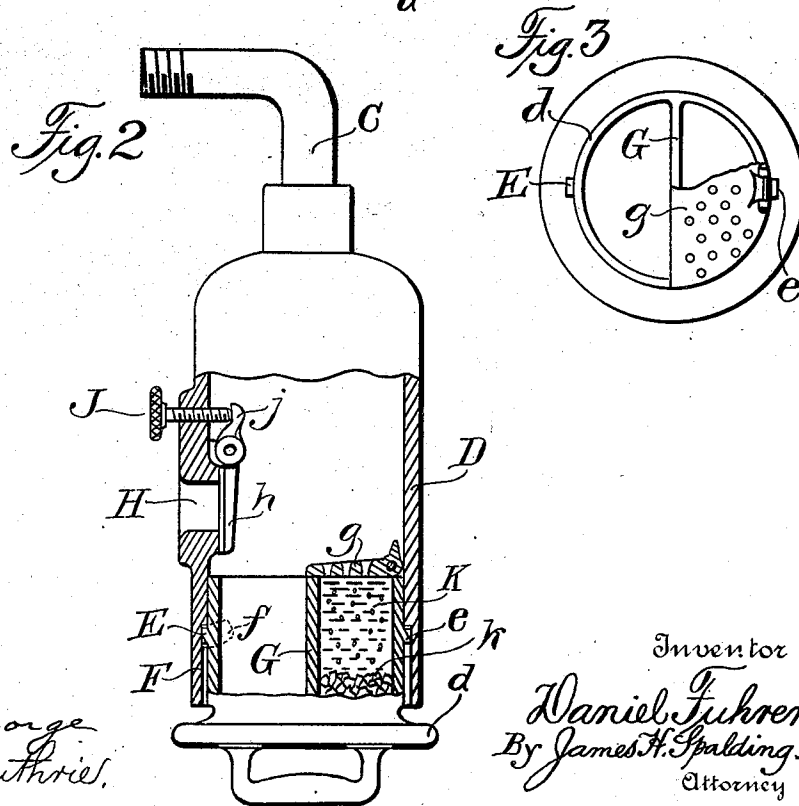
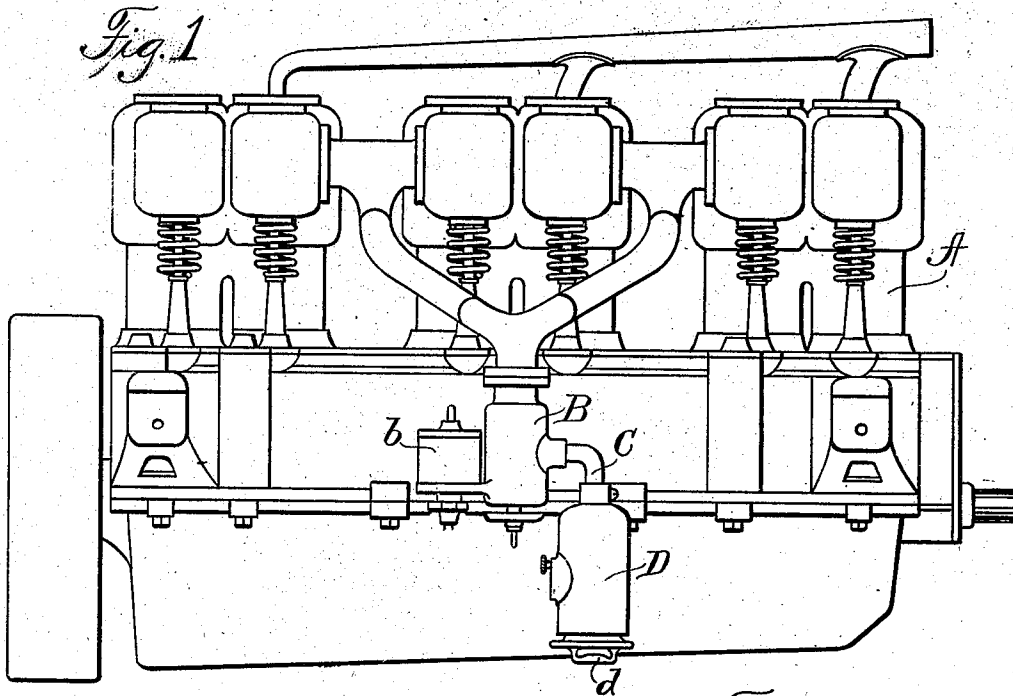


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GASOLINE ENGINE STARTER.
APPLICATION FILED APR. 27, 1912

1,061,536.

