Nov. 26, 1935. F. J. WESTROPE 2,022,020

COWL VENTILATOR

Filed July 30, 1932 2 Sheets-Sheet 1

Fig. 1.

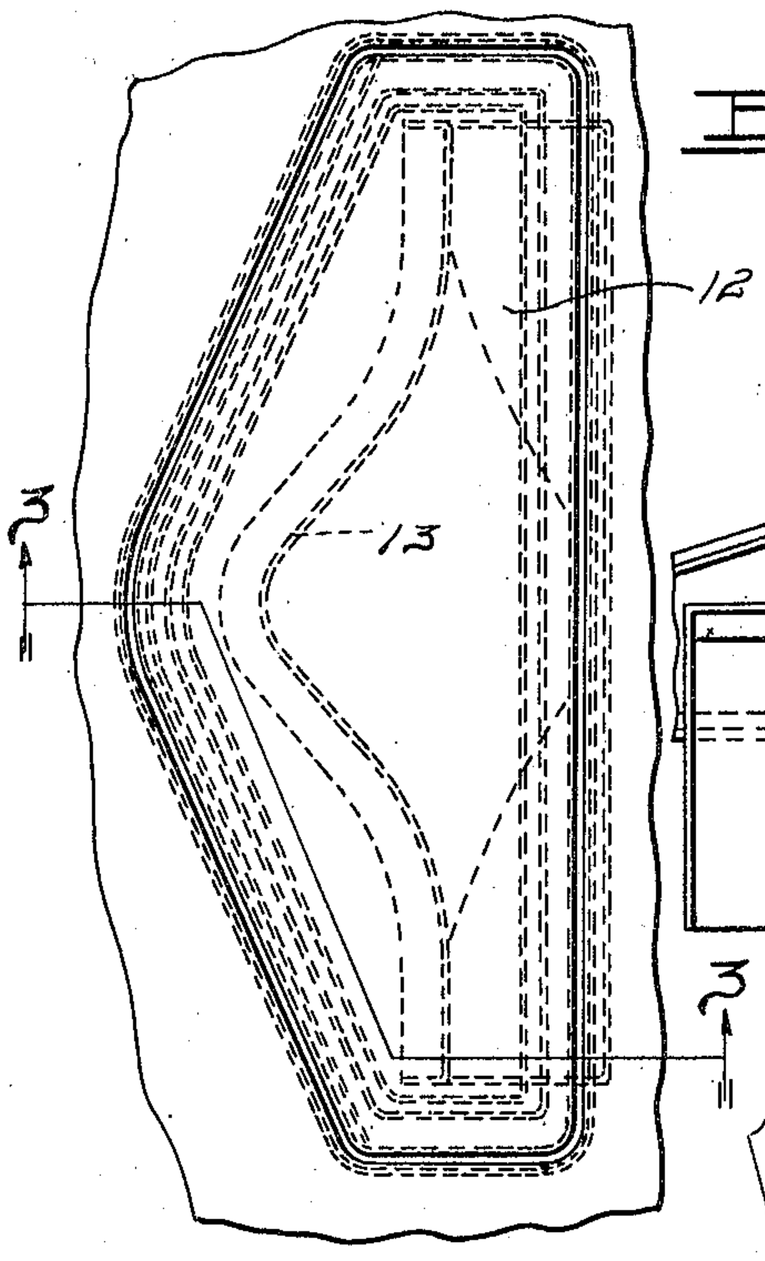
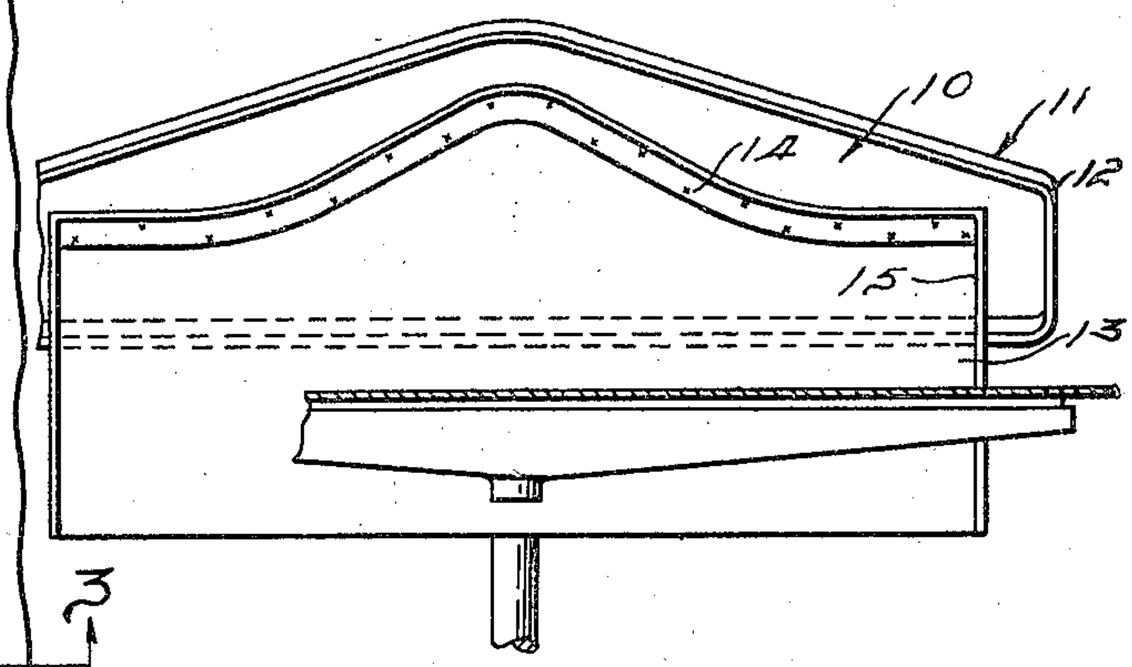


