

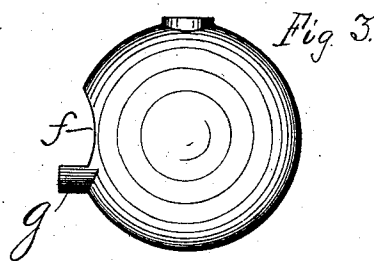
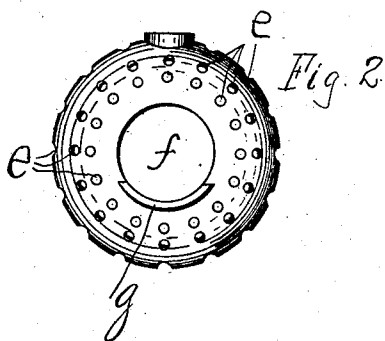
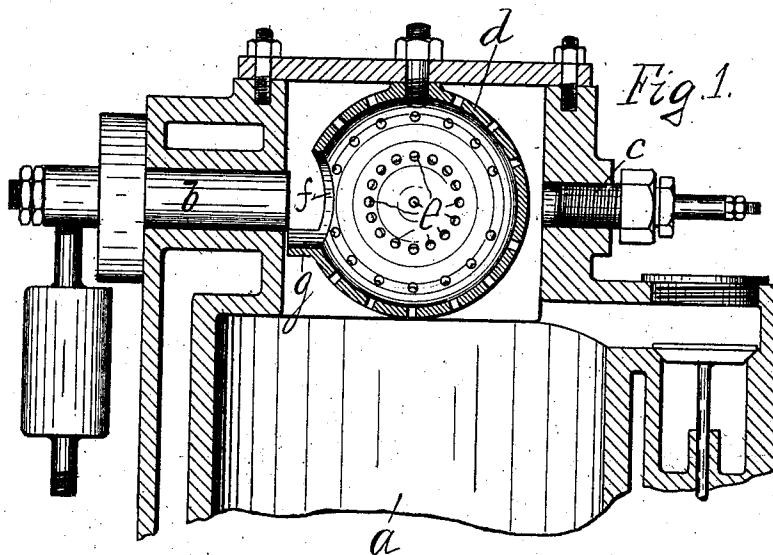
No. 762,960.

PATENTED JUNE 21, 1904.

N. L. & W. W. TUCK.
VAPORIZER AND IGNITER FOR OIL ENGINES.

APPLICATION FILED JULY 22, 1903.

NO MODEL.



WITNESSES:

Sherman Lewis
Frank Ryall

Nelson L. Tuck,
Wm. W. Tuck

INVENTORS:

BY *Richard W. Parkley,*

ATTORNEY.

UNITED STATES PATENT OFFICE.

NELSON L. TUCK AND WILLIAM W. TUCK, OF BROOKLYN, NEW YORK.

VAPORIZER AND IGNITER FOR OIL-ENGINES.

SPECIFICATION forming part of Letters Patent No. 762,960, dated June 21, 1904.

Application filed July 22, 1903. Serial No. 166,532. (No model.)

To all whom it may concern:

Be it known that we, NELSON L. TUCK and WILLIAM W. TUCK, citizens of the United States, and residents of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Vaporizers and Igniters for Oil-Engines, of which the following is a specification.

This invention relates to igniters for internal-combustion engines, the main object of the invention being to provide an igniter of a nature such that it will afford a large heating-surface on which the fuel will be sprayed and then be ignited by the heat developed in the igniter as the mixture or charge is compressed by the piston of the engine after the said igniter once reaches a given temperature and the engine is started and operated a short while by ordinary means, as alcohol fuel and an ordinary igniter.

The invention is embodied in the apparatus shown in the accompanying drawings, forming part hereof, in which—

Figure 1 is a vertical sectional view of an engine in which the invention is embodied. Figs. 2 and 3 are outside views of two forms of the novel igniter.

In the drawings the reference *a* marks the cylinder, *b* the fuel-injector, and *c* an ordinary igniter.

The reference *d* marks a spherical shell suspended in a housing between the injector *b* and the igniter *c* by a bolt or screw. This shell may be provided with a lot of perforations *e*, as in Figs. 1 and 2, or may be left intact, as in Fig. 3, but is always provided with an opening *f*, through which the fuel is sprayed by the injector *b*. By preference there is a shelf, guide, or catch *g* below the opening *f* to catch drip. The vaporized fuel passes out through the opening *f*, or openings *e* and *f*, as the case may be, and is fired or exploded by the heat developed in the igniter *d* during the compression of the mixture or charge. The oil sprayed into the igniter strikes against the inner surface of the sphere and is vaporized

by the heat contained in said sphere, and the shape of the igniter is such that the fuel is kept in the hottest part of the space long enough to thoroughly vaporize it, while the holes *e* provide for the gradual escape of the vaporized fuel into the end of the cylinder.

The shell *d* is made of any material, such as cast-iron, which possesses the properties required.

The engine is started by the use of alcohol and an ordinary igniter and is operated until the igniter *f* or *f g* is hot enough to rise to a firing temperature during the compression of the charge after having vaporized the fuel sprayed thereon by the injector.

What is claimed is—

1. The combination of an upright cylinder, an injector for spraying oil into said cylinder transversely thereof, a hollow igniting sphere provided with an opening therein on that side next said injector, and a flange or drip-catch underneath said opening.

2. The combination with the cylinder of a hydrocarbon-engine, an injector for spraying oil thereinto transversely thereof, and a hollow igniting sphere provided with an opening in the side thereof next said injector and with numerous small perforations for the escape of the gases of ignition, or explosion.

3. In a hydrocarbon-engine, the combination of an upright cylinder, an injector for spraying oil thereinto transversely thereof, and a hollow igniting sphere provided with an opening therein opposite said injector, with numerous small perforations in the walls thereof, and with a flange or drip-catch beneath said opening.

Signed at New York, in the county of New York and State of New York, this 21st day of July, A. D. 1903.

NELSON L. TUCK.
WILLIAM W. TUCK.

Witnesses:

FRANK RYALL,
R. W. BARKLEY.