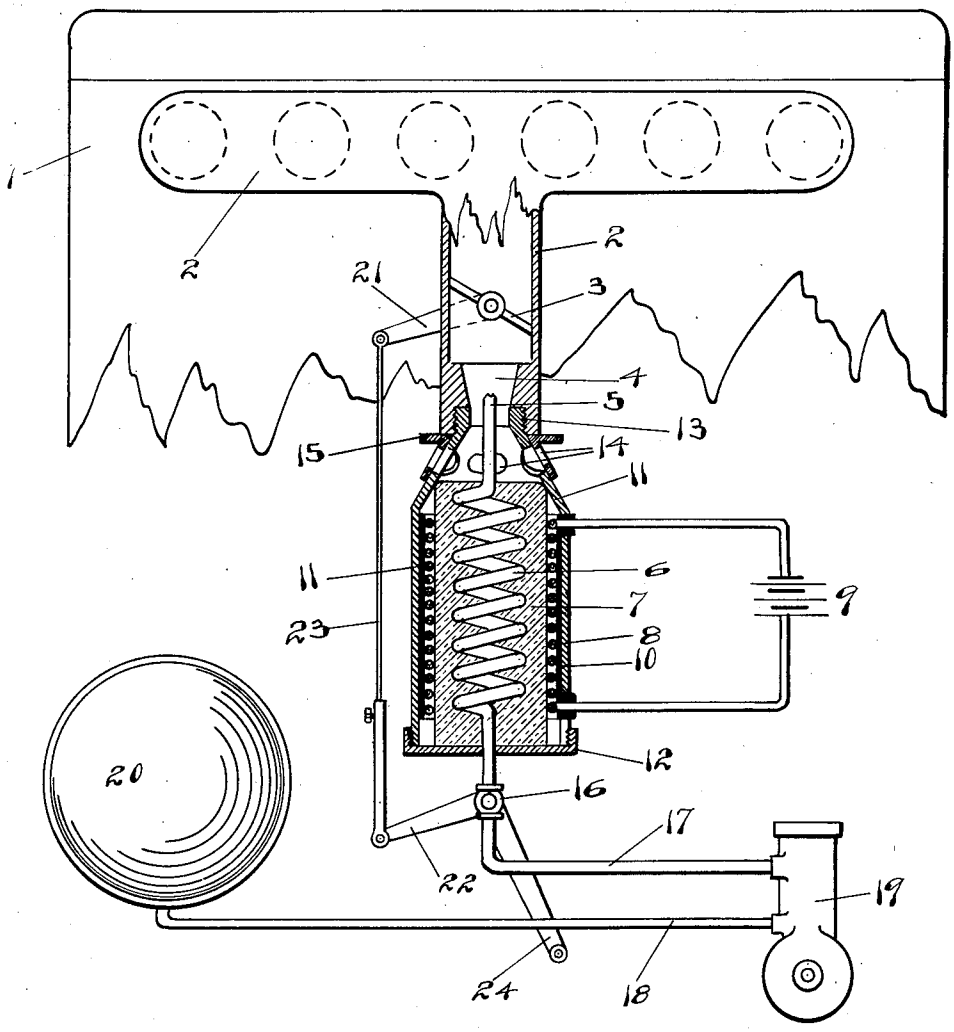
Oct. 6, 1931. T. G. SULLIVAN 1,825,830

GASIFIER

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UNITED STATES PATENT OFFICE

TIMOTHY G. SULLIVAN, OF PORTLAND, OREGON

GASIFIER

Application filed March 23, 1929. Serial No. 349,383.

My invention relates to gasifiers in general, and particularly to such devices adaptable to internal combustion engines for preparing the fuel mixture therefor.

The object of my invention is to provide a device that will deliver a perfect gas to the engine instead of the mechanical mixture of spray heretofore used. I accomplish this object by means of the construction illustrated in the accompanying drawing, which is a part of this application for Letters Patent, like characters indicating like parts therein, and which is a sectional elevation of my device.

In general my device consists of an electrical heating unit through which the liquid fuel is passed on its way to the Venturi tube and the intake manifold of the engine.

In the drawing 1 represents the upper portion of the cylinder block and the cylinder head of the engine, and 2 the intake manifold with the usual butterfly valve 3 therein. In the lower part of said intake manifold is the Venturi tube 4. Within said Venturi tube is positioned the fuel nozzle 5, which nozzle is a prolongation of a coil of pipe 6 embedded in an insulating medium of high heat conductivity, such as a glass cylinder 7, or the like.

Wound upon said cylinder is an electric wire 8 in series with a source of electric current, such as the battery 9. Surrounding said wire 8 is an insulating sleeve 10, and the said sleeve together with the electrical wire and the glass cylinder is enclosed in a shell 11, being held therein by a cap 12. The upper portion of said shell is threaded into the lower portion of the intake manifold at the Venturi tube, as shown at 13.

The upper portion of said shell is perforated with orifices 14, and a closure member 15 is rotatably mounted thereupon, and is provided with corresponding orifices, for the purpose of opening or closing said orifices 14 by rotating said closure member into any desired position, thus regulating the admittance of air into the Venturi tube.

The lower end of said pipe coil 6 projects beyond the cap 12 to be connected into a regulating valve 16, which valve is connected by a pipe 17 to the discharge port of a pump 19. The supply port of said pump is connected by a pipe 18 to the fuel tank 20. The pump is operated from the engine in any suitable manner, such not being a part of the present invention and being well known to the art is not illustrated in the drawing.

An arm 21 is provided for operating the butterfly valve 3, and a similar arm 22 is provided for operating the regulating valve 16. Said arms are connected by a rod 23, which is rendered adjustable as to length by having a portion thereof hollow, the two portions being secured together by means of a set screw. A further arm 24 is connected to the valve 16 to operate the same, and is to be connected to operating mechanism conveniently located respective to the operator of the engine, such operating mechanism being well known to the art is not illustrated in the drawing.

My invention may be made of any size, and constructed of any materials deemed convenient and suitable for a device of this character, and while I have illustrated and described a form of construction and arrangement of parts found desirable in materializing my invention, I wish to include in this application all mechanical equivalents and substitutes that may fairly be considered to come within the scope and purview of my invention as defined in the appended claim.

Having disclosed my invention so that others may be enabled to construct and to use the same, what I claim as new, and desire to secure by Letters Patent is:

In a gasifier for internal combustion engines: a Venturi tube; a nozzle within said tube; an electric insulating member of high heat conductivity; a coiled pipe embedded within said member and connected with said

nozzle; an electric heating coil upon said member and connected with a source of electric current; an insulating sleeve surrounding said heating coil; a shell encasing said sleeve and connected with said Venturi tube; air admitting orifices in said shell adjacent said Venturi tube; a closure member for said orifices mounted upon said shell; and means for forcing liquid fuel through said pipe coil.

In witness whereof I claim the foregoing as my own I hereunto affix my signature at Portland, county of Multnomah, State of Oregon, this 18th day of March, 1929.

TIMOTHY G. SULLIVAN.