

A. H. LINAWEAVER.
PRIMER FOR GASOLENE ENGINES.
APPLICATION FILED MAY 19, 1909.

942,785.

Patented Dec. 7, 1909.
2 SHEETS—SHEET 1.

Fig. 1.

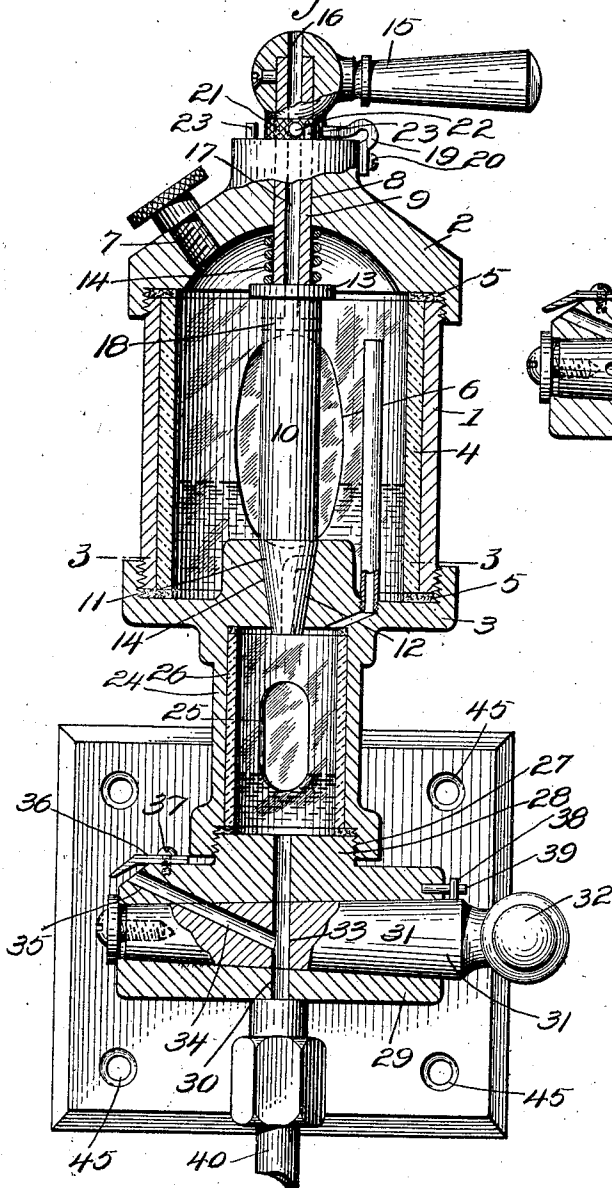


Fig. 2.

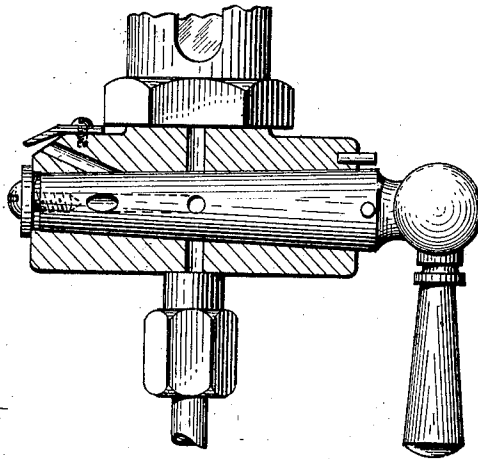
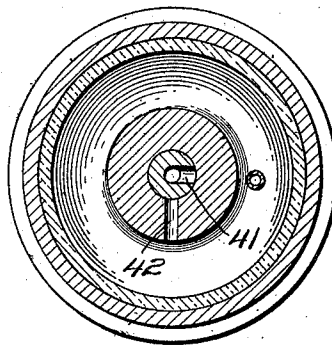


