

W. S. PARKER,
GASEOUS FUEL MIXER.
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1,074,136.

Patented Sept. 30, 1913.

Fig. 1.

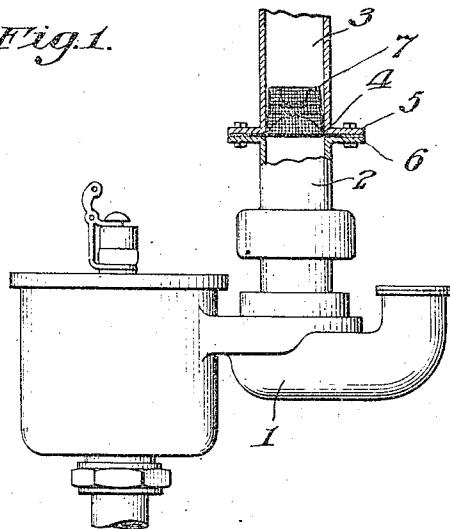


Fig. 2.

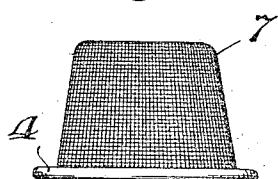
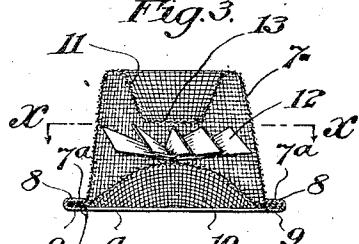
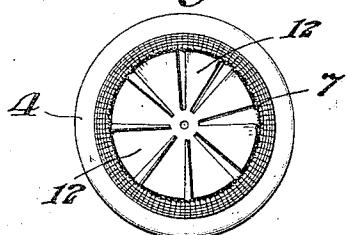


Fig. 3.



10a Fig. 4.



WITNESSES:

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GASEOUS-FUEL MIXER.

1,074,136.

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To all whom it may concern:

Be it known that I, WILLIS S. PARKER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented 5 certain new and useful Improvements in Gaseous-Fuel Mixers, of which the following is a specification.

My invention relates to gaseous fuel mixers and it relates more particularly to an improved form of device adapted to be inserted in the intake pipe of a gaseous fuel engine between the carbureter and the suction chamber of the engine.

15 The principal object of my invention is to provide a simple, inexpensive, and efficient device for thoroughly co-mingling the hydro-carbon fuel vapor with the air and which will insure the complete evaporation 20 of the fuel.

25 My invention contemplates the employment of two frusto-conical screens or sieves forming an annular space therebetween, and the provision of means for inducing a whirling motion in the passing fuel and air mixture within said annular space and against the roughened surfaces of the sieves or screens for the purpose above set forth.

30 The nature and characteristic features of my invention will be more readily understood from the following description taken in connection with the accompanying drawings forming a part hereof, in which—

35 Figure 1 is a side elevation, partly in section, of a carbureter and a portion of the intake pipe of the engine, with a device embodying the main features of my present invention shown mounted in operative position therein; Fig. 2 is a side elevation, enlarged, showing the external appearance of 40 the device of my invention, detached; Fig. 3 is a vertical central section thereof; and Fig. 4 is a horizontal section thereof taken on the line $\alpha-\alpha$ of Fig. 3.

45 Referring to the drawings, in the particular embodiment of my invention therein shown, 1 is a carbureter, which may be of any preferred type, having extending therefrom the pipe 2 which forms a portion 50 of the intake pipe or conduit for the passage of the fuel and air mixture from the carbureter to the engine. The pipe 2 is provided with a flange 6 which is adapted to be bolted to the flange 5 on the pipe 3

which forms a continuation of the intake 55 pipe or conduit to the engine.

