

# UNITED STATES PATENT OFFICE.

GEORGE B. SELDEN, OF ROCHESTER, NEW YORK.

## FUEL.

No. 929,503.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed October 28, 1904, Serial No. 230,370. Renewed May 13, 1909. Serial No. 495,833.

*To all whom it may concern:*

Be it known that I, GEORGE B. SELDEN, a citizen of the United States, residing at Rochester, in the State of New York, have invented an Improved Fuel, of which the following is a specification.

My invention relates to an improved fuel, more especially adapted for producing motive power in internal ignition engines, and is designed to increase the explosive force of a charge of said fuel when mixed with air, and at the same time to deodorize the exhaust, the formation of smoke being also partially or entirely prevented.

The most important point in the preparation of my improved fuel consists of the addition to the ordinary liquid fuel of a suitable volatilizable peroxid. I add to the liquid fuel, which is ordinarily a petroleum distillate, but which may be an alcohol, ether or other suitable liquid hydrocarbon, a suitable volatilizable peroxid, of such a character that it gives only gaseous products on combustion. Of such peroxids the most familiar is peroxid of hydrogen, and I have found on the addition of this to the liquid fuel that a notably increased pressure and power is produced.

The aqueous solution of peroxid of hydrogen may be utilized by running a small quantity of such solution into the air inlet apparatus of internal ignition engines. I prefer, however, to use a solution which contains little or no water, and I obtain this solution in the following way. The ordinary aqueous solution of peroxid of hydrogen is mixed with gasoline, ether, or other suitable liquid hydrocarbon, and the peroxid passes from the water to the hydrocarbon. The latter, being then decanted, will be found to give increased power in the engine. The solution of hydrogen peroxid in ether, however, mixes in any proportion with the liquid fuel; and such mixture may be used in any ordinary or preferred type of internal ignition engine with any usual or preferred kind of compression, exhaust mechanism and carbureter. About three per cent. of weight of the solution of peroxid of hydrogen in ether will give a decided increase in power. A slightly larger proportion may be used, the operator keeping in view, of course, the strength of his engine and other circumstances. I have discovered also that peroxid of hydrogen and similar volatilizable peroxids have a

very powerful effect in deodorizing the exhaust of internal ignition engines. For such purpose said peroxids may be used alone, in mixture with the liquid fuel, or in combination with various other substances mixed therewith, which increase the pressure of the exploding charge in an engine. Thus a liquid fuel consisting of a hydrocarbon having from one to two per cent. of nitro-benzol (oil of mirbane) and a small amount of peroxid of hydrogen (say one-half of one per cent.) added thereto will give a decided increase of power produced in an engine in which it is used, and the exhaust therefrom will be perfectly deodorized. Repeated tests have shown that it is impossible to detect any odor even from the lubricating oil.

My invention includes the use of other peroxids than the peroxid of hydrogen that will give only gaseous products on combustion, such as benzoic and acetic peroxids and similar substances. The peroxid may be also introduced into the liquid hydrocarbon in various other ways, as by an alcoholic solvent.

I claim:—

1. As an improved fuel for internal ignition engines, a liquid hydrocarbon containing a volatilizable peroxid, substantially as described.

2. As an improved fuel for internal ignition engines, a liquid hydrocarbon containing a vehicle carrying a volatilizable peroxid, substantially as described.

3. As an improved fuel for internal ignition engines, a liquid hydrocarbon containing a peroxid and a nitro-substitution compound, substantially as described.

4. As an improved fuel for internal ignition engines, a liquid hydrocarbon containing peroxid of hydrogen and a nitro-substitution compound, substantially as described.

5. As an improved fuel for internal ignition engines, a liquid hydrocarbon containing a peroxid and nitro-benzol, substantially as described.

6. As an improved fuel for internal ignition engines, a liquid hydrocarbon containing peroxid of hydrogen and nitro-benzol, substantially as described.

GEORGE B. SELDEN.

Witnesses:

J. STEPHEN GIUSTA,  
W. MAX DUVAL.