

May 24, 1927.

C. D. PRICE

1,629,964

FUEL MIXER

Filed Sept. 30, 1926

Fig. 1.



Fig. 3.

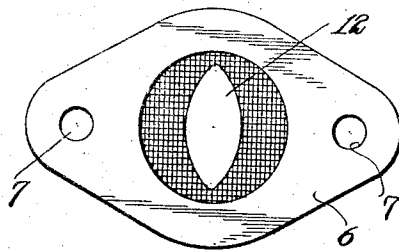


Fig. 2.

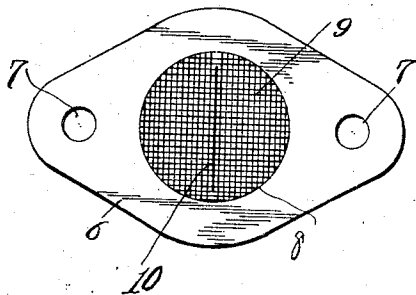


Fig. 4.



Fig. 5.

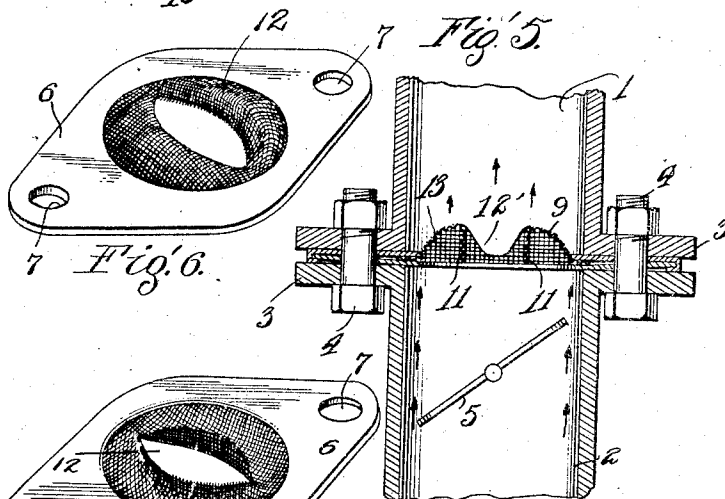


Fig. 6.

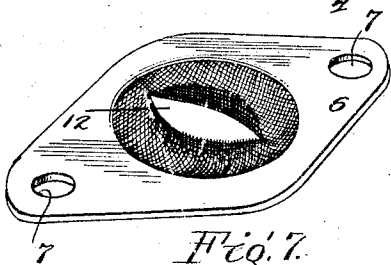


Fig. 7.

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UNITED STATES PATENT OFFICE.

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FUEL MIXER.

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This invention relates to means for thoroughly breaking up the particles of liquid fuel usually permitted to enter the cylinders of an internal combustion engine, thereby supplying a more homogeneous mixture to the engine with the result of a saving of fuel, a quicker and more responsive explosion, an increase in power and a complete combustion with little or no deposit of carbon to foul the plugs, cylinders and adjunctive parts.

The invention contemplates a device of peculiar and novel formation interposed in the path of the mixture to the engine and clamped between the outlet of the carbureter and the intake manifold and serving to break up particles of liquid by a screening and a deflecting action.

While the drawings illustrate a preferred embodiment of the invention, it is to be understood that in adapting the means to meet specific needs and requirements, the design may be varied and such other changes in the minor details of construction may be resorted to within the scope of the invention as claimed, without departing from the spirit thereof.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and the drawings hereto attached, in which,

Figure 1 is a central, longitudinal sectional view of a device embodying the invention.

Figure 2 is a top plan view of the device, showing the diametrical cut in the gauze screen preliminary to deflecting the portions bordering upon the cut to form the inner deflecting walls of the pockets.

Figure 3 is a view similar to Figure 2, after the edge portions of the gauze screen adjacent the cut have been deflected.

Figure 4 is an edge view of the device.

Figure 5 is a detail sectional view showing the device in operative position.

Figures 6 and 7 are obverse and reverse perspective views of the device.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

The numeral 1 designates the inlet of an intake manifold of an internal combustion engine, and 2 the outlet of a carbureter. These parts may be of any well known construction and are illustrated to demonstrate

the application of the invention. The contiguous ends of the parts 1 and 2 are formed with outer flanges 3 which are apertured to receive connecting bolts 4. This arrangement is ordinary. The numeral 5 designates the usual butterfly valve provided in the outlet of a carbureter for controlling the flow of the mixture therefrom to the intake manifold of the engine.

