Sept. 30, 1924. 1,510,221

E. E. HERMAN ET AL

VAPORIZER

Filed July 9, 1923

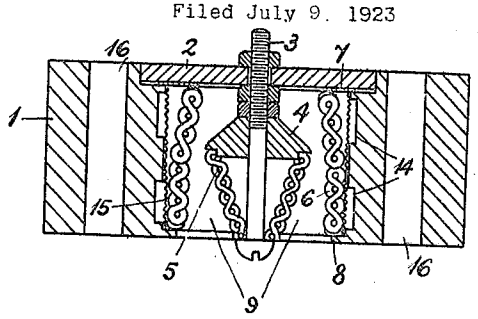


Fig. 1.

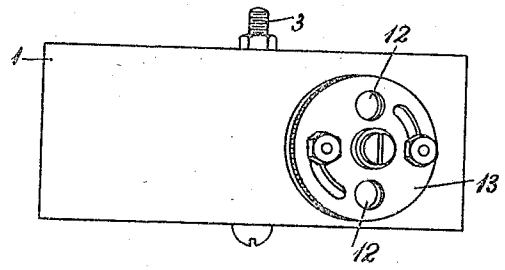


Fig. 3.

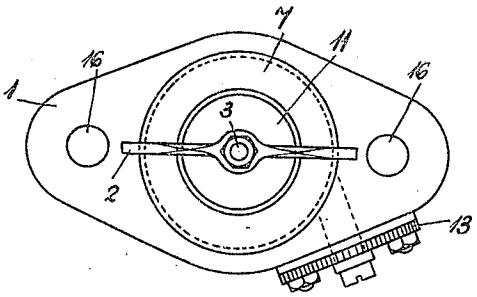


Fig. 2.

Fig. 4.

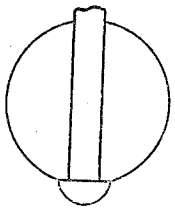


Fig. 5.

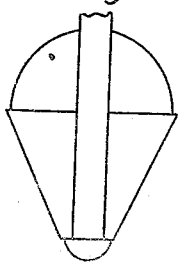
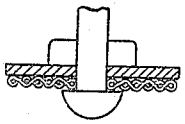


Fig. 6.



INVENTORS.

Ernest Edward Herman & Lionel Vincent Riley

by Arthur D. Cairns

Attorney.

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UNITED STATES PATENT OFFICE.

ERNEST E. HERMAN, OF READING, AND LIONEL V. RILEY, OF MAIDENHEAD, ENGLAND, ASSIGNORS TO THE DENTAL MANUFACTURING COMPANY LIMITED, OF ALSTON HOUSE, LONDON, ENGLAND.

VAPORIZER.

Application filed July 9, 1923. Serial No. 650,538.

To all whom it may concern:

Be it known that we, ERNEST EDWARD HERMAN, a subject of the King of Great Britain and Ireland, residing at 50 de Beauvoir Road, Reading, in the county of Berkshire, England, and LIONEL VINCENT RILEY, a subject of the King of Great Britain and Ireland, residing at 36 Penyston Road, Maidenhead, in the county of Berkshire, England, have invented new and useful Improvements in Vaporizers (on which application has been made for Letters Patent in Great Britain, No. 23,026, filed 24th August, 1922), of which the following is a specification.

The present invention relates to improvements in vaporizers of the kind included in the induction system of an internal combustion engine, whereby any liquid particles of fuel carried along by the gaseous mixture from the carburetter or vaporizer are absorbed and vaporized before admission to the engine cylinder.

A device according to the invention is illustrated in the accompanying drawings, in which Figure 1 is a sectional elevation of the device.

Figure 2 a plan view of Figure 1.

Figure 3 an elevation, and

Figures 4, 5 and 6 alternative forms of the deflector.

The device comprises a housing 1, at the delivery end of which is mounted a cross member 2, preferably of stream line section, so as to offer as little resistance as possible to the flow of gaseous mixture. A screw member 3 is fixed centrally to the cross member and carries a deflector composed of a solid cone 4 of metal, fibre, or the like, and a wire or spring cone 5 on which is interwoven asbestos yarn, so that it forms a centre absorbing deflecting device. This central deflector may alternatively be wholly solid and of various forms, as shown in Figures 4, 5 and 6. An outer screen or pad 6 of any suitable absorbent material, as wire with interwoven asbestos yarn, is held in place by an end washer 7, and a flange 8 formed in the body 1.