Fig. 2.



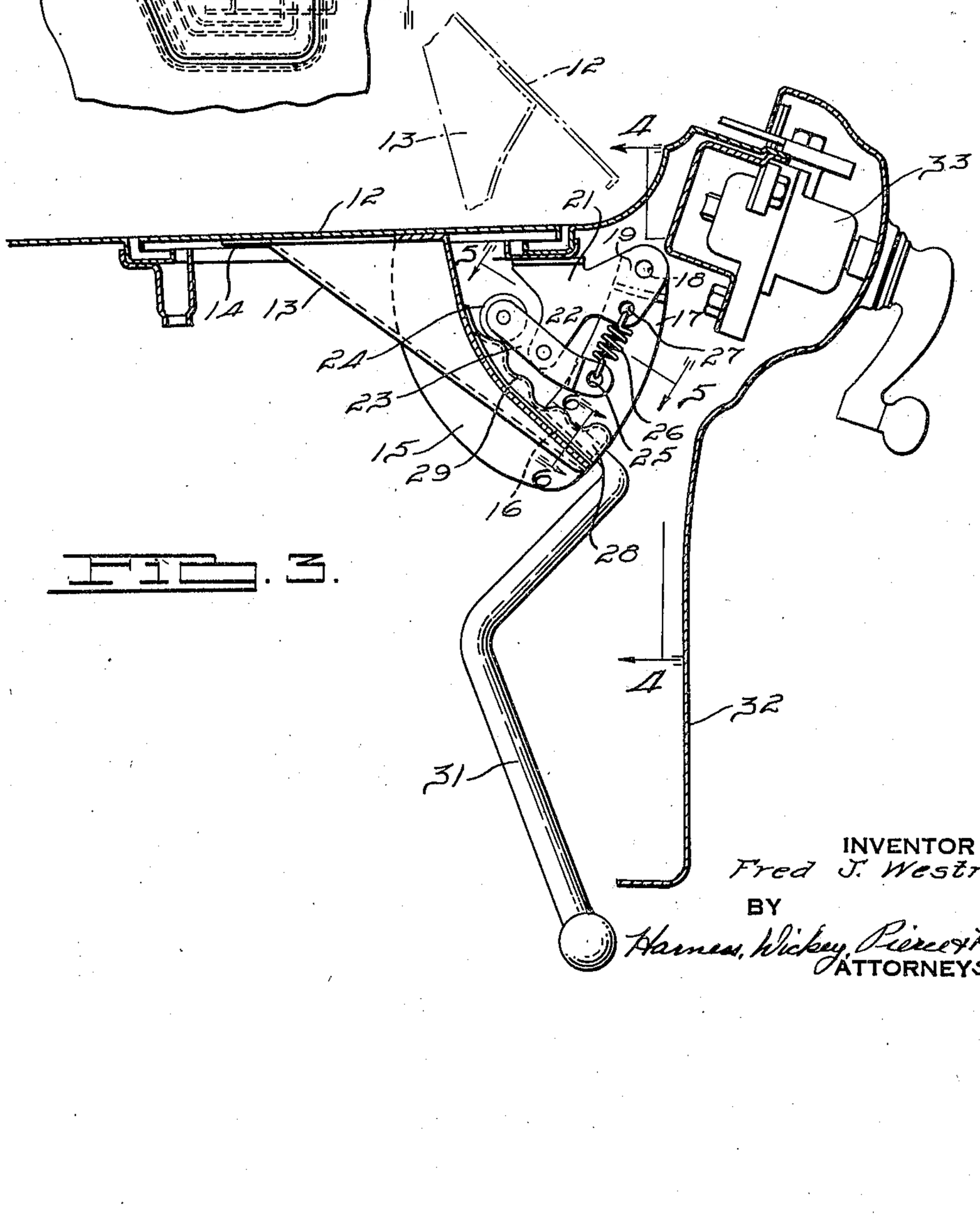


Fig. 3.

