June 17, 1930. H. M. HOOD 1,765,333

SEALING MEANS FOR COWL VENTILATORS FOR AUTOMOBILES

Filed Oct. 31, 1929

Fig. 1.

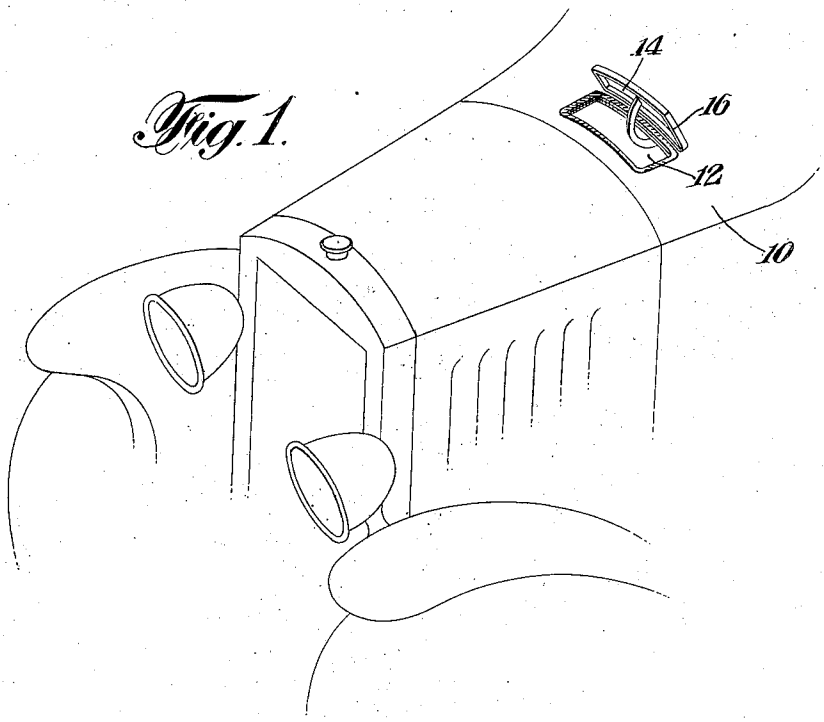


Fig. 2.

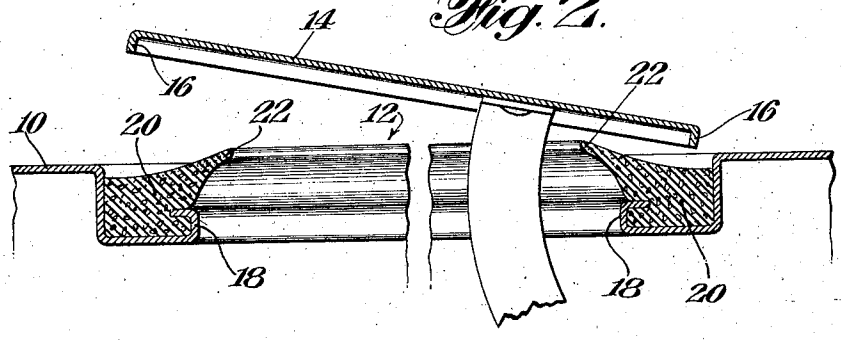
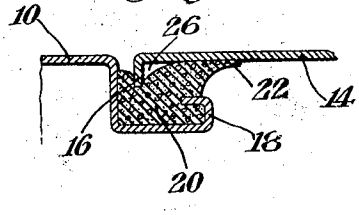


Fig. 3.



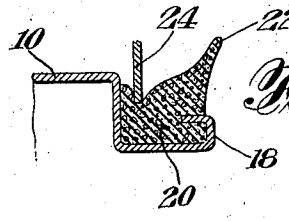


Fig. 4.

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Patented June 17, 1930 1,765,333

UNITED STATES PATENT OFFICE

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SEALING MEANS FOR COWL VENTILATORS FOR AUTOMOBILES

Application filed October 31, 1929. Serial No. 403,697.

This invention relates to sealing means for cowl ventilators for automobiles. Such ventilators are ordinarily located on the central axis of the car immediately in front of the wind-shield and when they are closed the cover lies approximately flush with the adjoining portions of the body so that the lines of the car are not spoiled. For this reason the connection between the cover-plate and the body must be made below the line of the body and heretofore it has been necessary to make special provision to drain off any rain that entered the joint between the two.