The gases from the carburetter or vaporizer enter at 9 and their course is suddenly changed by the deflector, a perfectly free passage being, nevertheless, provided. Owing to their momentum, the heavier unvaporized particles continue longer in their outward direction and impinge on the outer screen or pad 6, where they are absorbed and re-evaporated by the free air in the mixture, and return to the mixture which emerges at 11 in purely gaseous form. Extra air may be admitted to assist this action, by means of holes 12 having a co-acting regulating cover 13. These holes communicate with annular grooves 14, and a filter gauze 15 is provided fitting in the housing 1.

The device may be used at any convenient position between the carburetter or vaporizer and the inlet valve of the cylinder, bolt holes 16 being provided in the construction shown. Thus, it may be incorporated with the delivery side of the carburetter or vaporizer, or may be mounted in the induction pipe, or by means of flanges between the carburetter and induction pipe, or between the induction pipe and cylinder block. It will also be understood that considerable variation may be made in the form of the parts without departing from the spirit and scope of the invention.

What we claim is:—

1. A device for evaporating liquid particles in the gaseous fuel mixture for internal combustion engines, comprising a housing adapted to be combined with the induction system and having air inlets therein, a cross member mounted at the delivery end of said housing, a stationary deflector in part of fibrous material mounted on said cross member adapted to change the course of the gaseous mixture while leaving a free and unobstructed annular passage therefor, an outer sleeve of absorbent material within said housing on which the deflected liquid particles impinge, grooved inner walls in said housing communicating with said air inlets and a gauze filter between said sleeve and said inner walls.

2. A device for evaporating liquid particles in the gaseous fuel mixture for internal combustion engines, comprising a housing adapted to be combined with the induction system and having air inlets therein, a cross member mounted at the delivery end of said housing, a stationary deflector in part of fibrous material mounted on said cross member adapted to change the course of the gaseous mixture while leaving a free and unobstructed annular passage therefor,

an outer sleeve of absorbent material within said housing on which the deflected liquid particles impinge, grooved inner walls in said housing communicating with said air inlets, a gauze filter between said sleeve and said inner walls and means mounted on said housing for adjusting said air inlets.

3. A device for evaporating liquid particles in the gaseous fuel mixture for internal combustion engines, comprising a housing adapted to be combined with the induction system and having air inlets therein, a cross member of stream line section mounted at the delivery end of said housing, a stationary deflector in part of interwoven wire and asbestos mounted on said cross member adapted to change the course of the gaseous mixture while leaving a free and unobstructed annular passage therefor, an outer sleeve of interwoven wire and asbestos mounted within said housing, on which the deflected liquid particles impinge, grooved inner walls in said housing communicating with said air inlets, and a gauze filter sleeve between said outer sleeve and said inner walls.

4. A device for evaporating liquid particles in the gaseous fuel mixture for internal combustion engines, comprising a housing adapted to be combined with the induction system and having air inlets therein, a cross member of stream line section mounted at the delivery end of said housing, a stationary deflector in part of interwoven wire and asbestos mounted on said cross member adapted to change the course of the gaseous mixture, an outer sleeve of interwoven wire and asbestos mounted within said housing, on which the deflected liquid particles impinge, grooved inner walls in said housing communicating with said air inlets, a gauze filter sleeve between said outer sleeve and said inner walls, and means mounted in said housing for adjusting said air inlets.

5. A device for evaporating liquid particles in the gaseous fuel mixture for internal combustion engines, comprising a housing adapted to be combined with the induction system and having air inlets therein, a cross member of stream line section mounted at the delivery end of said housing, a screw centrally mounted in said cross member, a solid upper cone, a lower cone of interwoven wire and asbestos, said cones being mounted base to base on said screw, a partly tapered outer sleeve of interwoven wire and asbestos mounted in said housing, on which the liquid particles impinge, a washer mounted in said housing and retaining said outer sleeve, grooved inner walls in said housing communicating with said air inlets, a gauze filter sleeve between said outer sleeve and said inner walls, and a perforated disc adapted to register with and adjust said air inlets revolubly mounted on said housing.

In witness whereof we have signed our names to this specification.

E. E. HERMAN.
L. V. RILEY.