and a spring about the pivot at the opposite end of the link, engaging the link and the closure.

2. In a road vehicle body, a wall portion provided with a ventilator opening having a surrounding coaming, a closure for said opening provided with a marginal flange adapted to seat over said coaming, a pair of links one on each side of the opening pivoted at one end therein, each of said links pivoted to the opposite end of the closure whereby such end of the closure may be swung upwardly thereby, while the opposite and free end of the closure may be swung upwardly, the closure pivoting about its connection with said links, saddle members on the opposite and free end of the closure adapted to engage over pivots within the opening when the opposite end of the closure is swung upwardly, an arm depending below the closure substantially intermediate its ends, a lever pivoted to said arm to swing the same in one direction to tilt one end of the closure upwardly and to swing the same in the opposite direction to tilt the opposite end of the closure upwardly.

In testimony whereof, we sign this specification.

THEODORE H. AFFLECK.
CHARLES L. MADDEN.