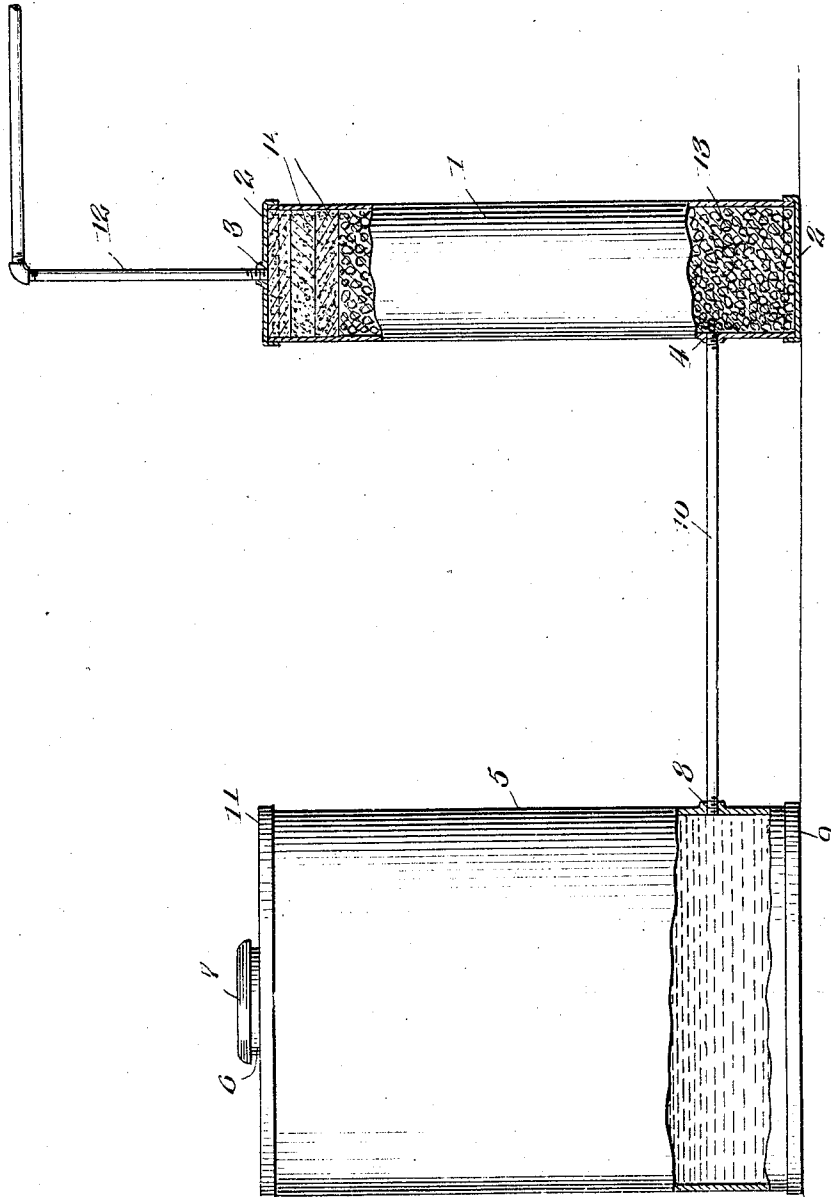


O. A. BENKENDORF.
 PURIFYING DEVICE FOR HYDROCARBON FUEL GASOLENE.
 APPLICATION FILED MAY 27, 1911.

1,015,662.

Patented Jan. 23, 1912.



WITNESSES

S. E. Wade
C. E. Danner

INVENTOR

OTTO A. BENKENDORF

BY *Munn & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE.

OTTO AUGUST BENKENDORF, OF BELEN, NEW MEXICO.

PURIFYING DEVICE FOR HYDROCARBON-FUEL GASOLENE.

1,015,662.

Specification of Letters Patent.

Patented Jan. 23, 1912.

Application filed May 27, 1911. Serial No. 629,770.

To all whom it may concern:

Be it known that I, OTTO A. BENKENDORF, a citizen of the United States, and a resident of Belen, in the county of Valencia, and State of New Mexico, have invented a new and useful Improvement in Purifying Devices for Hydrocarbon-Fuel Gasolene, of which the following is a specification.

