

April 22, 1924.

1,491,005

A. J. FAUSEK ET AL
VENTILATOR FOR AUTOMOBILES

Filed Sept. 30, 1921 2 Sheets-Sheet 1.

Fig. I.

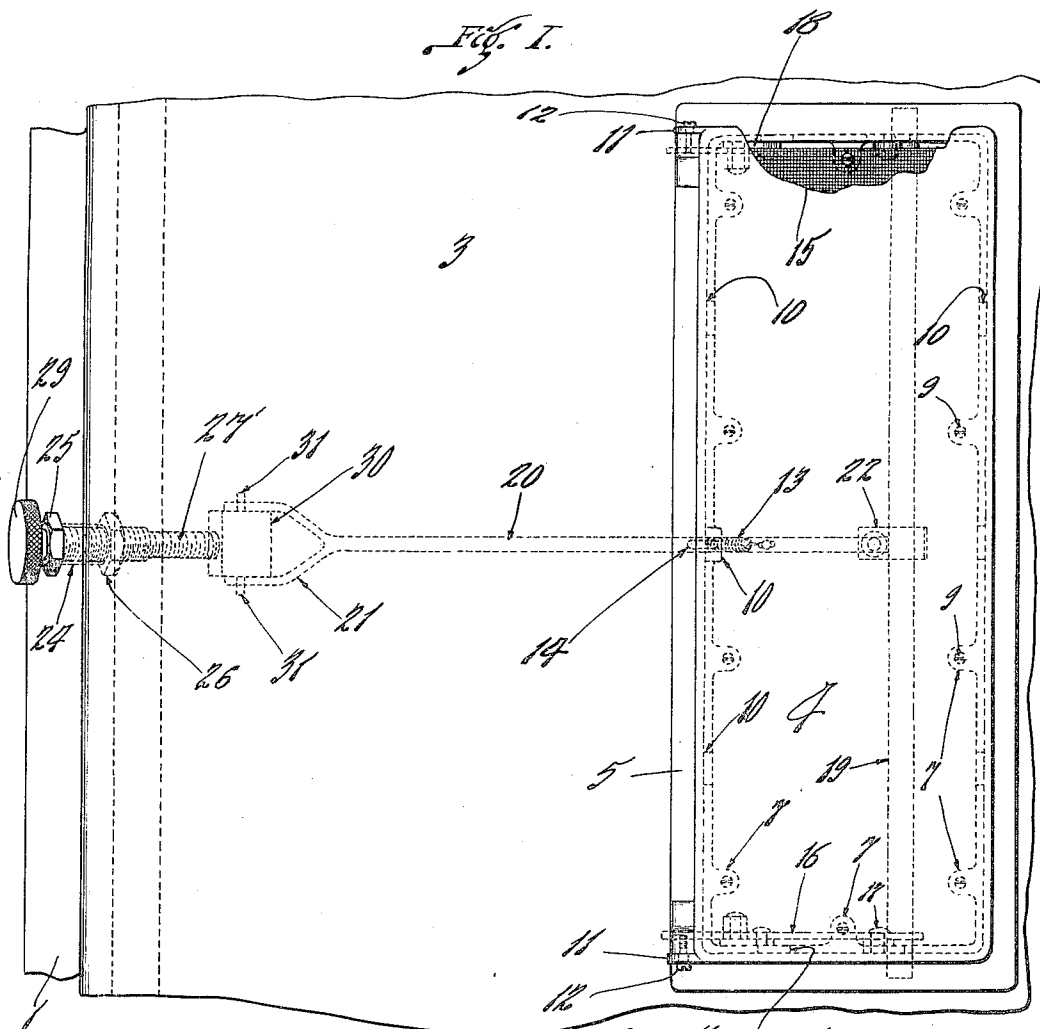
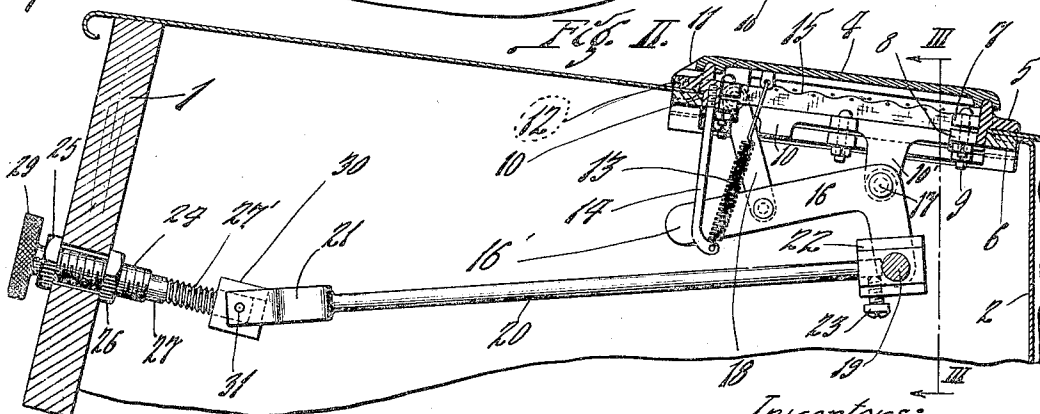


Fig. II.



