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G. PALIZZA

MANIFOLD MIXER FOR GAS ENGINES

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Fig. 1.

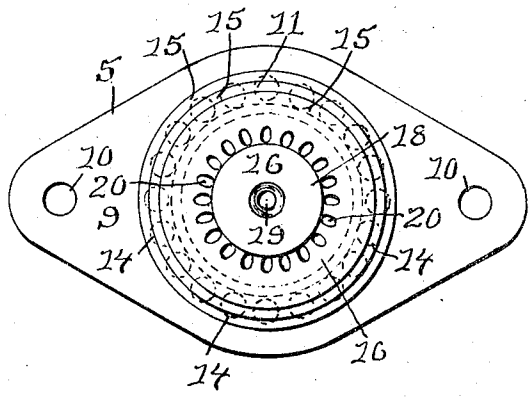
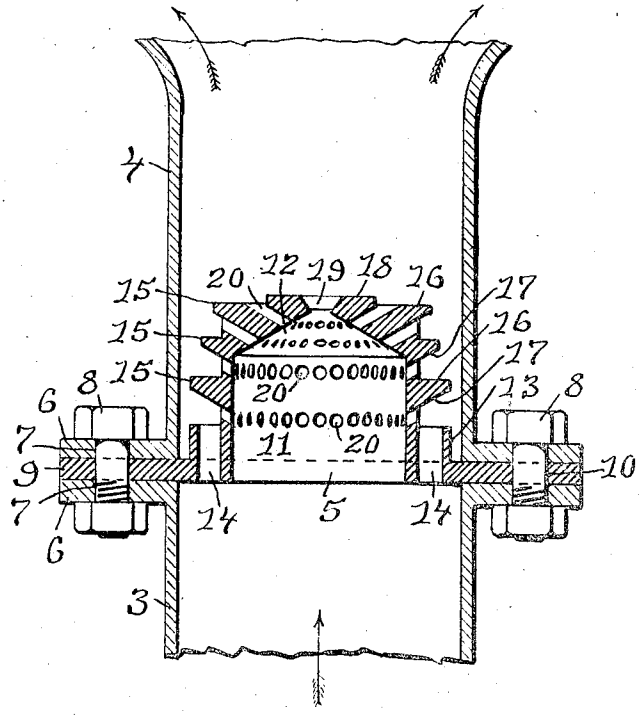


Fig. 2.



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UNITED STATES PATENT OFFICE.

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MANIFOLD MIXER FOR GAS ENGINES.

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To all whom it may concern:

Be it known that I, GIUSEPPE PALIZZA, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Manifold Mixers for Gas Engines, of which the following is a specification.

My invention has reference to an improvement in gas engines and more particularly to an improved manifold mixer for gas engines.

The objects of my invention are to increase the power of a gas engine and reduce the quantity of gasoline used in an automobile engine per mile. I accomplish these objects by producing a more perfect mixture of the gasoline and air, or gas, as it comes from the carbureter to the suction ports of the engine, by the use of my improved manifold mixer for gas engines, which is placed in the intake manifold, intermediate the carbureter and the suction or intake ports of the engine.

A further object of my invention is to simplify the construction of a manifold mixer for the above purpose whereby the mixer is formed integral, thereby reducing the cost of manufacturing and installation, to a minimum.

My invention consists in the peculiar and novel construction of a manifold mixer for gas engines for use in the intake manifold or pipe of a gas engine, said manifold mixer having details of construction, as will be more fully set forth hereinafter and claimed.

Figure 1 is a top plan view enlarged of my improved manifold mixer for gas engines, and

Figure 2 is an enlarged vertical sectional view taken centrally through the intake manifold and mixer, and showing the engine and carbureter connections of the intake manifold broken away.

In the drawings 3 indicates the pipe end of a carbureter, not shown, 4 part of an intake manifold and 5 my improved manifold mixer for gas engines. The pipe end 3 and manifold 4 have adjacent flanges 6, 6 with oppositely disposed bolt holes 7, 7 for bolts 8, 8, as shown in Figure 2.

