Sept. 1, 1959 R. M. GORMAN ET AL 2,902,102

BUMPER EXHAUST

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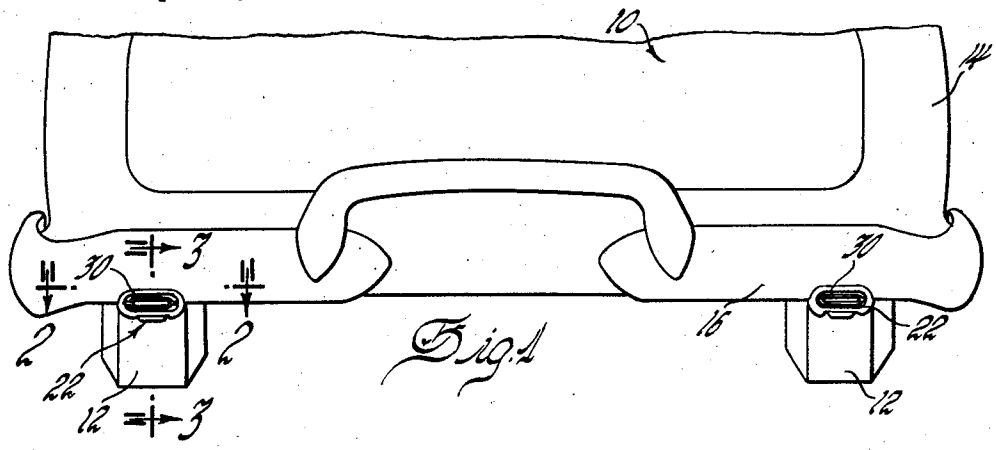