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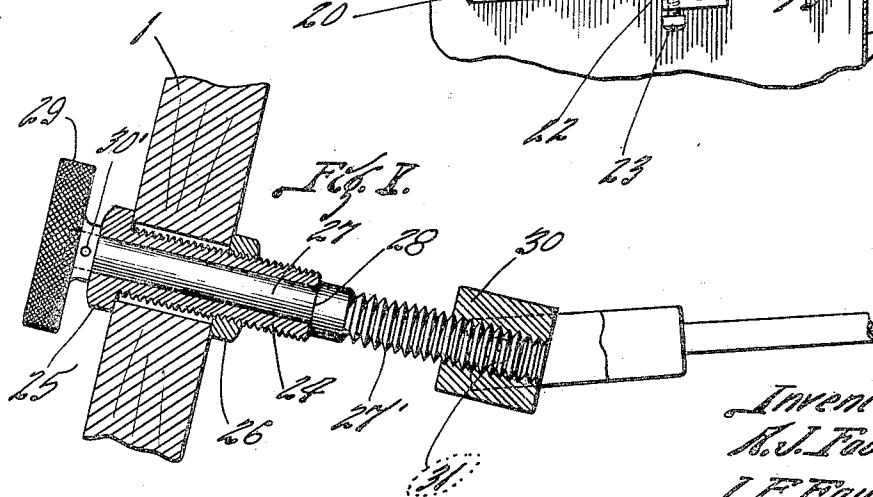
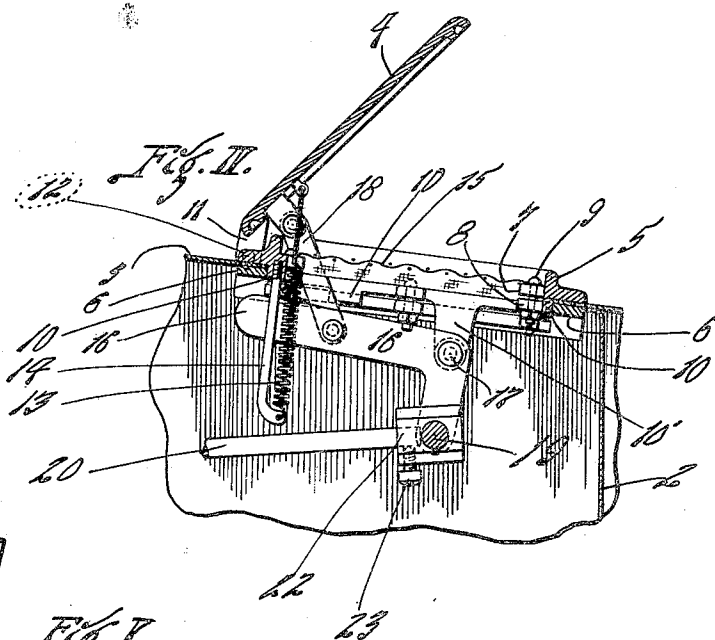
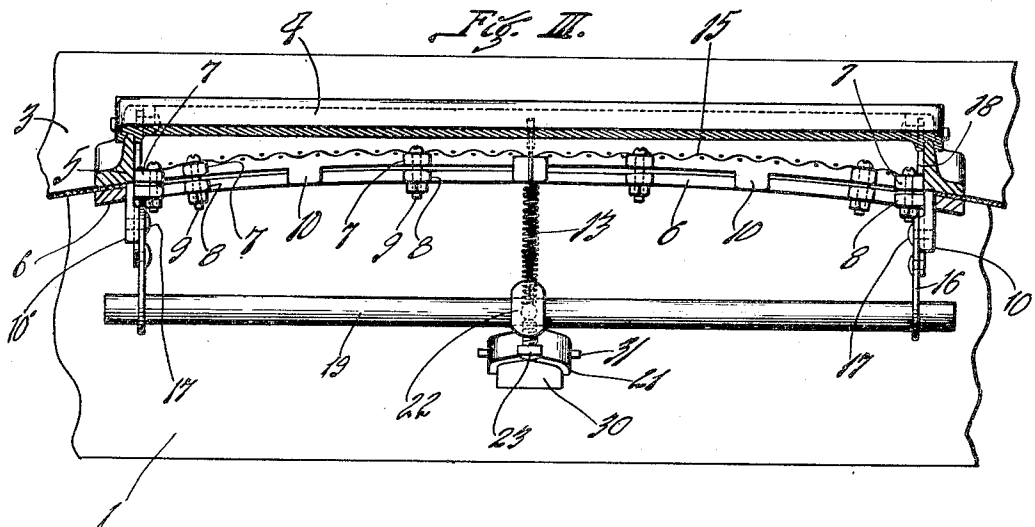
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