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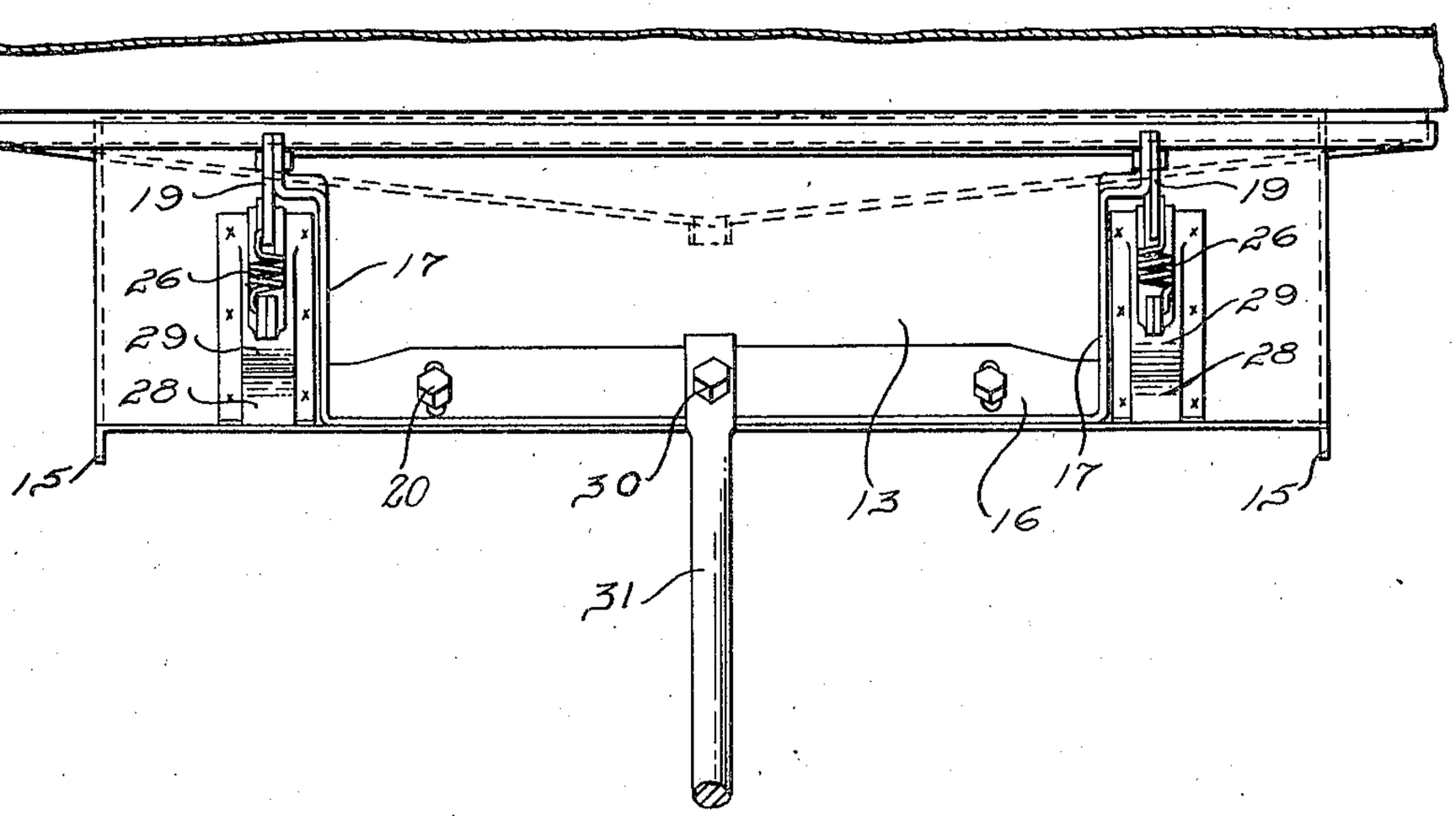
Fig. 4.



