Sept. 9, 1958 J. H. DIENER ET AL 2,851,118

BUMPER EXHAUST

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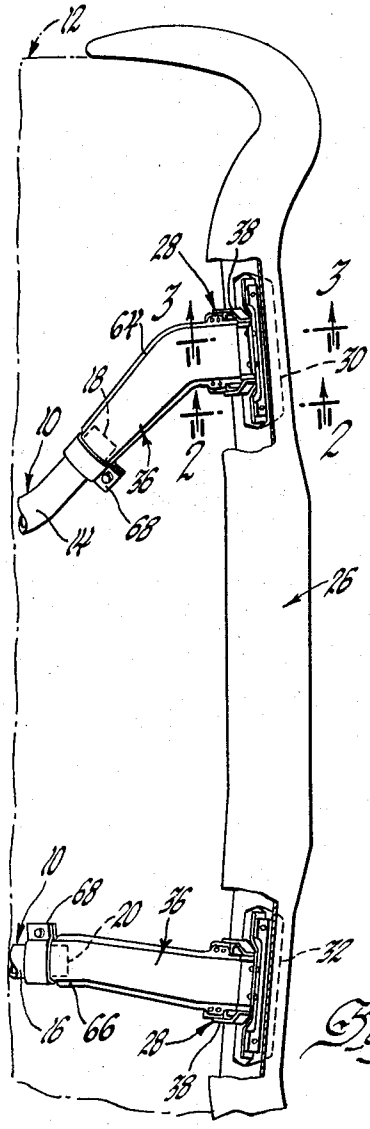


