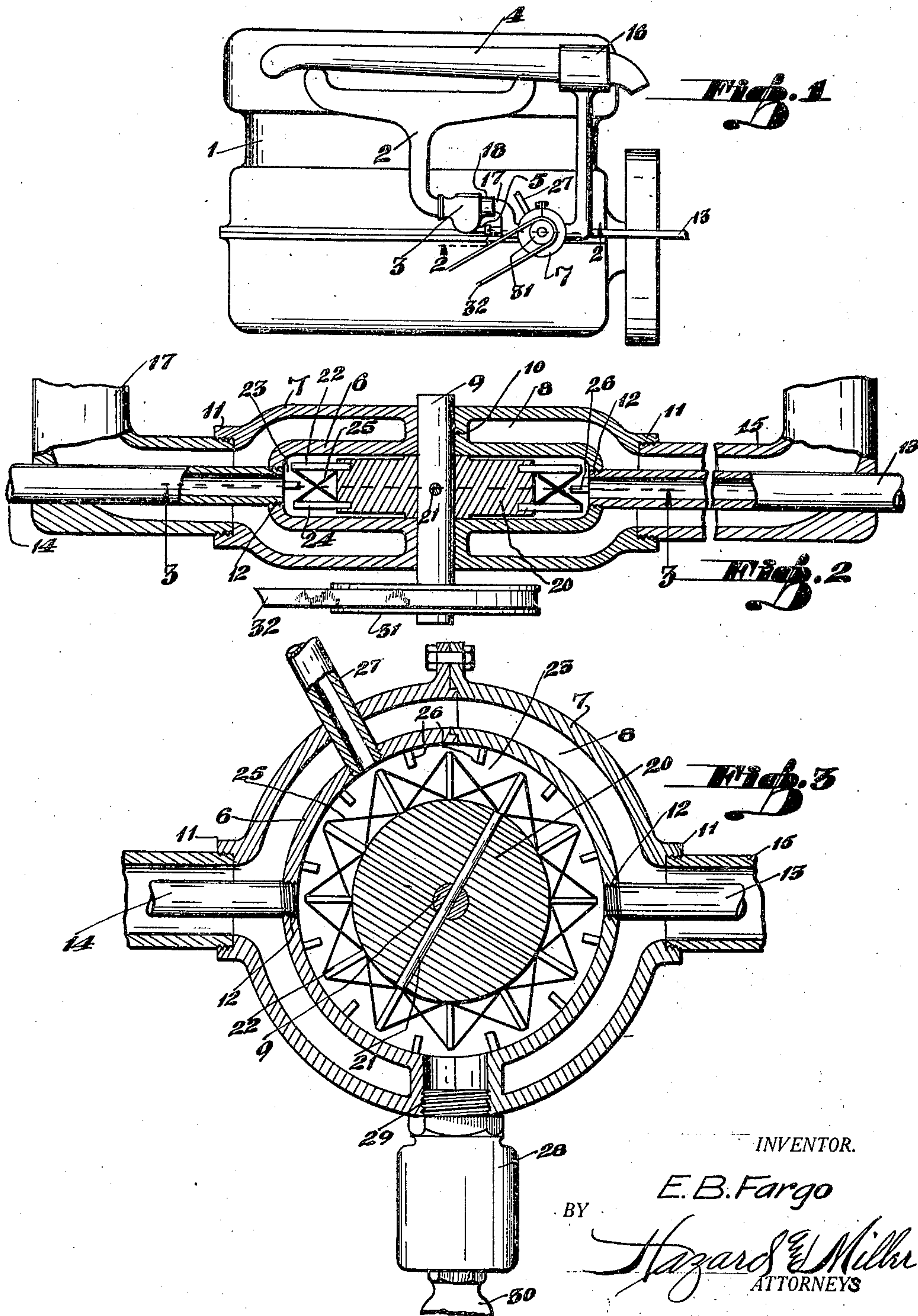


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1,440,532.

E. B. FARGO.
FUEL SAVER FOR INTERNAL COMBUSTION ENGINES.
FILED AUG. 17, 1920.



INVENTOR.

E. B. Fargo

BY

Hazard & Miller
ATTORNEYS

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UNITED STATES PATENT OFFICE.

EDWARD B. FARGO, OF LOS ANGELES, CALIFORNIA.

FUEL SAVER FOR INTERNAL-COMBUSTION ENGINES.

Application filed August 17, 1920. Serial No. 404,202.

To all whom it may concern:

Be it known that I, EDWARD B. FARGO, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Fuel Savers for Internal-Combustion Engines, of which the following is a specification.

This invention relates to fuel savers for internal combustion engines, and has for its object the provision of means for agitating the fuel supply to the carburetor of an internal combustion engine in order to break up the globules comprising the fuel so that when mixed with air in the carburetor complete vaporization of said liquid globules will occur.

It is a further object of the invention to provide means whereby heating of the fuel is caused during the agitation thereof.