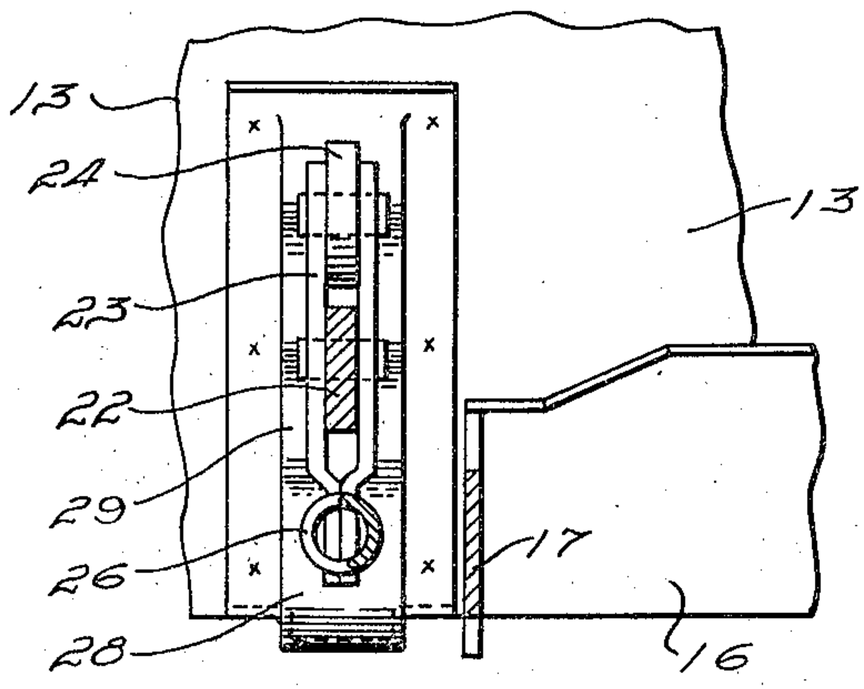


Fig. 5.

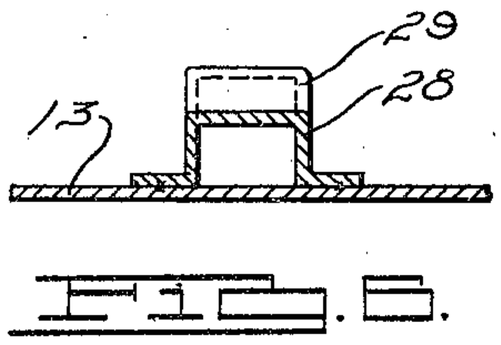


Fig. 6.

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UNITED STATES PATENT OFFICE

2,022,020

COWL VENTILATOR

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Application July 30, 1932, Serial No. 626,582

3 Claims. (Cl. 98—2)

This invention relates to cowl ventilators for automotive vehicle bodies and particularly to a ventilator of the improved type constructed to have a supporting element direct the air downwardly into the area beneath the cowl and to require the same degree of effort to move the ventilator from one position to another.