Fig. 1

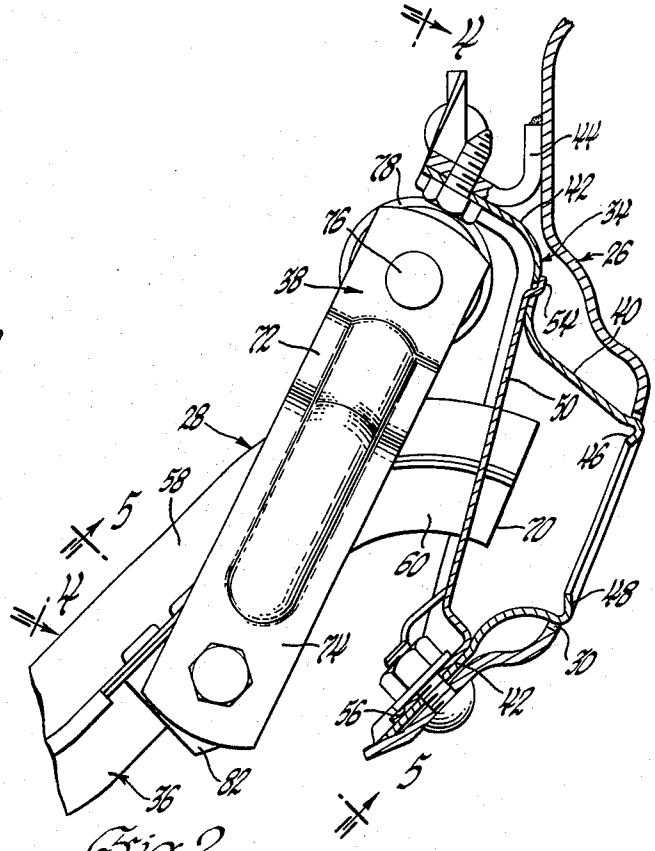


Fig. 2

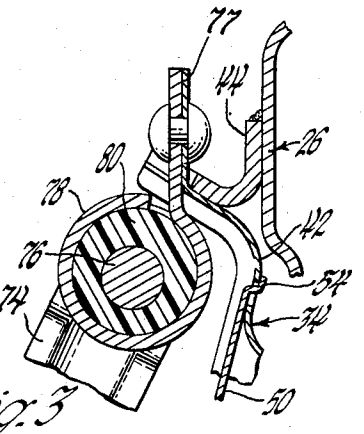


Fig. 3

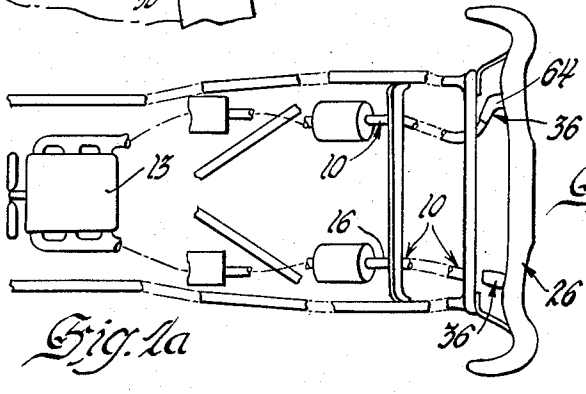


Fig. 1a

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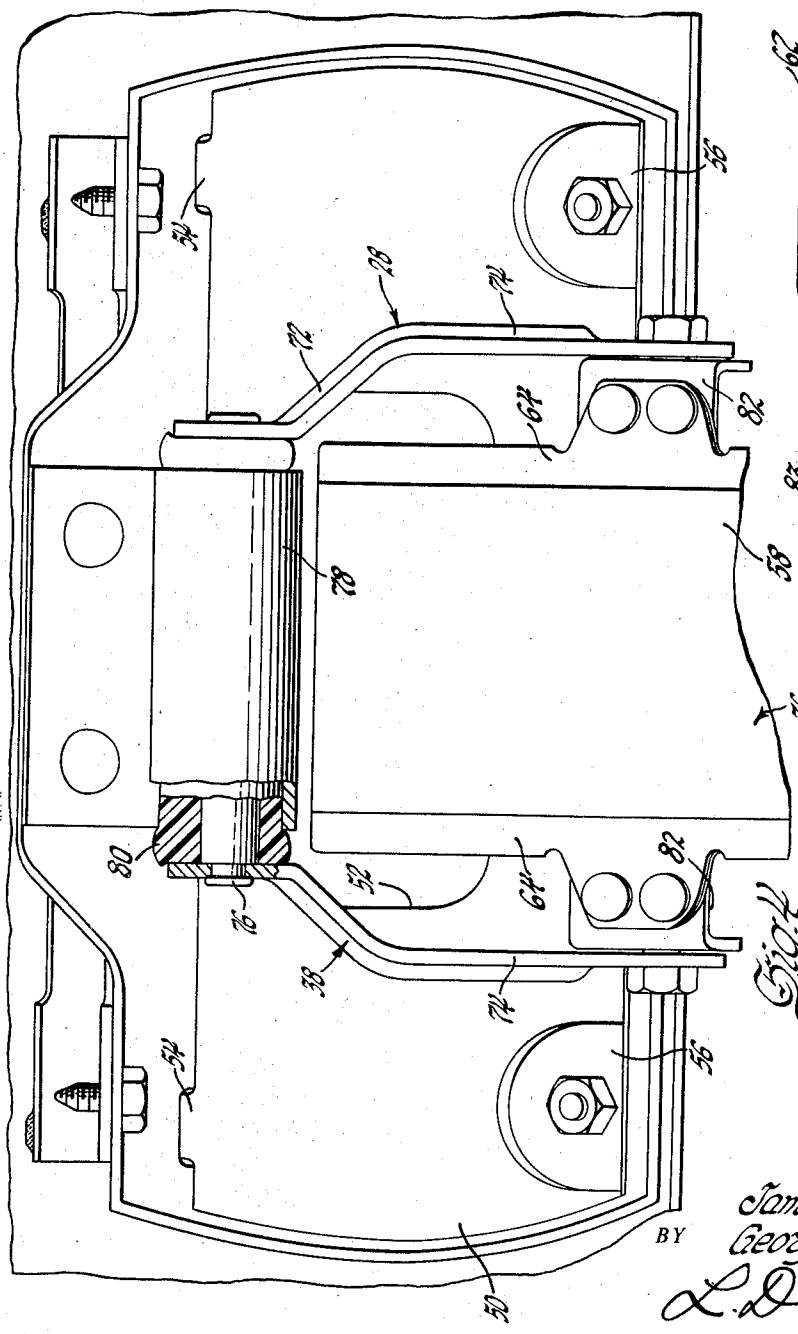