Fig. 1

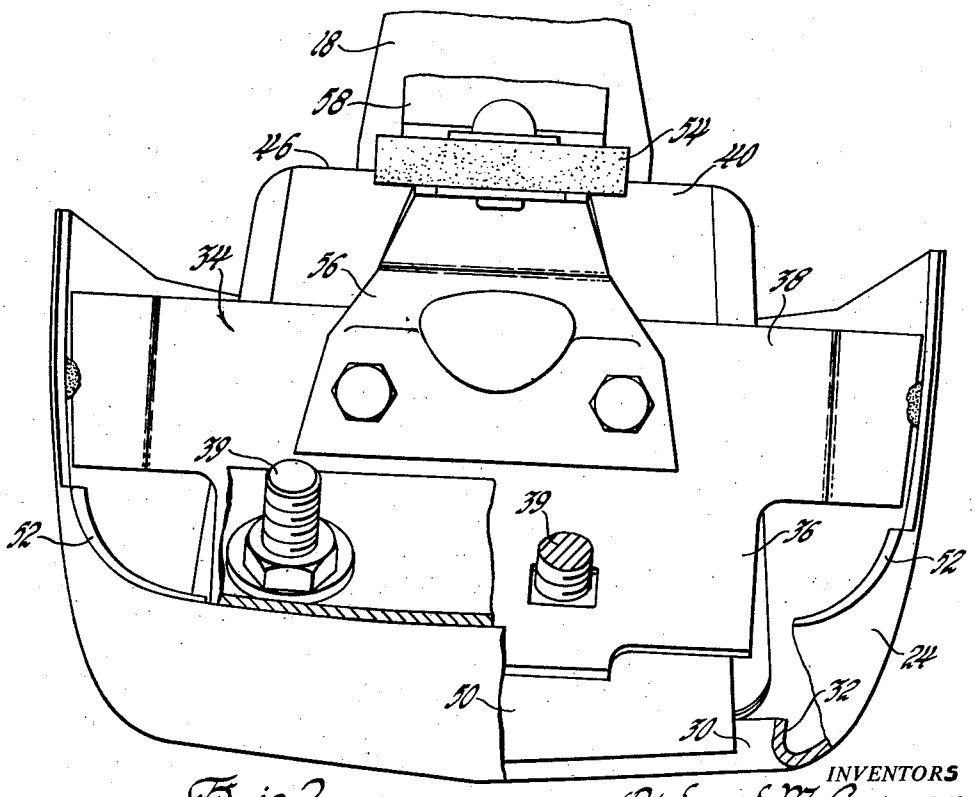


Fig. 2

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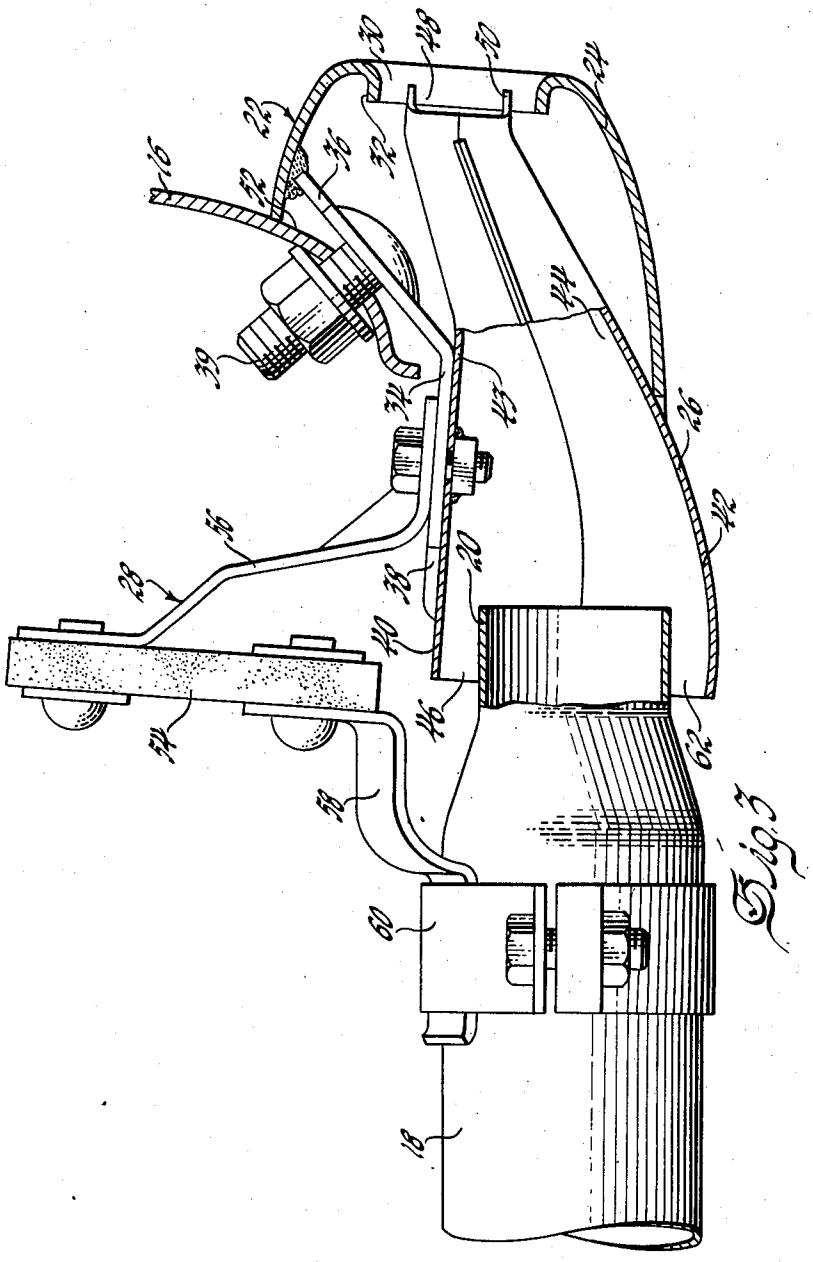


Fig. 3

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BUMPER EXHAUST

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4 Claims. (Cl. 180—64)

The present invention relates to exhaust means for an automotive vehicle and more particularly to means for discharging engine exhaust gases into the atmosphere by way of an opening in a body member such as a bumper.

In automotive vehicles, it is desirable to discharge the engine exhaust gases from the rear of the vehicle so that they will not enter the vehicle and endanger the occupants thereof. It is desirable that the discharge end of the exhaust pipe be located as far aft as possible and be positioned away from any obstructions that might otherwise prevent a free discharge of the exhaust gases directly into the atmosphere. Heretofore, it has been the practice to merely terminate the exhaust tailpipe slightly below and forward of the rear bumper. This not only results in frequent damage to the tailpipe but also the bare end of a rusty, etc. exhaust pipe produces an unsightly appearance.