Cowl ventilators were constructed for vehicles heretofore in such manner as to have the deflected air trapped by the supporting and adjusting mechanism which introduced conflicting air current and reduced the efficiency of the ventilator. Spring means were employed for positioning the ventilator at a desired angle of opening which was increasingly stressed as the opening became larger to require more and more effort to be expended to move the ventilator to complete open position.

I provide a supporting element for the ventilator cover which is so sloped as to be positioned less than 90 degrees to the vertical to have the air engaged by the cover deflected downwardly below the cowl without engaging obstructing mechanism which would otherwise set up eddy currents and interfere with the downward movement of the air. The positioning element is so constructed relative to the supporting portion of the cowl cover as to travel on an arc about the pivot point of the supporting portion to thereby require the same expenditure of energy to move the cowl cover from one position to another. The cowl ventilator thus constructed is simple in operation and positively positioned by an element which readily permits the cowl cover to be moved from one position to another without appreciable or increasing effort.

The main objects of my invention are; to provide a cowl ventilator for a vehicle body which deflects all of the air engaged by the ventilator cover, downwardly within the space encompassed by the cowl; to provide a support for the cowl cover which functions as a deflecting means to prevent the air from being trapped or otherwise interfered with as it is directed downwardly into the space within the cowl; to provide means on the support for the ventilator which operates on an arc about the pivot of the support in engagement with a sinuous arcuate element for positioning the cowl in various degrees of angularity to the cowl surface; to provide a positioning device for the cowl ventilator constructed to require the same degree of effort to be expended to effect its movement at all positions of the ventilator; and in general to provide a cowl ventilator which is simple in construction, economical of manufacture and positive in operation.

Other objects and features of novelty of my invention will be either specifically pointed out or will become apparent when referring, for a better understanding of my invention, to the following description in conjunction with the accompanying drawings, wherein:

Figure 1 is the plan view of a cowl ventilator in closed position, embodying features of my invention,

Figure 2 is a front view of the cowl ventilator illustrated in Fig. 1, with the cowl cover in open position,

Fig. 3 is an enlarged sectional view of the structure illustrated in Fig. 1, taken on the line 3—3 thereof,

Fig. 4 is a sectional view of the structure illustrated in Fig. 3, taken on the line 4—4 thereof,

Fig. 5 is an enlarged sectional view of the structure illustrated in Fig. 3, taken on the line 5—5 thereof, and

Fig. 6 is an enlarged sectional view of the structure illustrated in Fig. 3, taken on the line 6—6 thereof.

Referring to the drawings, the cowl ventilator 10 is provided with a movable element 11 comprising a cover 12 mounted on a support 13. The front of the cowl cover 11 has sloping sides providing a greater width to the cover at the central portion which projects upwardly to a greater height than the edge portions when the cover is in open position.

The support 13 is of arcuate shape both lengthwise and crosswise of the body and is provided with a flange 14 on its upper edge which is welded or otherwise secured to the cover 12. The supporting member 13 is also provided with flanges 15 on each side to provide additional strength thereto. Referring particularly to Fig. 3, it will be noted that the slope of the supporting member 13 relative to the cover 12 is such that when the cover is in raised position the central portion of the member 13 is disposed at an angle to the vertical so as to deflect the air which is trapped by the cover downwardly into the cowl. This prevents air currents from being set up and interference by the supporting arms and control mechanism which are mounted behind the supporting member 13. The present construction eliminates the possibility of trapping air, since all of the air engaged by the cover 12 is deflected downwardly through the opening by smooth paths out of contact with any of the actuating mechanisms. In view of the central projecting portion

of the deflector 13, caused by its lateral curvature, the paths will be diverging to spread the air across the entire front portion of the space under the cowl.

A laterally extending U-shaped bracket 16 is secured to the lower end of the supporting member 13 by bolts 20 which extend through slots in the bracket to permit the supporting member and cover to be adjusted relative to the cowl opening. Upwardly extending arms 17 of the bracket 16 are provided with apertures 18 and mated with apertures in arms 19 of a U-shaped bracket 21 which is secured to the drip trough about the cowl opening. The two U-shaped elements 16 and 21 are united by rivets or other pivot means which extend through apertures 18 and the apertures in the arms 19 to form a hinge so that the cover 12 and the supporting element 13 may be moved to any predetermined closed or open position.

