Sept. 18, 1923. 1,468,241

A. LARSEN

COMBINED TORQUE ROD AND MUFFLER

Original Filed Oct. 13, 1920

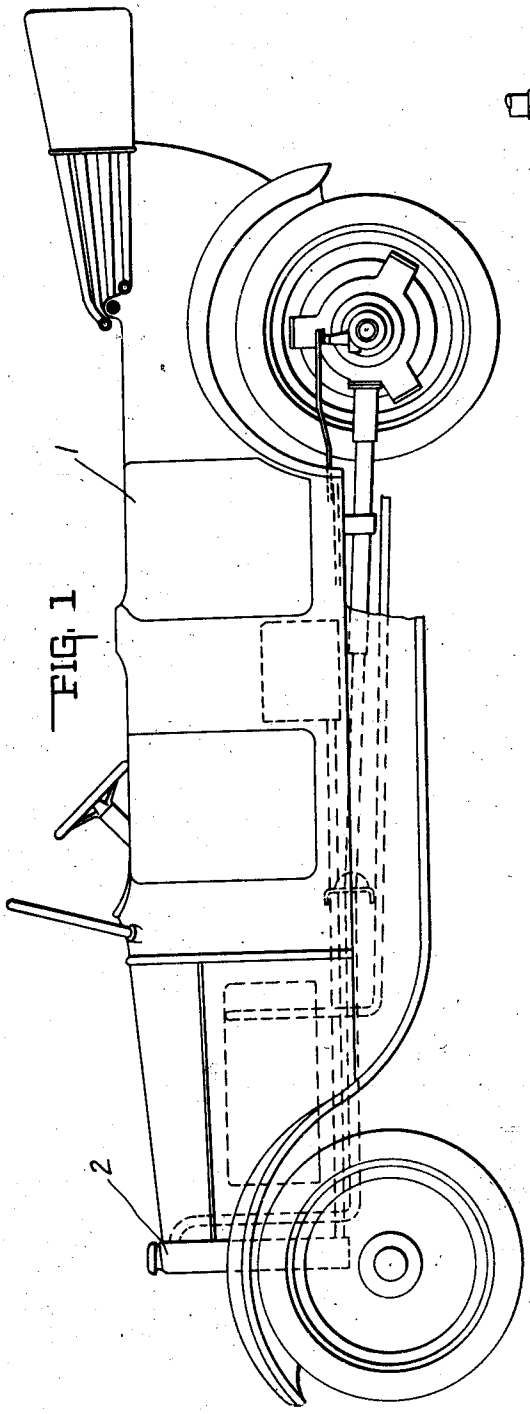


FIG. 1

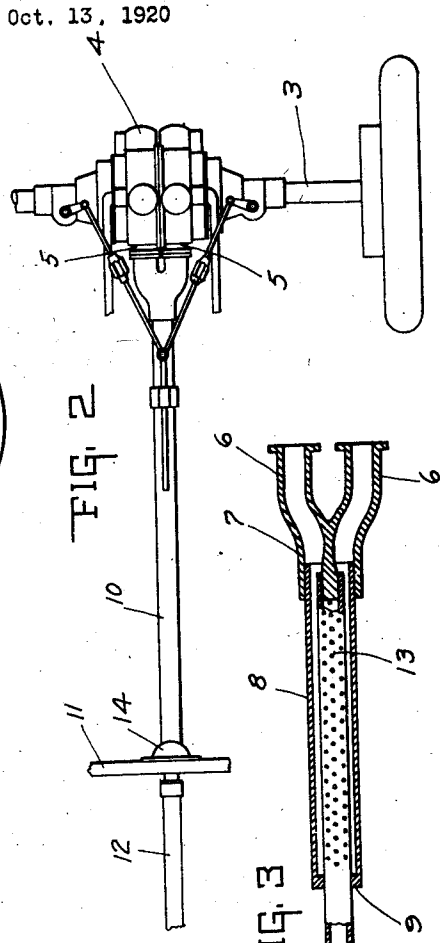


FIG. 2

FIG. 3

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UNITED STATES PATENT OFFICE.

ARNOLD LARSEN, OF INDIANAPOLIS, INDIANA.

COMBINED TORQUE ROD AND MUFFLER.

Original application filed October 13, 1920, Serial No. 416,761. Divided and this application filed June 15, 1921. Serial No. 477,665.

To all whom it may concern:

Be it known that I, ARNOLD LARSEN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Combined Torque Rods and Mufflers, of which the following is a specification.