It is now proposed to provide an exhaust means for supporting the discharge end of the exhaust pipe adjacent the rear bumper in a manner that will not only reduce the likelihood of damage to the exhaust pipe but will also form a decorative addition to the rear bumper. This is to be accomplished by providing a decorative outlet bezel which may be secured to a rear bumper so that the exterior thereof will be visible from the rear of the vehicle. This bezel preferably has an aperture or outlet port formed therein. A tubular extension may be disposed inside of the bezel with the outlet end thereof being disposed in said aperture. A sound deadening support may support the discharge end of the exhaust pipe inside of the transition member in spaced relation thereto. Thus the sound deadening member will prevent the transfer of any objectionable vibrations from the exhaust system to the bumper and the vehicle body. At the same time the exhaust gases will flow from the exhaust pipe through the extension and into the atmosphere from the aperture in the bezel. By placing the outlet end of the tailpipe in spaced relation to the inside of the tubular extension, a vent will be formed for the flow of atmospheric air therethrough. Since the tubular extension opens forwardly, movement of the vehicle will cause the cool air in the atmosphere to flow through the tubular extension. In addition, the discharge end of the tailpipe may be necked down slightly to increase the velocity of the gases discharged into the tubular extension and thereby produce a jet effect to increase the flow of atmospheric air through the vent. This cool air will tend to form a protective envelope of air around the hot exhaust gases and/or mix therewith and will tend to prevent the hot exhaust gases coming into intimate contact with the decorative surfaces of the bumper and the bezel. Also this air will tend to reduce the temperature of these parts. The tubular extension may also be shaped so as to allow the corrosive liquids condensing out of the hot exhaust gases to drain therefrom without contacting the bezel or bumper members.

In the two sheets of drawings:

Figure 1 is a fragmentary end view of an automotive vehicle employing the present invention.

Figure 2 is a cross sectional view taken substantially along the plane of line 2—2 in Figure 1.

Figure 3 is a cross sectional view taken substantially along the plane of line 3—3 in Figure 1.

Referring to the drawings in more detail, the present invention may be adapted for use on any suitable automotive vehicle 10. In the present instance this vehicle 10 is supported by ground engaging wheels 12 and includes a body 14 having a rear bumper 16 extending across the rear end thereof. The vehicle 10 is propelled by an engine mounted in the forward portions thereof and includes an exhaust system having tailpipes 18 that terminate adjacent the rear bumper 16. In order to support the discharge ends 20 of these tailpipes 18 and insure a harmless discharging of the exhaust gases past the bumper 16, exhaust means 22 may be provided on the rear bumper 16.

In the present instance each of these exhaust means 22 include a decorative bezel 24, a tubular extension 26 and a support 28. The bezel 24 is a dished member having a generally elliptical cross section and a similarly shaped outlet port 30 formed in the rear end thereof. It should be noted that this port 30 may be of any desired shape and, if desired, an inwardly turned flange 32 may be formed around the port 30. The top and bottom of the forward side of the bezel 24 may be cut out. The top is preferably shaped to fit the outer contour of the bumper 16. A web 34 may be welded onto the inside of the bezel 24 to form an inclined portion 36 that extends along the bumper 16 and a substantially horizontal portion 38 that extends therebelow. The inclined portion 36 of the web 34 may include a pair of openings positioned to register with similar openings in the bumper whereby the web 34 and bezel 24 may be fastened to the bumper 16 by bolts 39, and are thereby retained rigidly secured in position.

The tubular extension 26 may comprise a pair of stamped sheet metal pieces 40 and 42 which are dished and secured together to form a passage 44 therebetween suitable for the flow of exhaust gases therethrough. The upper dished member 40 may include a flat portion 43 adapted to fit onto the horizontal portion 38 of the web 34 and be bolted thereto. The inlet end 46 of the passage 44 is substantially circular to correspond to he shape of the discharge end 20 of the tailpipe 18 while the outlet end 48 is substantially elliptical to correspond to the outlet port 30 in the bezel 24. Thus the height of the passage 44 decreases and the width increases towards the outlet end 48. The outlet end 48 of the tubular extension 26 preferably terminates inside of the outlet port 30 and forms a decorative flange 50 in spaced relation to the inwardly turned flange 32. Thus it will be seen that some air will be free to circulate inwardly through cutout portions 52 of the web 34 and the space between the end of the tubular extension 26 and the flange 32 on the outlet port 30.