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

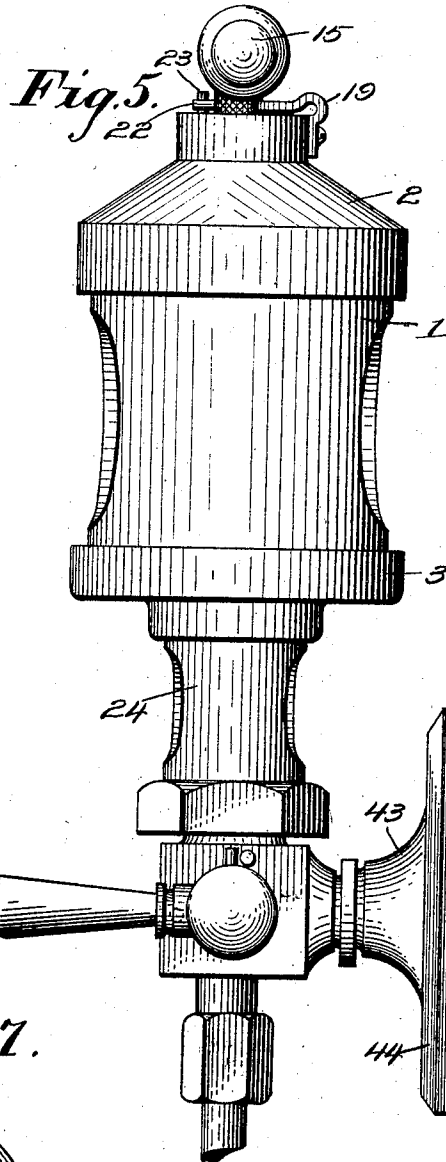
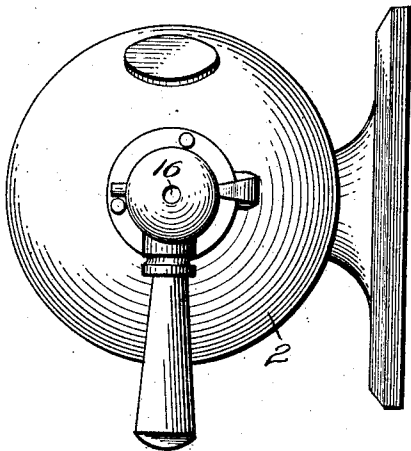


Fig. 6.

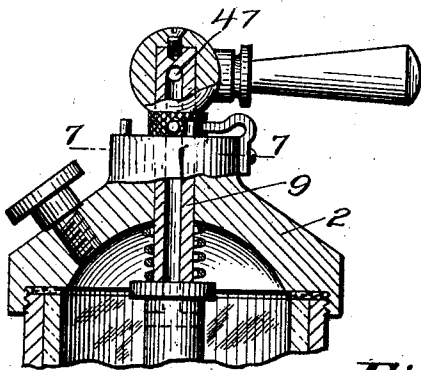
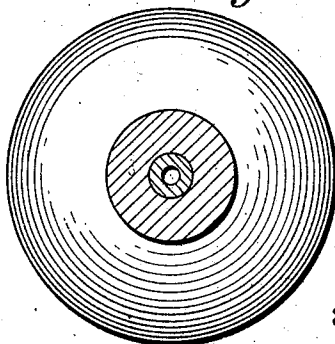


Fig. 7.



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PRIMER FOR GASOLENE-ENGINES.

942,785.

Specification of Letters Patent.

Patented Dec. 7, 1909.

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To all whom it may concern:

Be it known that I, ALBERT H. LINAWEAVER, a citizen of the United States, residing at Findlay, in the county of Hancock and State of Ohio, have invented new and useful Improvements in Primers for Gasolene-Engines, of which the following is a specification.

This invention relates to primers for gasolene engines, the object of the invention being to provide a simple device of the character referred to which may be attached to any motor car and connected with the motor in such manner as to enable the driver of the machine to charge or prime the combustion chamber of the motor preparatory to cranking or starting the motor.