ARTHUR J. FAUSEK AND IRWING F. FAUSEK, OF ST. LOUIS, MISSOURI.

VENTILATOR FOR AUTOMOBILES.

Application filed September 30, 1921. Serial No. 504,438.

To all whom it may concern:

Be it known that we, ARTHUR J. FAUSEK and IRWING F. FAUSEK, citizens of the United States of America, and residents of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Ventilators for Automobiles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in ventilators for automobiles, and more particularly to a ventilator adapted to be applied to the cowl, or hood, of an automobile. The main object of the invention is to overcome the various defects that have heretofore been found in ventilators of this kind.

Considerable difficulty has been experienced in applying ventilators to automobile cowls, and especially in securing the ventilator doors to the cowls, and in properly arranging the door operating mechanism to locate the manually actuated controlling member at a desirable point on the instrument board. Therefore, one of the objects of the present invention is to produce a strong and simple means whereby the door and its frame can be easily and quickly secured to a cowl. A further object is to produce a door operating mechanism having a manually actuated controlling member that can be located at any desirable or convenient point on the instrument board. The operating connections are so combined with each other that the controlling member can be located at any convenient point within a very large area of the instrument board, where it will not in any way interfere with the other instruments.

An object of the invention is to very materially reduce the labor and expense of applying the ventilator to an automobile, and to produce a structure that can be readily applied to the various types of automobiles. In the device herein disclosed, the ventilator door and all of the elements of the door operating means can be connected to the door frame, and this is an important advantage in assembling the structure and applying the same to an automobile.

With the foregoing and other objects in view, the invention comprises the novel construction, combination and arrangement of

parts hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown the preferred embodiment of the invention. However, it is to be understood that the invention comprehends changes, variations and modifications which come within the scope of the claims hereunto appended.

Briefly stated, the structure herein shown comprises a door frame that can be easily and quickly clamped onto the cowl, and the securing means are preferably located within the frame, so it is not necessary to drill bolt holes or the like in the cowl. The door operating means includes a hand operated member adapted to be located on the dash, or instrument board, and an adjustable flexible operating connection through which motion is transmitted from said hand operated member to the door. This operating connection permits the hand operated member to be located at any point within a very large area of the instrument board. A door closing spring and a stop device are adapted to cooperate with the flexible operating connection to avoid looseness and rattling of the pivotally connected elements in the flexible connection.

Fig. I is a top or plan view showing a portion of an automobile cowl equipped with a ventilator embodying the features of this invention, a portion of the ventilator door being broken away to show the screen and other elements below the door.

Fig. II is a vertical section of the structure shown in Fig. I.

Fig. III is a section taken approximately on the line III—III in Fig. II.

Fig. IV is a vertical section illustrating the door, door frame and parts adjacent thereto, the door being shown in its open position.

Fig. V is an enlarged vertical section showing a portion of the instrument board and the manually operated controlling member rotatably mounted therein.

To illustrate the invention, we have shown an instrument board 1, a partition 2 in front of the instrument board and a cowl 3 over said board and partition. At any desired point between the instrument board and partition, the cowl is provided with an elongated opening adapted to be closed by a long door 4. When this door is open, an air current is permitted to pass through the elongated opening.

gated opening and under the instrument board 1 to the operator's compartment below and at the rear of the instrument board.

5 designates a door frame having upwardly extending flanges adapted to enter recesses in the bottom of the door 4, as shown by Figs. II and III, said frame also having approximately horizontal flanges seated upon the top face of the cowl 3. A clamping frame 6 is arranged inside of the cowl so as to lie directly opposite to the door frame 5, said clamping frame being in contact with the inner face of the cowl. Lugs 7 extend inwardly from the door frame, and similar lugs 8 extend inwardly from the clamping frame 6, each lug 7 being located directly above a lug 8. Connecting bolts 9 pass through the lugs 7 and 8 to clamp portions of the cowl 3 between the door frame 5 and the clamping frame 6. Each bolt 9 is provided with a head arranged over a lug 7 and a nut below a lug 8. These bolts are surrounded by the frames 5 and 6, and they can be easily tightened to secure the frames to the cowl.