Patented May 13, 1913.



Witnesses

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DANIEL FUHRER, OF BLUFFTON, INDIANA.

GASOLENE-ENGINE STARTER.

1,061,536.

Specification of Letters Patent.

Patented May 13, 1913.

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To all whom it may concern:

Be it known that I, DANIEL FUHRER, citizen of the United States, residing at Bluffton, in the county of Wells and State of Indiana, have invented certain new and useful Improvements in Gasolene-Engine Starters, of which the following is a specification.

This invention relates to gasolene engine starters, and belongs to that class of devices designed to set in motion internal combustion engines, upon turning the crank in the customary manner, and by the introduction of an explosive mixture into the cylinders by auxiliary or additional contrivances. This invention also belongs to that type of such devices in which the explosive mixture introduced is in a measure heated, thus aiding the starting of the engine and assuring its continued operation by heating the carburetor of the engine and adjacent parts, particularly on cold mornings when the engine is to be started up from rest over night.

The object of this invention is the production of a gasolene engine starter having parts of special construction and arrangement, and the particular method of operating those parts.

The accompanying drawings illustrating this invention comprise in Figure 1 the side view of an engine to which this invention is applied. Fig. 2 represents a vertical section on an enlarged scale of this invention alone, showing the internal parts. Fig. 3 is a top plan view of the removable cupped bottom of the casing provided with a pocket.

Throughout the drawings and explanation, the same letter is employed to refer to the same part.

An engine A is provided as a part of its regular structure, with the intake pipe or chamber B and the carburetor *b* adjacently situated. To the intake pipe is attached a casing in communication with pipe B by means of tube C. The casing its marked D, and it has a removable cupped bottom *d*. At either side the bottom *d* has a lug E, or *e*, and the bottom is removably held in the casing D by passing the lugs upwardly in vertical recesses in the inner surface of the casing, and turning the bottom *d* to cause

the lugs to engage suitably inclined slots on the inside of the casing. In Fig. 2 one of the vertical recesses is marked F and the inclined slot is designated by the letter *f*.

As best shown in Fig. 2, there is formed at one side of the cupped bottom *d*, a compartment or pocket G, provided with a perforated lid *g*.

The casing D is constructed with an air inlet H, which may be controlled by means of a valve *h*. The play of the valve *h* may be regulated, or, the valve may be held upon its seat by suitably adjusting the screw J against or with respect to the valve-leg *j*. Ordinarily, sufficient air for the purpose of starting enters the pipe B through the regular air-inlet passages with which the engine is regularly made. If more air is needed the valve *h* is available.

The method of operating this invention consists in placing within the pocket G in the cupped bottom *d* a quantity of water and gasolene K, and a portion or charge of carbide of calcium *k*. The ensuing chemical action results in the evolution of gas with heat, the acetylene carrying with it the vapor of the gasolene. The casing D is rapidly filled with the gaseous mixture in a heated condition which, when the engine is cranked in the customary way, finds a path into the cylinders and by its explosion starts the engine. On its course to the cylinders, the heated mixture communicates heat to the intake pipe B and also to the engine carburetor *b*, and thus renders the carburetor operative to serve the vapor needed for the further action of the engine.

Having now described this invention, and explained the mode of its operation, what I claim is:—

1. In a gas engine starter, the combination with an engine having an intake pipe, of a casing arranged in communication with the said pipe, the said casing having an air-inlet valve and an internal pocket, and means constructed to permit access to said pocket from the outside of said casing.

2. In a gasolene engine starter, the combination with an engine having an intake pipe, of a casing arranged in communication

tion with said pipe, the said casing having an air-inlet valve and a removable portion provided with a pocket.

3. In a gasoline engine starter, the combination with an engine having an intake pipe, of a casing arranged in communication with the said pipe, the said casing having an air-inlet valve, and the said casing hav-

ing a removable cupped bottom provided with a pocket.

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

DANIEL FUHRER.

Witnesses:

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THOMAS R. JOHNSTON.