By experiment and observation it has been ascertained that in a temperature of forty degrees and upward it is not troublesome to start a gasolene motor. Between said point of temperature and the freezing point the trouble increases rapidly and the priming of the carbureter is helpful, but it is necessary to spin the starting crank a number of times in order to obtain an explosion. Below twenty degrees, unless the motor is kept in a warm place, or heated water is introduced into the radiator and circulating system of the motor, the problem of starting the engine under average circumstances is a difficult one to solve. A flushed carbureter does not produce the required vapor and feeding gasolene through the spark plug-hole is a tedious and trying operation.

By means of the device hereinafter particularly described, the motor may be easily started at any time in a temperature down to or below zero, as by priming the motor in a manner hereinafter described, the engine starts easily and in nearly every instance an explosion is effected by a single turn of the starting crank.

To the above end, the invention consists in the novel construction, combination, and arrangement of parts, as hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a vertical diametrical section through a primer embodying the present invention, showing the priming cock open. Fig. 2 is a detail section through the priming cock, showing the same closed. Fig. 3 is a horizontal cross section on the line 3—3, of Fig. 1. Fig. 4 is a top plan view of the primer.

Fig. 5 is a side elevation of the same. Fig. 6 is a detail diametrical vertical section through the upper portion of the reservoir, showing a modified arrangement of valve seating means and air inlet. Fig. 7 is a cross section on the line 7—7 of Fig. 6.

The primer contemplated in this invention and which is applicable to any motor car, at any convenient point on the car, where it is readily accessible to the driver comprises a reservoir adapted to contain a supply of gasolene. This reservoir comprises an outer cylindrical metal shell 1, a cap 2 threaded upon the upper end of said shell, a base 3 threaded upon the lower end of said shell, and an inside glass cylinder 4 which is held in place by the shell and between the cap and base, gaskets 5 being introduced between the cap and base and the shell 1 and glass cylinder 4 to render the reservoir liquid and air tight.

The shell 1 is fenestrated or provided at opposite points with observation openings or windows 6 to enable the driver to note whether or not there is a sufficient quantity of gasolene contained in the reservoir. The cap is provided with an opening in which is fitted a filling plug 7 to enable gasolene to be introduced into the reservoir. The body 3 is further provided centrally of its top with an opening 8 in which is received the stem 9 of a reservoir cock 10 the lower end of which is tapered as indicated at 11 and received in a bore 12 of corresponding shape in the base 3. Within the reservoir the cock 10 is provided with an annular shoulder or collar 13 between which and the underside of the cap 2 there is arranged a coiled spring 14 encircling the stem 9 and exerting a downward pressure on the cock 10 to keep the same normally closed and prevent the flow of gasolene downward through the base 3. The stem 9 extends upward through the cap 2 and has mounted on the upper end thereof an operating handle 15 in which an air inlet opening 16 is formed in line with a corresponding central bore or passage 17 leading through the stem 9 into the body of the cock 10 where it is provided with a tee-shaped lower end or extension 18 opening out in opposite directions into the reservoir. This air passage always remains open so that air may pass into the reservoir to supply the space previously occupied by the gasolene allowing the gasolene to flow freely from the reservoir for a purpose here-

inafter set forth. As an additional means for holding the cock 10 closed, a cock closing spring 19 has one end secured to the cap 2 as shown at 20, the other end carrying a ring or collar 21 which encircles the stem 9 and is fastened thereto by means of a screw 22 or its equivalent, the tension of said spring 19 being exerted in a downward direction on the cock 10. In order to adapt the handle 15 to be swung through a quarter of a turn, stop pins 23 are mounted on the cap 2 at a suitable distance apart with which the screw or pin 22 coöperates to limit the turning of the stem 9 in the manner indicated.

The base 3 is extended to form a cylindrical charge measuring chamber 24 which is fenestrated in a manner similar to the reservoir 1 or provided with oppositely located observation openings or windows 25 and within said measuring chamber there is a glass cylinder 26 which is fitted therein like the cylinder 4 above described so as to obtain a liquid and air tight construction. A hollow tube 26' extends from the charge chamber into the reservoir to a point near the top thereof and acts as an air vent for the charge chamber.