Alining lugs 10 extend downwardly from the door frame 5 so as to project through the opening in the cowl, said lugs being surrounded by the clamping frame 6 which lies within the cowl. These alining lugs 10 are adapted to engage the clamping frame 6 to determine the relative positions of the frames 5 and 6, and they are adapted to engage the wall of the opening in the cowl 3 so as to determine the locations of the frames with respect to the opening in the cowl. When the parts are assembled the lugs 10 cooperate with the connecting bolts 9 to prevent displacement of the frames 5 and 6. The frames are thus securely fastened to the cowl without drilling bolt holes or the like in the cowl.

The door 4 is provided with ears 11 adapted to receive pivot pins, or hinge pins 12 (Fig. I) whereby the door is hinged to the frame. A tension spring 13 (Figs. II and IV) is secured at its upper end to the door 4, the lower end of said spring being secured to a finger 14 screwed into and extending downwardly from one of the lugs 10 on the door frame 5. This spring tends to close the door. Before describing the door-controlling mechanism we will refer to a screen 15 surrounded by the door frame 5 and seated upon the lugs 7 which extend inwardly from said frame. The bolts 9 pass through the screen 15 and secure the same on the lugs 7. The door-closing spring 13 is formed with a straight wire strand at its upper end, and this strand passes through the screen 15.

The means for controlling the door 4 preferably comprises a pair of levers 16 in the form of bell-cranks pivoted at 17 to lugs 10' which extend downwardly from the end members of the elongated door frame 5.

Connecting links 18 are pivoted to the door 4 and also to the respective levers 16. These links 18 extend through the frames 5 and 6 and they lie between the ends of the screen 15 and the frame 5, so it is not necessary to form slots in the screen to receive said links 18.

The levers 16 are operatively connected together through the medium of a connector 19 in the form of a long pivot rod passing through the lower ends of said levers. 20 designates a pushing and pulling rod provided with a fork 21 at one of its ends, and having its opposite end arranged in a socket 22 pivotally supported on the rod 19. The rod 20 is secured to the socket 22 through the medium of a set screw 23.

24 designates a bearing sleeve (Figs. II and V) extending through the instrument board 1 and having a head 25, the outer face of said sleeve being threaded to receive a nut 26 which co-operates with the head 25 to secure the sleeve to the instrument board. An operating rod 27 (Figs. II and V) is rotatably mounted in the sleeve 24, and this rod has a threaded extension 27' beyond the sleeve and a shoulder 28 adapted to engage the inner end of the sleeve as shown by Fig. V. An operating handle 29, preferably in the form of a knob, is secured to the rod 27 through the medium of a pin 30' (Fig. V) and this knob or handle engages the outer end of sleeve 24 so as to cooperate with the shoulder 28 in preventing longitudinal displacement of the rotatable operating rod 27.

30 designates a non-rotary nut mounted on the threaded extension 27' and provided with pivot pins 31 (Figs I and II) which extend through the end portions of the fork 21.

It will now be readily understood that the door operating means comprises a hand operated controlling member 29 adapted to be located on the instrument board, and a flexible operating connection through which motion is transmitted from said member 29 to the door. This flexible operating connection includes the pushing and pulling rod 20 pivoted to the nut 30 and also to the connecting rod 19 which diverges from the rod 20 to the bell crank levers 16, so as to simultaneously transmit motion to both of the levers 16. This flexible operating connection permits the manually operated handle 29 to be located at any point within a very large area on the instrument board 1, so the operating member can be readily located at a convenient point where it will not in any way interfere with the other instruments, and it is plain that when said manually operated handle 29, and the operating rod 27 on which it is mounted, are rotated, the nut 30 will be moved longitudinally of the threaded portion 27' of said rod 27,

whereby oscillatory movement will be imparted to the levers 16 through the pushing and pulling rod 20 to open or close the door 4, depending on the direction of rotation of said manually operated handle. Fig. II shows that the horizontally disposed pivotal connections at 19 and 31 permit the bearing sleeve 24 to be located in different horizontal planes, and the socket 22 can be moved horizontally on the rod 19 to locate said sleeve 24 in different vertical planes. The pivotal connection at 31 also allows the bearing sleeve 24 and operating rod 27 to occupy inclined positions. It will now be understood that the operating elements just referred to provide a universal adjustment which allows them to be properly located at the most convenient points.