Fig. 4

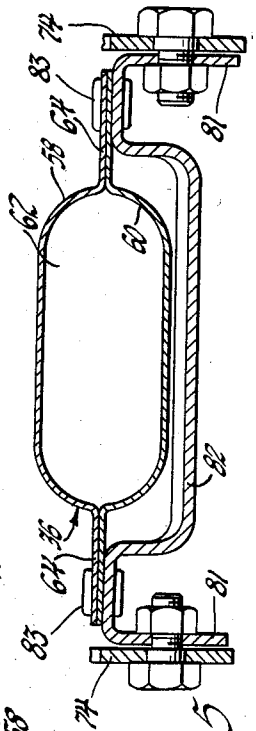


Fig. 5

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BUMPER EXHAUST

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3 Claims. (Cl. 180—54)

The present invention relates to exhaust means for an automotive vehicle and more particularly to means for directing a stream of engine exhaust gases through an aperture in a member such as a bumper.

In present day automotive vehicles, the engine is normally disposed in the front of the vehicle and an exhaust system is provided for discharging the exhaust gases from the rear of the vehicle. In order to prevent damage to the exhaust system and improve the styling of the vehicle, it may be desirable that at least the discharge end of the exhaust pipe terminate at least as high as the lower extremities of the body. Since the exhaust gases must have an unobstructed passage into the atmosphere, it is desirable to provide an opening through a member such as the rear bumper so that gases from the exhaust pipe may be discharged therethrough. Heretofore, a considerable amount of difficulty has been experienced in providing a simple, trouble-free mounting for allowing the discharge end of the exhaust system to move as a result of thermal expansion and contraction and still maintain this end in substantial alignment with the aperture in the bumper. It has also been difficult to provide simple means that are effective to prevent the transfer of vibrations from the exhaust system to the body.

It is now proposed to provide exhaust discharging means for an exhaust system which are adapted to support the discharge end of the exhaust system in substantial alignment with an aperture in a vehicle bumper at all times, irrespective of changes in the length of the exhaust system as a result of thermal expansion and contraction. This is to be accomplished by means of a hinge structure which is pivotally secured to the exhaust pipe and/or to the rear bumper adjacent the aperture in the bumper. Thus as the exhaust pipe moves, the hinge will accommodate this movement while maintaining the end of the pipe aligned with the aperture. In addition, one or more portions of the hinge structure may include a sound deadening member that will absorb any vibrations in the exhaust system and prevent their transfer to the vehicle body.

In the two sheets of drawings:

Figure 1 is a plan view of a portion of an exhaust system employing the present invention.

Fig. 1*a* is a fragmentary plan view of a chassis for an automotive vehicle embodying 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 fragmentary cross sectional view taken substantially along the plane of line 3—3 in Figure 1.

Figure 4 is an elevational view taken substantially along the plane of line 4—4 in Figure 2.

Figure 5 is a cross sectional view taken substantially along the plane of line 5—5 in Figure 2.

Referring to the drawings in more detail, the present invention may be embodied in an exhaust system **10** for an automotive vehicle **12** having an engine **13** mounted in the forward portion thereof. In the present instance

this exhaust system **10** includes a pair of exhaust pipes having separate tailpipes **14** and **16** with the discharge ends **18** and **20** thereof terminating directly in front of the vehicle's rear bumper **26**. Each of these exhaust tailpipes **14** and **16** are provided with separate exhaust means **28** that are secured to this rear bumper **26**. These means **28** support the discharge end **18** or **20** of the tailpipe **14** or **16** in substantial alignment with an aperture **30** or **32** through the rear bumper **26** so that the engine exhaust gases may be discharged directly therethrough into the atmosphere.

In this instance each of these exhaust means **28** includes a decorative bezel **34**, an exhaust pipe extension **36** and a hinge structure **38**. The present bezel **34** includes a tubular portion **40** which projects into the aperture **30** or **32** in the bumper and a base **42** that is disposed in front of the bumper **26** for being secured thereto. The lower portion of the base **42** may be secured to the bumper **26** while the upper portion is secured to a bracket **44** welded to the inside of the bumper **26**. The outer end **46** of the tubular portion **40** may have a cross sectional shape corresponding to the shape of aperture **30** or **32** in the bumper **26**. In this arrangement a generally elliptical or elongated shape is employed. In addition the outer end **46** may be rolled inwardly to form a flange **48** that is substantially flush with the exterior surface of the bumper **26**. A baffle **50** having an aperture **52** in the center thereof may have a lip **54** that extends into an opening in the top of the bezel **34** and a flange **56** that is bolted along the bottom thereof for closing the entrance to the tubular portion **40**.