I have discovered that by using sponge rubber and making the sponge rubber in proper shape, it is possible to interpose between the body and the cover-plate a seal which is so water-tight that no provision for draining off water need be provided. In carrying out my invention, a mass of sponge rubber is located around the edge of the opening and carried by the fixed body members. This mass of sponge rubber has an upwardly extending flange toward the center of the hole which preferably extends slightly above the body line when the ventilator is open. The cover-plate has a flange adapted to contact with the mass of the sponge rubber quite close to the body. As the flange on the cover presses into the rubber mass, its tendency is to tilt upwardly the flange of the sponge rubber, but at the same time the horizontal portion of the cover-plate strikes this flange pushing it down so that the surface skin which is always found on molded sponge rubber articles is substantially stretched, keeping both points of contact under considerable tension and keeping a small air space between these joints. If any water collects against the flange of the cover-plate and there is a point of leakage so that it is forced past this first seam, the air will lose velocity in the open space between the two sealing joints and the moisture will tend to splatter against the sides of this space and run back down to the lowest point. As a result, practically no water will be carried up to the second sealing joint and thus cannot be carried into the body of the car. If water has collected around the cover-plate while it is closed (as for example when the car is washed) and the cover-plate is opened, there is no danger of such water being spilled through on to the legs of the occupants of the car, for the rubber flange will rise up to a point above the body line before a free passage for the water is open, and such water will quickly dry up as the car is used. If desired, the flange on the rubber body may be given a reverse turn so that wind pressure from the outside will tend to force it more tightly against the cover-plate, but this ordinarily is not necessary.

My invention may be readily understood from the illustrative example shown in the accompanying drawings. In these drawings, Fig. 1 is a view showing a portion of the cowl and the ventilator with the rubber seal in place; Fig. 2 is a sectional view showing the cover-plate partly open; Fig. 3 is a view similar to Fig. 2 showing the cover-plate closed; and Fig. 4 is a view similar to Fig. 2 illustrating the force exerted on the rubber seal by a member similar to the flange on the cover-plate.

In the drawings, 10 is the usual cowl of the automobile body having a ventilator opening 12 provided with a cover 14 hinged in the usual manner so that when the cowl is opened all four edges will be lifted above the cowl 10. The cover 14 has a downwardly depending flange 16 which runs entirely about its perimeter. Around the hole 12, the metal which forms the cowl 10 is bent downwardly and then inwardly to form a hook as clearly shown at 18 in Figs. 2, 3, and 4. It is to be understood that the hook 18 runs entirely around the hole 12. Snapped into the recess formed by the hook 18 is a mass of sponge rubber 20 which is preferably made in one piece to surround the hole 12. On the inside upper edge the mass of sponge rubber is extended inwardly to form the flange 22 which preferably extends slightly above the line of the cowl 10. If a piece of flat metal similar to the flange 16 on the cover-plate 14 were pushed down into the mass of sponge rubber outside of the hook 18, as indicated at 24 in Fig. 4, the sponge rubber below such piece of metal would be

compressed, and the tension along the skin surface would cause the flange 22 to tilt upwardly to the position shown in Fig. 4. In actual practice when the cover-plate 14 is closed, the flat portion of the plate will strike the flange 22 while the flange 16 is entering the mass of the rubber and will push the flange 22 down to the position shown in Fig. 3, while the pressure of flange 16 tends to raise it, thus even further increasing the tension on the surface of the rubber so that a space 26 will be left open along the line where the flange 16 joins the cover-plate 14. If any water collects around the cover-plate outside of the flange 16 and the wind pressure becomes great enough to force particles of this water past the flange 16, such water will be sprayed into the space 26 and simply flow back to the bottom of the space unless sufficient water leaks in to fill practically all of the space around the cover-plate. Thus very little water will be brought up to the line of contact between the flange 22 and plate 14 and this contact will be under considerable tension to prevent such water from being forced inside the car.

It is to be understood that the example given is by way of illustration only, and may be modified in many particulars and details without departing from the spirit of my invention.

What I claim is:

1. A cowl ventilator construction for automobiles comprising in combination, a cowl member having a ventilator opening, a sponge rubber body positioned around such opening with an upturned flange at its inner edge, and a cover member having a downwardly extended flange adapted to compress the body of sponge rubber and thereby tend to tilt the flange of the sponge rubber body upwardly while said cover member presses against such rubber flange to depress the same.

2. A construction as specified in claim 1, in which said sponge rubber body is positioned with its outer edge substantially at the level of the cowl member adjacent such edge.

3. In combination, a support frame, a sponge rubber body held in such frame with one edge free, an upturned flange on such free edge and a cover member having a flat portion and a down-turned flange adapted to be moved towards said frame so that such down-turned flange of the cover member will compress the body of sponge rubber and thereby tend to tilt the flange of the sponge rubber body towards the flat portion of such member while such flat portion presses such flange in the opposite direction.

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