The pushing and pulling rod 20 is made long enough to extend from the nut 30 to the socket 22 when the ventilator door is located at the maximum distance from the instrument board 1, and after the apparatus has been applied to an automobile, the forward end of this rod can be cut off to make the rod conform to the required measurement. The rod 20 is then secured in the socket 22 by means of the set screw 23.

In manufacturing the device, the rod 27, knob 29 and bearing sleeve 24 are assembled as shown by Fig. V, and in applying the same to an automobile it is only necessary to form a hole through the board 1 through which the sleeve 24 is inserted and thereafter secured by means of the nut 26. The threaded extension 27' is preferably smaller in diameter than the threaded portion of the sleeve 24, so this extension 27' freely passes through the hole in the instrument board. The bell crank lever 16, links 18, connecting rod 19 and socket 22 can all be assembled by the manufacturer, for all of these elements are connected to the door frame. The door and its closing spring 13 are also connected to the door frame. After all of these elements have been secured to the door frame, the device can be very easily applied to an automobile by merely securing the door frame at the opening in the cowl. In addition to this, it is only necessary to secure the bearing sleeve 24 in the instrument board, and to connect the rod 20 to the socket 22.

To prevent rattling of the various pivotally connected elements, when the door is closed, the operating rod 27 is turned to force the nut 30 toward the knob 29, thereby firmly forcing the door onto its seat and at the same time tightening all of the pivotal connections. The bell crank levers 16 are provided with extended ends 16' (Figs. II and IV) adapted to engage the clamping frame 6 when the door is located in its extreme open position. These extensions 16' limit the motion of the operating

mechanism, and after said extensions are engaged with the frame 6, the operating knob can be turned to tighten all of the pivotal connections, excepting the pivots at the ends of links 18, and the last mentioned pivots are tightened through the medium of the spring 13 which tends to close the door.

We claim:

1. An automobile cowl having an opening, a rectangular door frame arranged outside of said opening and provided with extensions which extend through said opening, an inner frame located inside of the cowl and surrounding said extensions, said extensions being located on the end and on the side portions of said rectangular frame and being adapted to engage said inner frame and the wall of said opening to determine the locations of said frames relative to said opening, and securing means connecting said frames.

2. An automobile cowl having an opening, a door frame arranged outside of said opening and provided with extensions which extend through said opening, an inner frame located inside of the cowl and surrounding said extensions, said extensions being parallel with the wall of the opening throughout their length and said extensions being adapted to engage said inner frame and said wall of said opening to determine the locations of said frames relative to said opening, and securing means connecting said frames, said securing means comprising clamping screws whereby said frames are forced toward each other to clamp portions of the cowl between them.

3. An automobile cowl having an opening provided with a door frame outside of the cowl, a rectangular door hinged to said door frame, a rectangular clamping frame arranged inside of the cowl and opposite to said door frame, lugs extending inwardly from said door frame, lugs extending inwardly from said clamping frame, connecting bolts passing through said lugs to clamp portions of the cowl between said frames, and alining lugs extending from one of said frames and surrounded by the other frame, said alining lugs being located on the end and on the side portions of said rectangular door frame and being adapted to engage the last mentioned frame to determine the relative positions of the frames.

4. An automobile cowl having an opening provided with a rectangular door frame outside of the cowl, a door hinged to said door frame, a rectangular clamping frame arranged inside of the cowl and opposite to said door frame, lugs extending inwardly from said door frame, a screen seated on said lugs and surrounded by said door frame, lugs extending inwardly from said clamping frame, connecting bolts passing through said lugs and said screen to clamp portions of the

cowl between said frames, and alining lugs extending from one of said frames and surrounded by the other frame, said alining lugs being located on the end and on the side portions of said rectangular door frame and being adapted to engage the last mentioned frame to determine the relative positions of the frames.

5 5. An automobile cowl having an opening provided with a rectangular door frame outside of the cowl, a door hinged to said door frame, a rectangular clamping frame arranged inside of the cowl and opposite to said door frame, lugs extending inwardly from said door frame, a screen seated on said lugs and surrounded by said door frame, lugs extending inwardly from said clamping

frame, connecting bolts passing through said lugs and said screen to clamp portions of the cowl between said frames, and alining lugs extending from one of said frames and surrounded by the other frame, said alining lugs being located on the end and on the side portions of said rectangular door frame and being adapted to engage the wall of the opening in the cowl and the inside faces of the end and side members of the clamping frame to determine the relative positions of the frames. 20 25

In testimony that we claim the foregoing we hereunto affix our signatures. 30

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