It is a still further object of the invention to provide means for causing mixing of a lighter fuel with the fuel for the internal combustion engine during the agitation thereof, so as to form an intimate mixture of the two fuels prior to the carburation thereof.

The invention will be readily understood from the following description of the accompanying drawings, in which—

Figure 1 is a side elevation of the internal combustion engine showing an improved fuel saving device employed in connection therewith.

Fig. 2 is a longitudinal section on the line 2—2 of Fig. 1.

Fig. 3 is a longitudinal section on the line 3—3 of Fig. 2.

The fuel saver is shown employed in connection with the usual internal combustion engine 1 having the intake manifold 2 leading from the carburetor 3. The exhaust manifold is shown at 4. The fuel saver is arranged in the fuel supply pipe leading to the fuel intake 5 of the carburetor and consists of a cylindrical casing 6 in spaced relation within an exterior cylindrical casing 7 so as to form a cylindrical passage 8 between said casings. A shaft 9 extends axially through the casings and is journaled in a bearing 10 formed as an axial connection between said casings.

At diametrically opposite points threaded nipples 11 are provided upon casing 7 and threaded openings 12 are arranged in alignment therewith in casing 6. A pipe 13 lead-

ing from a fuel supply tank is threaded into one of the openings 12 and a pipe 14 leading to the fuel intake 5 of the carburetor is threaded into the opposite opening 12. The device is thus mounted in the fuel supply line to the carburetor. A pipe 15 is threaded into one of the nipples 11 and is arranged in spaced relation surrounding pipe 13. The pipe 15 leads to a sleeve 16 surrounding the exhaust pipe 4 and so arranged as to permit air to be drawn into said sleeve and into the pipe 15. A similar pipe 17 is threaded into the opposite nipple 11 and is arranged in spaced relation surrounding pipe 14. This pipe leads to the air intake 18 of the carburetor.

A disc 20 is fixed upon shaft 9 within casing 6 by means of the pin 21, and the shaft and disc are arranged to be rotated as by a suitable driving connection including a pulley 31 fixed upon shaft 9 and a belt 32 passing over said pulley and actuated by any suitable rotating part of the engine. Radial pins 22 project beyond the periphery of disc 20 into the annular space 23 surrounding said disc within casing 6. These pins are arranged adjacent one end face of disc 20, and a similar series of radial pins 24 are arranged adjacent the opposite end face of the disc. Transverse wires 25 extend from the lower end of a pin of one series to the upper end of a pin of the other series circumferentially beyond the first pin. By this arrangement a net work of crossed wires is provided between the radial pins 22 and 24. Pins 26 project radially inwardly from the casing 6 between the rows of pins 22—24 and into the space provided by the crossed wires between next adjacent pins.

Means are, preferably, provided for introducing a second fuel into the space 23 in order that a mixed fuel may be supplied to the carburetor. For this purpose a pipe 27 leading from a tank, not shown, containing the second fuel may be inserted through casing 7 and threaded into casing 6.

A chamber 28 for collecting the residue from the fuel supply to casing 6 may be connected to casing 6 by means of the threaded nipple 29 projecting therefrom through casing 7. The residue collecting chamber is provided with a usual drain cock 30.

In operation the hot gases passing through pipe 4 will heat the air drawn into sleeve 16 and the pipe 15. The heated air will pass through the space 8 between cas-

ings 6 and 7 and thence through pipe 17 to the carburetor. The fuel entering the space 23 within casing 6 through pipe 13 will be agitated by the rotating disc 20, the crossed
5 wires thereof co-operating with the pins 26 to break up the globules of the fuel and thoroughly churn the same.

If desired a second fuel may be introduced through pipe 27 and the churning ac-
10 tion within casing 6 will thoroughly mix the two fuels. The hot air passing through space 8 will cause heating of casing 6 and of the fuel within the same so that the breaking up of the fuel may be more readily
15 accomplished. The fuel is discharged through pipe 14 to the carburetor where the carburation of the air drawn thereinto may be readily accomplished due to the pre-agitating and heating of the fuel.

20 Various changes may be made without departing from the spirit of the invention as claimed.

What is claimed is:

1. In a fuel saver for internal combustion
25 engines, an agitator comprising a casing member, a rotatable member within the same, crossed wires projecting outwardly

from said rotatable member, and pins projecting inwardly from the casing member.

2. In a fuel saver for internal combustion 30 engines, a housing, a member arranged for rotation therein, pins projecting radially from the periphery of said rotatably mounted member, crossed wires arranged on said pins projecting inwardly from said housing, 35 means for admitting fuel at two different points into the chamber within the housing, and said housing being provided with a fuel outlet opening.

3. In a fuel saver for internal combustion 40 engines, a housing, a member arranged for rotation therein, pins projecting radially from the periphery of said rotatably mounted member, crossed wires arranged on said pins projecting inwardly from said housing, 45 means for admitting fuel at two different points into the chamber within the housing, said housing being provided with a fuel outlet opening, and a sediment trap depending from the lower portion of said housing. 50

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

EDWARD B. FARGO.