The lower end of the charge measuring chamber 24 is enlarged and internally threaded as shown at 27 to fit upon a threaded boss or extension 28 on the upper side of a priming cock casing 29, the latter being provided with a vertical passage 30 extending therethrough. The priming cock 31 is of the tapered plug type and is provided at one end with an operating handle 32 and at a point in line with the passage 30 with a corresponding passage 33 adapted to be moved into and out of line with the passage 30. The priming cock is also provided with an oblique or inclined passage 34 adapted to be moved into and out of register with an air inlet passage 35 in the casing 29, the outer end of said air inlet passage being protected by a dust protector or hood 36 which is secured to the casing 29 by means of a screw or equivalent fastening device 37 the projecting end of the hood 37 overlying an orifice of the air inlet and excluding dust, dirt and other foreign matter while allowing air to be readily sucked into said passage. The priming cock 31 is also provided with a stop pin or shoulder 38 adapted to come in contact with corresponding pins or shoulders 39 on the casing 29 to limit the turning movement of the handle 30 to ninety degrees. Communicating with the passage 30 is a priming tube 40 which leads to the mixture intake pipe, communicating therewith at a point between the carbureter and the combustion chamber of the motor or engine and in this way an admixture of air and gasoline is delivered into the intake pipe at the point mentioned

whereupon it is drawn by the suction of the combustion into the combustion chamber of the motor. The gasoline from the reservoir 1 passes through the L-shaped passage 41 in the tapered lower end of the reservoir cock 10 and is thereby discharged into the measuring chamber 24 when the cock 10 is drawn into the proper direction, the base 3 being provided with a radial port 42 with which said passage 41 communicates when the cock 10 is turned to the proper point.

The casing 29 of the priming cock is connected rigidly to a supporting base or bracket 43 provided with a flange 44 formed with holes 45 to receive screws or other fasteners by means of which the device, as a whole, may be connected to the dash or other convenient part of the motor car, said bracket supporting the entire priming device hereinabove described. The upper end of the air passage 16 shown in Fig. 1 may also be extended laterally or horizontally as shown at 47 in Fig. 6 in order to prevent any dust, dirt or other foreign matter from falling into said air inlet and finding its way into the reservoir.

In operation, the reservoir 1 being partly or wholly filled with gasoline and the priming cock 31 being closed, the operator, preparatory to starting the motor, opens the reservoir cock 10 and allows the same to remain open long enough to fill the charge measuring chamber with gasoline. He then closes the cock 10 after which he opens the priming cock 31 which allows the supply of gasoline together with air drawn in through the passages 35 and 34 to be conducted by gravity to the mixture intake pipe of the motor between the carbureter and the combustion chamber. A single turn of the starting crank will thus obtain an explosion which will effect an initial starting of the engine, after which the engine will maintain itself in operation.

I claim:—

1. A primer for gasoline engines embodying a reservoir for gasoline, a charge measuring chamber adapted to be placed in communication with said reservoir, a reservoir cock controlling such communication and provided with an air vent, a priming tube leading from said measuring chamber to the mixture intake pipe at a point between the carbureter and combustion chamber, an air inlet in communication with said priming tube, and a priming cock controlling said air inlet and communication between the measuring chamber and priming tube.

2. A primer for gasoline engines embodying a reservoir for gasoline, a charge measuring chamber adapted to be placed into communication with said reservoir, a reservoir cock controlling said communication, a priming tube leading from said measur-

ing chamber to the mixture intake pipe at a point between the carbureter and combustion chamber, an air inlet in communication with said priming tube, and a priming cock having passages which simultaneously register with said air inlet and the port between the measuring chamber and priming tube.

3. A primer for gasoline engines embodying a reservoir for gasoline, a charge measuring chamber adapted to be placed in communication with said reservoir, a reservoir cock controlling said communication, a priming tube leading from said measuring chamber to the mixture intake pipe at a

point between the carbureter and combustion chamber, an air inlet in communication with said priming tube, a dust protector overlying the entrance to said air inlet, and a priming cock controlling said air inlet and communication between the measuring chamber and said priming tube.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT H. LINAWEAVER.

Witnesses:

LEVI HARVITT,

Mrs. A. BISH.