My improved manifold mixer 5 for gas engines consists of a flat base plate 9 the same shape as the pipe end and manifold flanges 6, 6 and having corresponding bolt holes 10, 10. On the base plate 9 and extending upwards into the intake manifold 4 is a thimble shaped sprayer head 11 open at the bottom and having an inner cone shaped top 12. Around the mixer head 11 on the base plate 9, is a raised ring 13 having a series of vertical holes 14, 14. Above the ring 13 are series of external annular ledges 15, 15, 15, the lower ledge being the same size as the ring 13, the next upper ledge being smaller and the top ledge being still smaller, the whole giving an outside appearance to the mixer head 11 of a bifurcated cone. Each ledge 15 has a flat top 16 and an upwardly inclined flat under face 17. The flat top of the upper ledge 15 merges into a raised flat circular upper end 18 of the mixer head 11, in which is a central inverted bifurcated cone shaped hole 19. Extending outwards through the mixer head 11 under each of the ledges 15, 15, 15 and through the flat top 16 of the upper ledge 15 is a series of holes 20, 20, formed on the same angle as the inclined under faces 17, 17 of the ledges 15, 15, 15, as shown in Figure 2. These holes 20, 20 extend around the mixer head 11 as close together as possible, the object being to make the transverse area of all of the holes in the mixer head the same or greater than the transverse area of the intake manifold thereby eliminating obstruction of the intake manifold, by the sprayer.

The mixer is easily and quickly secured in place in the intake manifold with the base plate 9 between the flanges 6, 6 of the pipe end and intake manifold, by the bolts 8, 8, as shown in Figure 2.

When in use and on the intake or suction stroke of the engine, a mixture of gasoline and air is drawn from the carbureter and sucked through my improved intake manifold mixer 5. As the mixture of air and gasoline is forced through the vertical holes 14, 14 it strikes against the inclined under face 17, of the lower ledge 15 and is bent outwards and strikes against the inside surface of the intake manifold 4. The holes 20, 20 also force the mixture against the inside surface of the intake manifold and the top hole 19 sprays the mixture in an outward direction.

By the use of my improved intake manifold mixer, no more power is required to suck the gas through the mixer, therefore

the mixer forms no obstruction to the movement of the gas and a more perfect mixture of the gasoline and air into a gas is produced, than has heretofore been done.

Having thus described my invention I claim as new:—

1. In an intake manifold for gas engines, a mixer having a flat plate, a thimble shaped mixer head on the plate and having a series of external annular ledges with inclined under faces, a series of inclined holes under each ledge and a raised ring around the mixer head and having a series of vertical holes, all formed integral, for the purpose as described.

2. An intake manifold mixer for gas engines consisting of a flat plate, a thimble shaped mixer head on the plate, a raised ring around the mixer head and having a series of vertical holes, said mixer head having a plurality of external annular ledges gradually reduced in size towards the end of the mixer head, each ledge having an inclined under face, a series of inclined holes under each ledge and having the same angle as the under face of the ledge and a central hole in the end of the mixer head, all formed integral, for the purpose as described.

3. An intake manifold mixer for gas engines having a thimble shaped mixer head, a ring around the mixer head and having a series of holes parallel with the sides of the mixer head, said mixer head having a plurality of external annular ledges gradually reduced in size towards the end of the mixer head, each ledge having a flat top surface at right angles to the sides of the mixer head and an inclined under face, a series of holes under each ledge and inclined at the same angle as the under face of the ledge, a series of angular holes extending through the end of the mixer head which has a raised flat end in which is a funnel shaped central hole, all formed integral, and means for securing the mixer head in an intake manifold of a gas engine, for the purpose as described.

In testimony whereof, I have signed my name to this specification.

GIUSEPPE PALIZZA.