4 is a circular ring, U shaped in cross section as shown in Fig. 3, adapted to form means for mounting the device of my invention in the intake pipe or conduit, and incidentally adapted to form a gasket between the flanges 6 and 5 above referred to which form the joint between the pipes 2 and 3. Mounted and clamped between the upper and lower portions 8 and 9 respectively of the 60 ring or gasket 4 is a flange-like extension 7^a of an annular screen or sieve 7 preferably frusto-conical in shape which extends upwardly and which, on account of its frusto-conical shape, forms a tapered annular space 70 between its outer surface and the interior surface of pipe 3. The screen is bent over at the top and thence extends downwardly to provide another annular screen or sieve 11 also preferably frusto-conical in shape and 75 arranged within the screen 7, to form a tapered annular space between the sieve 11 and the upper portion of the sieve 7. A horizontal screen or sieve 13 forms a closure at the lower end of the frusto-conical sieve 80 11, so that all the mixture of fuel and air passing through the conduit is constrained to pass between the meshes of some portion of the sieve structure above described.

85 Mounted beneath the horizontal screen or sieve 13 in any suitable manner is a stationary winged member 12 the vanes or wings of which are inclined similar to the vanes of rotary fan impellers, whereby the mixture of fuel and air will be caused to travel with a 90 whirling motion, the principal portion of said mixture passing within the annular space between the sieve structure 11 and the outer sieve structure 7 whereby unevaporated fuel globules will be deposited upon 95 one of the sieve or screen surfaces and evaporated therefrom by the passing air, and whereby the mixture will be caused to impinge against the roughened surfaces of the screens and will be thoroughly intermingled 100 and a more uniform and perfect mixture obtained. The winged member 12 may be mounted within the interior of the screen 7 in any suitable manner, such for example as shown in the drawings, that is by providing 105 a dished screen or sieve 10 which extends upwardly within the interior of screen 7 and thereby forms a support to which the winged

member 12 may be secured. The sieve or screen 10 may also be provided with a flange-like extension 10^a which may also be clamped between the upper portion 8 and lower portion 9 of the clamping ring 4.

It will be seen that there is thus provided a simple and efficient device for insuring a thorough evaporation of the gaseous fuel and for securing a uniform mixture of the same with the air, which device is characterized by the provision of the annular spaces between the two frusto-conical sieve members within which the mixture is projected with a whirling motion. The arrangement 15 of the frusto-conical sieves results in a maximum of evaporating surface and at the same time permits the mixture to freely pass while being subjected to the desired manipulation for the purposes set forth.

20 Having thus described the nature and characteristic features of my invention what I claim as new and desire to secure by Letters Patent is as follows:

1. In a device of the character described, 25 a pair of annular sieves arranged one within the other and forming an annular space therebetween, and a stationary member mounted beneath said space having a plurality of inclined vanes adapted to impart a 30 whirling motion to a passing vapor and air mixture.

2. In a device of the character described adapted to be mounted in a conduit, a frusto-conical sieve, another frusto-conical sieve 35 mounted within the first named sieve and forming a tapered annular space in conjunction therewith, and means for imparting a whirling motion to gaseous mixtures passing through the conduit.

40 3. In a device of the character described

adapted to be mounted in a conduit, a frusto-conical sieve, another frusto-conical sieve mounted within the first named sieve and forming a tapered annular space in conjunction therewith, and a stationary member 45 mounted beneath the second mentioned sieve and having a plurality of inclined vanes adapted to impart a whirling motion to gaseous mixtures passing through the conduit.

4. In a device of the character described 50 adapted to be mounted in a conduit, a frusto-conical sieve, another frusto-conical sieve mounted within the first named sieve, a stationary member mounted beneath the second mentioned sieve and having a plurality of 55 inclined vanes adapted to impart a whirling motion to gaseous mixtures passing through the conduit, and another sieve upon which said stationary member is mounted.

5. In a device of the character described 60 adapted to be mounted in a conduit, a frusto-conical sieve, another frusto-conical sieve mounted within the first named sieve, a stationary member mounted beneath the second mentioned sieve and having a plurality of 65 inclined vanes adapted to impart a whirling motion to gaseous mixtures passing through the conduit, another sieve upon which said stationary member is mounted, the first named sieve and the last named sieve each 70 having a flange-like extension, and a supporting ring U shaped in cross section within which said extensions are clamped.

In testimony whereof, I have hereunto signed my name in the presence of two witnesses,

WILLIS S. PARKER.

Witnesses:

WILLIAM S. ATCHISON,
EDWARD P. BLISS.