My invention is an improvement in purifying devices for hydrocarbon fuel gasolene, and has for its object the provision of a simple, economical device for thoroughly purifying hydrocarbon liquid fuels, as, for instance, gasolene, by removing mechanically the solid impurities, and by utilizing the water impurities chemically in such manner as to enrich the fuel.

In the drawing is shown a side view of a simple embodiment of the invention, parts thereof being in section.

As is known, hydrocarbon liquid fuels, such as commercial gasolene, are liable to contain, in addition to solid impurities, greater or less quantities of water, which, when the gasolene is used for lighting purposes, is very liable to extinguish the light, and at the least will cause the flame to snap or splutter. The solid impurities are also very liable to clog the pipes, which as a rule are hollow wires, and thus shut off the supply of gas to the burner. Such stoppages are extremely difficult, first, to locate, and, second, to remove. When the fuel is used for explosion engines, like results are liable to occur, and the engine cannot exert its full efficiency with a poor grade of fuel. The present invention is designed to be interposed in the system between the supply tank and the place of utilization of the fuel.

The embodiment of the invention shown comprises a casing 1, cylindrical in form in the present instance, and closed at each end by a cap 2. The upper cap is provided with an internally threaded boss 3, and the casing 1 is provided near its lower end with a similar boss 4. The supply tank 5 is arranged at a suitable point and may be of any desired shape, size, and construction. In the present instance the tank is cylindrical in form, and is provided in its top with the usual filling nipple 6 closed by a cap 7. The tank is provided with an internally threaded lateral boss 8 spaced above the bottom 9 of the tank, and one end of a pipe 10 is threaded into the boss 8. The pipe 10 leads from the tank to the casing 1,

and the opposite end of the pipe is threaded into the boss 4 of the tank. A pipe 12 is threaded at one end into the nipple 3, and the said pipe leads to the place of utilization of the fuel, as, for instance, the carbureter of an explosion engine, or the gasometer of a lighting system.

The casing 1 is partially filled with calcium carbide, designated by the reference character 13, the said filling of carbide extending almost to the top of the casing. Either or both of the caps 2 may be threaded onto the casing, to permit the insertion and removal of the carbide, or a filling opening may be provided. A plurality of layers or disks 14 of felt or like material are arranged in the casing above the carbide, and preferably filling the space between the said filling of carbide and the top of the casing. It is obvious that a greater or less number of mats or disks may be used, as may also a different quantity of carbide. The mats strain or filter the gas, while the carbide and the mats remove the solid matters mechanically. Any moisture that may be held by the fuel will be taken up by the carbide and will react upon the said carbide, forming acetylene gas, which will be carried along by the gaseous fuel and will burn therewith. It will be obvious that but a small amount of acetylene gas will be present at any time, so small that it will not be appreciable. All of the water, however, will be absorbed and separated from the gaseous fuel, so that a pure gas will be delivered at the place of utilization. The filter thus acts not only mechanically, but chemically as well, and the supply may be renewed when necessary and the slaked carbide removed. The gasified fuel for a considerable portion of its travel passes in close contact with the carbide, so that all of the moisture will be eliminated.

The supply pipe from the tank is arranged to deliver above the bottom of the casing, in order that the said pipe may not become clogged with the slaked carbide, and in order that the incoming fuel may enter the casing above the level of the slaked carbide, and in a position such that the said fuel comes immediately into contact with unchanged carbide.

I claim:

1. In combination with the supply tank of a system using hydrocarbon fuel, of a casing, a pipe leading from the tank to the

casing and opening into the casing above the bottom thereof, a discharge pipe leading from the top of the casing, a filling of calcium carbid in the casing, said filling extending to a point near the top of the casing, and a plurality of felt mats arranged above the carbid between the same, and the top of the casing, and resting on the carbid.

2. A device of the character specified, comprising a casing adapted to be interposed in the supply pipe of a hydrocarbon

fuel utilizing system, and provided with an inlet near its bottom and an outlet near its top for connection with the pipe, a filling of calcium carbid in the casing, and a layer of fabric material arranged transversely of the casing between the inlet and the outlet. 15

OTTO AUGUST BENKENDORF.

Witnesses:

H. R. WETMORE,
P. P. SIMMONS.