The discharge end 20 of the tailpipe 18 may be carried by the sound deadening support 28 which includes a member 54 of some suitable sound absorbent material. One end of this member 54 is bolted to a bracket 56 secured to the horizontal portion 38 of the web 34 by a bolt. The other end of the member 54 is bolted to a bracket 58 secured to the tailpipe 18 by means of a split ring clamp 60. It will thus be seen that this support 28 will prevent the transmission of any noises and vibrations from the exhaust system to the bumper structure 16 and the body 14. At the same time the end 20 of the tailpipe 18 will be retained inside of the tubular extension 26. Thus the exhaust gases may flow through the tubular

extension 26 and out the port 30 in the atmosphere. It is desirable for the tailpipe 18 to be spaced from the tubular extension 26 so as to form an atmospheric vent 62 therebetween. Accordingly, it will be possible for atmospheric air to circulate between the discharge end of the exhaust pipe and into the interior of the tubular extension 26. Since the extension 26 opens forwardly, the inlet end will act as a scoop and the forward movement of the vehicle 10 will produce a blast of cool air through the vent 62. In addition, the outlet 20 of the tailpipe 18 may be tapered or necked down to increase the velocity of the exhaust gases and thereby produce a jet effect which will cause a flow of cool air that will supplement that produced by movement of the vehicle. This flow of atmospheric air will tend to form an envelope around the hot exhaust gases which will prevent the hot gases coming into intimate contact with the exterior surfaces of the bumper 16 and/or bezel 24, and also, this will tend to partially mix with the exhaust gases and thereby reduce the temperature thereof. Also the flow of air will tend to cool the tubular extension 26, the bezel 24 and the bumper 16. It will thus be seen that the detrimental effects of the hot engine exhaust gases on these parts will be materially reduced.

In addition, the bottom of the inlet end 46 of the tubular extension 26 may be considerably below the outlet end 48. Thus if there is any liquid condensate in the exhaust gases, they will be able to drain from the forward end of the tubular extension 26 and thus be prevented from contacting the exterior of the bezel 24.

It is to be understood that, although the invention has been described with specific reference to a particular embodiment thereof, it is not to be so limited since changes and alterations therein may be made which are within the full intended scope of this invention as defined by the appended claims.

The claims:

1. Exhaust means for an automotive vehicle having a bumper member and an engine with an exhaust pipe for discharging the engine exhaust gases therefrom, said exhaust means comprising a hollow bezel having a cavity on the inside thereof and an outlet port, a web secured to the inside of said bezel in said cavity, said web having fastening means thereon for attachment to said bumper member for retaining said bezel on said bumper member, a tubular extension secured to said web with the outlet end thereof terminating adjacent said port, the other end of said extension forming an inlet adapted to receive the discharge end of said exhaust pipe, a flexible insulating member having one end secured to and supported by said web, the other end of said insulating member including a coupling, and means securing said coupling to said exhaust pipe, said flexible insulating member and said coupling being positioned relative to said web and said extension movably to support said exhaust pipe inside of said tubular extension and in spaced relation thereto.

2. Exhaust means for an automobile vehicle having a bumper member with a decorative exterior surface and an engine with an exhaust pipe for discharging the engine exhaust gases therefrom, said exhaust means comprising a hollow bezel having a cavity inside thereof and an outlet port on one end thereof, the other end of said bezel forming a surface complementary to said exterior surface, a web secured to the inside of said bezel in said cavity, fastening means on said web for attachment to said bumper for retaining said complementary surfaces in contact, a tubular extension secured to said web with the outlet end thereof terminating adjacent said port, the other end of said extension being positioned to receive the discharge end of said exhaust pipe, an elongated flexible insulating member having one end thereof secured to and supported by said web, the other end of said insulating member including attaching means supporting the discharge end of said exhaust pipe inside of said extension and in spaced relation thereto, and means securing said coupling to said exhaust pipe, said flexible insulating member and said coupling movably supporting said exhaust pipe within said extension.

3. In an automotive vehicle having an engine, the combination of an exhaust pipe for discharging the engine exhaust gases therefrom, a bumper member extending across one end of said vehicle and forming a convex exterior surface, a hollow bezel having an outlet port in one end thereof, the other end of said bezel forming a concave complementary surface mating with said convex exterior surface, a web secured to the inside of said bezel and fastened to said bumper to retain said complementary surfaces in tight engagement, a tubular extension secured to said web with the outlet end thereof terminating inside of said port in spaced relation thereto, the other end of said extension forming an inlet receiving the discharge end of said exhaust pipe, a bracket mounted on said web and projecting upwardly therefrom, an elongated flexible insulating member having one end thereof secured to said bracket and having the other end thereof attached to said exhaust pipe for retaining the discharge end of said pipe inside of said tubular extension and in spaced relation thereto.

4. The combination of claim 3 wherein the discharge end of said exhaust pipe is tapered to form a jet for directing a concentrated stream of exhaust gases into said tubular extension.

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