

UNITED STATES PATENT OFFICE.

PATRICK A. SULLIVAN, OF CINCINNATI, OHIO.

CARBON REMOVER.

No Drawing.

Application filed September 13, 1920. Serial No. 409,957.

To all whom it may concern:

Be it known that I, PATRICK A. SULLIVAN, a citizen of the United States of America, and resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Carbon Removers, of which the following is a specification.

An object of my discovery is to provide a carbon removing compound that will remove carbon deposits from within an internal combustion engine cylinder and that will prevent formation of such deposits therein, such carbon removing compound having properties that will cause the carbon to soften and disengage from the cylinder walls and piston without injuring the engine.

Another object is to provide a carbon remover that can be injected into the cylinders or that can be mixed with the gasoline that is fed to the engine.

Another object is to provide a carbon remover compound that will not readily vaporize, wherefor the compound can enter into the interstices of the carbon, thereby softening the carbon.

My discovery comprises mirbane, creosote oil, and fuel oil.

Fuel oil also known as kerosene is preferred, altho other oils may be used, because it will not vaporize readily, but will remain in the cylinder and will attack the carbon, softening the carbon and breaking it into fine particles. The creosote oil and the mirbane, because of their capillary affinity penetrate the interstices of the carbon, carrying the fuel oil with them, whereby the fuel oil is thoroughly distributed thru the carbon. The fuel oil thereby causes the carbon to loosen from the cylinder wall and the piston, whereupon the carbon is blown out of the engine exhaust.

The following proportions of oils give excellent results but no special proportions of these liquids are necessary. I mix 3 quarts of fuel oil, 1½ pints of creosote oil and ½ pint of oil of mirbane. I have found that the foregoing produces a compound of fuel oil saturated with a solution of oil of mirbane

and creosote oil which seems to be most effective, the oil of mirbane and creosote oil entering into the finest crevices and interstices in the carbon and carrying the fuel oil along into such interstices. The film of fuel oil on the engine prevents formation of carbon on the interior of the engine, after the carbon has been removed from such engine.

The carbon remover can be fed directly to the cylinders to remove carbon deposits upon the interior of the engine. After these deposits have been loosened, it is preferable to add the carbon remover to the gasoline that is fed to the combustion chambers, the remover compound preventing precipitation of hard carbon deposits upon the cylinder walls.

When the compound is applied to cylinders directly, I inject about ¼ oz. of such compound into each cylinder. When adding the compound to the gasoline, I add about ¼ oz. of such compound to each gallon of gasoline.

Good results are had from a compound comprising fuel oil and limpid oil in the stated proportions, but it is preferable to add oil of mirbane as explained before.

Creosote oil is refined from dead oil which is a coal tar product.

What I claim is:—

1. A carbon removing compound composed of kerosene, oil of mirbane and creosote oil.
2. A carbon removing compound composed of kerosene saturated with a solution of oil of mirbane and creosote oil.
3. A carbon removing compound composed of kerosene and creosote oil.
4. A carbon remover compound comprising 3 quarts of kerosene and 1½ pints of creosote oil.
5. A carbon remover compound comprising 3 quarts of kerosene, 1½ pints of creosote oil, and ½ pint of oil of mirbane.

In testimony whereof, I have hereunto subscribed my name this 10th day of September, 1920.

PATRICK A. SULLIVAN.