The exhaust tailpipe extension **36** may be fabricated in any suitable manner. However, the present extension is a sheet metal structure. It comprises a pair of dished members **58** and **60** secured together so that a gas passage **62** will extend the length thereof and a pair of flanges **64** will be formed along the opposite sides thereof. The inlet end **66** of this extension **36** may be round to fit onto the end of the tailpipe and be rigidly secured thereto by a ring clamp **68**. The outlet end **70** of the extension **36** may be flattened to conform to the shape of the outlet end **46** of the bezel **34**. This end **46** of the extension **36** extends through an aperture in the baffle **50** and terminates in direct alignment with the tubular portion **40**.

In order to retain the end **70** of the tailpipe extension **36** properly positioned in the bezel **34**, any suitable hinge structure **38** may be provided. This hinge **38** includes a hanger **72** having a pair of legs **74** that extend around the opposite sides of the extension **36**. The upper ends of these legs **74** are secured together by a pintle **76** which is riveted thereto. This pintle **76** fits into a gudgeon **78** riveted onto a flange **77** on the upper end of the bezel **34**. A cylindrical member or bushing **80** of sound deadening material may be disposed between the pintle **76** and gudgeon **78** to permit relative rotation therebetween while preventing the transfer of vibrations from the exhaust system to the bumper structure **26**. The lower end of each hanger leg **74** is pivotally secured to a flange **81** formed by the ends of a strap **82** which extends across the full width of the tailpipe extension **36** and is riveted at **83** to the flanges **64** formed on the sides of the extension **36**.

It will thus be seen that this hinge structure **38** includes an upper and lower joint that movably supports the discharge end of the exhaust system to permit free longitudinal movement into and out of the tubular portion **40** as a result of thermal expansion or contraction. However, since the axes of the upper and lower joints are parallel to each other and normal to the direction of movement of the exhaust system and the outlet end **70** is disposed between these axes and adjacent pintle **76**,

the outlet end 70 will always be maintained in substantial alignment with the aperture throughout the normal range of movement thereof. Accordingly, the exhaust gases will be discharged directly through the aperture.

Various changes and modifications of the embodiment of the invention described herein may be made by those skilled in the art without departing from the spirit and principles of the invention.

The claims:

1. In an automotive vehicle having an apertured bumper member and an engine with an exhaust pipe for discharging the engine exhaust gases therefrom, exhaust means comprising a bracket secured to said bumper member adjacent said aperture, a tubular exhaust extension having an inlet end receiving the discharge end of said exhaust pipe, a hanger having one end pivotally secured to said bracket and the other end pivotally secured to said tubular extension to allow relative movement between said extension and said bracket while retaining the outlet end of said extension in registry with said aperture.

2. In an automotive vehicle having an apertured bumper member and an engine with an exhaust pipe for discharging the engine exhaust gases therefrom, exhaust means comprising a bracket secured to said bumper member adjacent said aperture, a tubular exhaust extension having an inlet end rigidly secured to the outlet end of said exhaust pipe, a hanger having hinge means on one end thereof secured to said tubular extension and hinge means on the other end thereof secured to said bracket, at least one of said hinge means including a pintle and gudgeon, said pintle and gudgeon being relatively rotatable with respect to each other and a bushing of insulating material therebetween the arrangement being such as to

permit relative movement between said extension and said bracket while retaining the outlet end of said extension between said hinges and in substantial registry with said aperture.

3. In an automotive vehicle having an apertured bumper member extending across one end thereof and an engine with an exhaust pipe for discharging the engine exhaust gases therefrom, the combination of a bracket secured to said bumper immediately above said aperture, a bezel having the upper end thereof secured to said bracket and the lower end thereof secured to said bumper immediately below said aperture, said bezel including a tubular portion disposed in said aperture and having an aperture in the outlet end thereof, a tubular exhaust pipe extension having the inlet end thereof connected to the discharge end of said exhaust pipe, hinge means having one end thereof secured to said bracket and the other end thereof secured to said tubular extension to allow the discharge end of said extension to project into said tubular portion and be in spaced relation thereto to permit said extension to move longitudinally and be in substantial alignment with said tubular portion.

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