In accordance with the present invention the device comprises an elongated flat body 6 corresponding to the usual gasket which is placed between the flanged ends 3 of the carbureter and intake manifold. This flat body is provided in opposite end portions with openings 7 for passage of the bolts 4, and has a central opening 8 coinciding with the openings of the parts 1 and 2 for passage therethrough of the gaseous mixture. A gauze screen 9 extends over the opening 8 and may be secured to the flat body 6 in any determinate way. Usually, the body 6 comprises companion parts or plies, and the gauze screen is secured between such parts or plies, in any preferred way. The portion of the gauze screen opposite the opening 8 is pressed into concavo-convex form to provide a dome-shaped screen. A diametrical cut 10 is formed in the dome-shaped screen 9 and extends transversely of the body to within a short distance of the circumference thereof. This is indicated most clearly in Figure 2. The edge portions of the screen bordering upon the diametrical cut 10 are deflected away from the flat body in the same direction to form walls 11 which are perpendicular to the body. The walls 11 curve outwardly and contact at their ends, as indicated most clearly in Figure 3, with the result that an opening 12 of elliptical outline is formed. The walls 11, besides being outwardly curved, decrease in depth from a medial point towards opposite ends, as will be readily appreciated. As a result, crescent shaped pockets 13 are formed upon opposite sides of the elliptical opening 12 and these pockets are comprised between inner spaced walls 11 and outer curved walls, the latter curving from the plane of the body 6 to the top of the walls 11, whereby to deflect the gaseous mixture towards the opening 12 where it is arrested by the walls 11, and deflected in a reverse direction, before escaping through the opening 12. This is indicated most clearly in Figure 5 of the drawings. A portion of the gaseous mixture

passes through the infinitesimally small meshes of the gauze screen, thereby breaking up any particles of the liquid fuel contained therein. However, the major portion of the gaseous mixture is deflected by the walls 11 in a reverse direction before escaping through the opening 12. The agitation produced by deflecting the gaseous mixture results in a breaking up of any particles of liquid contained therein, so that a homogeneous mixture is supplied to the engine with the result of more power, a quicker action, and a residue of little or no carbon.

When the device is placed in position the major axis of the opening 12 corresponds with the axis of the butterfly valve 5 of the carbureter, and the pockets 13 are disposed upon opposite sides of the axis of the valve. In consequence of this arrangement the gaseous mixture from the carbureter passes around the outer edges of the wings of the valve when the latter is open, as indicated by the arrows in Figure 5, and the mixture is directed into the outer side of the pockets 13 and caused to approach the inner walls 11 which deflect the mixture in a reverse direction, prior to its escape through the opening 12 to enter the intake manifold 1 on its way to the engine.

Having thus described the invention, I claim:

1. A device for breaking up particles of liquid fuel preliminary to the entrance of such fuel into the engine, the same comprising a flat body having a centrally disposed opening, and a gauze screen fitted in the

opening of the body and comprising oppositely disposed pockets facing in the same direction and separated by a diametrical opening, the outer walls of the pockets curving from the circumference of the opening of the body towards one another and the inner walls being approximately perpendicular to the body.

2. A device for breaking up particles of liquid fuel and adapted to be interposed in the length of the intake manifold of an internal combustion engine, the same comprising a flat body having a centrally disposed opening and a gauze screen fitted to the opening of the body and comprising oppositely disposed pockets of approximately crescent form and separated by a diametrical opening of elliptical outline, said pockets facing in the same direction and their outer walls curving and their inner walls being substantially perpendicular to the plane of the said flat body.

3. A fuel mixer for an internal combustion engine, the same comprising an elongated flat body having a centrally disposed opening and adapted to be interposed in the length of the intake manifold, and a gauze screen applied to the opening of the body and comprising oppositely disposed crescent shaped pockets separated by a diametrical opening of elliptical outline, and having the outer walls of the pockets curved symmetrically and having the inner walls perpendicular to the plane of the body.

In testimony whereof I affix my signature.

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