For positioning the cover at various angles relative to the cowl opening at closed and several open positions, I have provided releasable securing mechanisms which comprise arms 22 in extension of the arms 19, to which levers 23 are pivotally mounted medially of their length. At one end of the levers 23 rollers 24 are pivoted while at the other end apertures 25 are provided to which one end of springs 26 are hooked, the other end of the springs being hooked in apertures 27 provided in the arms 19.

As pointed out hereinabove, the supporting element 13 was arcuately shaped both laterally and longitudinally of its dimensions, the curved shape laterally of its dimensions at the outer edges following an arc struck about the aperture 18, in the arm 17 of the U-shaped member 16. Upon this surface members 28 are secured by welding, riveting or other means, having sinuous curved surfaces 29 of substantially the radius of the roller 24 for the purpose of receiving the roller which is biased therein by the action of the spring 26 on the lever 23.

It will be noted that the rollers register with one trough then another of the elements 28 as the ventilator is moved to open and closed position, requiring the same amount of effort for moving the ventilator from or to any of its positions. It has usually been the practice heretofore, to provide a bias retaining element which increased its tension the further the ventilator cover was opened, thereby requiring a greater amount of force to effect the opening of the cover at the complete open position.

An actuating handle 31 is secured to the movable portion of the ventilator, that is to say, the cover 12, the supporting element 13 and the U-shaped element 16, by a bolt 30 or by being welder, riveted or otherwise secured thereto and is so formed as to be readily accessible to the operator. In the construction herein shown a dash panel 32 encompasses the windshield positioning device 33 which has been described and claimed in the co-pending application of Alfred H. Haberstump, Serial No. 631,350, filed September 1, 1932 and assigned to the assignee of the present invention, and which in no way interferes with the ventilating device.

My cowl ventilator is unique in providing a surface directed toward the air stream which traps and deflects the air downwardly through the cowl opening out of the path of the actuating or supporting element, to thereby obtain a maximum amount of air within the vehicle body through the ventilator opening. This is accomplished by a supporting element for the cover which forms an obtuse angle therewith and which can never be moved into a position in which the major portion of the supporting element reaches or passes over a vertical position. The positioning element for the ventilator is so constructed as to operate on the arc of a circle with equal force at all positions of the ventilator. The ventilator thus constructed is rigid, made up of a minimum number of parts and is extremely efficient in operation.

While I have described and illustrated but a single embodiment of my invention, it will be apparent to those skilled in the art that various changes, omissions, additions and substitutions may be made therein without departing from the spirit and scope of my invention, as set forth in the accompanying claims.

I claim as my invention:

1. A cowl ventilator for covering an aperture in the cowl panel and for deflecting air therethrough including, in combination a cover for said aperture, supporting means for said cover comprising two oppositely disposed U-shaped members having a wet portion and extending arms, which arms are in hinged relation to each other, a deflector element joining one of said members to said cover, an element having a plurality of notches disposed on said deflector on an arc about said hinge, and an engaging element for registering with said notches for positioning said cover at predetermined points.

2. A cowl ventilator cover having the medial portion of the front edge extending outwardly from the side edges thereof, and a deflector element secured to the cover having the central portion forwardly extended to effect a downward and sideward flow of air when the cover is in open position.

3. A ventilator for deflecting air through an aperture in a panel including, in combination, a cover for said aperture, pivotal means for supporting said cover, an element carried by said cover having a plurality of notches disposed on an arc having the pivot of the supporting means as a center, a second element engageable with said notches for positioning said cover, and a spring for biasing said second element into said notches.

FRED J. WESTROPE.

CERTIFICATE OF CORRECTION.

Patent No. 2,022,020. November 26, 1935.

FRED J. WESTROPE.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, line 37, claim 1, for "wet" read web; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 14th day of January, A. D. 1936.

Leslie Frazer
Acting Commissioner of Patents.

(Seal)