This invention relates to a combined torque rod exhaust, and muffler for motor propelled vehicles and is a division of my former application Serial No. 416,761 filed October 13, 1920, and the prime feature of the present invention is in so constructing the torque rod for the vehicle that it will act as an exhaust, and when desired as a muffler.

A further feature of the invention is in so connecting the discharge end of the combined torque rod and muffler to the radiator, when the torque rod is used in connection with a steam operated motor, that the exhaust will be discharged into the radiator which acts as a condenser.

Other objects and advantages will be hereinafter more fully set forth and pointed out in the accompanying specification.

In the accompanying drawings,

Figure 1 is a side elevation of an automobile showing the improved torque rod and muffler applied to use thereon, and in connection with a steam propelled motor,

Figure 2 is a top plan view of the torque rod and motor, and

Figure 3 is an enlarged sectional view of one end of the combined torque rod and muffler.

Referring to the drawings, 1 indicates a vehicle having a radiator 2 at one end thereof acting as a condenser, and 3 indicates a rear axle for the vehicle upon which are mounted companion motors 4 for driving the rear axle.

The exhaust from the motors 4 is through ports 5, one for each motor, and connected with said ports are the bifurcated ends 6 of a coupling 7, and connected with the open end of said coupling is a drum 8, the forward end 9 of which is closed. Extending through the end 9 is a tubular rod 10, the forward end of which is connected to a cross plate 11 on the vehicle in such manner as to cause said tubular rod and drum to serve as a torque rod, and owing to the fact that the drum and rod are hollow they will also serve as an exhaust for the motors.

When steam operated motors are used, a flexible connection 12 is extended from the forward end of the rod 10 to the upper portion of the radiator 2, so that the steam will be returned into the radiator and condensed.

In the event that it is desired to form a muffler in connection with the torque rod and exhaust, the rear end of the tube is extended a distance lengthwise of the drum 8 through the end 9 and that portion of the rod within the drum provided with a plurality of openings 13 through which the exhaust may pass into the interior of the rod 10, and owing to the multiplicity and restricted areas of said openings they will serve to muffle the exhaust as it leaves the motors. The rod 10 has substantially a ball and socket connection with the cross plate 11, as indicated at 14 in Figure 2, so that the movement of the frame of the vehicle, in respect to the axle, may result without effecting the relative movements of said parts.

In the present instance the combined torque rod and muffler is shown in use in connection with steam propelled motors, but it will be readily understood that the same construction may be employed in connection with internal combustion engines, if desired, thereby greatly simplifying the construction of the vehicle and at the same time giving the proper bracing effect to the parts of the vehicle.

It will likewise be seen that the combined torque rod and muffler may be used in connection with a single engine as well as a pair of engines, and if the muffler portion of the device is to be dispensed with the rod 10 may be connected directly with the coupling 7, in which instance the inner end of the rod 10 would be left open. It will also be understood that the flexible connection 12 may be dispensed with in which event the exhaust will discharge directly into the atmosphere, any suitable discharge means being connected to the forward end of the pipe 10, through which the exhaust discharges.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a combined torque rod and muffler

for motor propelled vehicles, a motor mounted on a part of said vehicle and having an exhaust, a hollow pipe connected at one end to said motor and at its opposite end to parts of the vehicle at a point removed from the motor, said pipe forming an exhaust member for the motor and a torque rod between the part of the vehicle to which the motor is secured and the parts of the vehicle to which the pipe is connected.

2. In a combined torque rod and muffler for a motor propelled vehicle, a motor mounted on an axle of said vehicle, a hollow pipe connected with said motor and forming an exhaust, a muffler associated with said hollow pipe, and means for connecting one end of said pipe to a part of the vehicle at a point removed from said motor for utilizing said pipe as a torque rod between said axle and the parts to which the opposite end of the pipe is attached.

3. The combination with a motor propelled vehicle and a motor mounted on one axle thereof, said motor having an exhaust port, of a hollow pipe connected to said motor and extended a distance therefrom and forming an exhaust for the motor, means for connecting the opposite end of said pipe to parts of the vehicle for causing said pipe to act as a torque rod between the motor supporting axle and the part of the vehicle to which the opposite end of the pipe is secured, and a muffler arranged at one end of said pipe.

4. The combination with a motor propelled vehicle having a motor carried by one part thereof, of a hollow rod connected at one end to said motor and at its opposite end to parts of the vehicle for forming an exhaust for the motor said rod also forming a torque rod between the element carrying the motor and the parts of the vehicle to which the opposite end of the rod is attached.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this 10th day of June, A. D. nineteen hundred and twenty-one.

ARNOLD LARSEN. [L. S.]

Witnesses:
CAREY S. FRYE,
M. L. SHULER.