

G. E. ROSS.
HYDROCARBON PREHEATER FOR CARBURETERS.
APPLICATION FILED FEB. 23, 1918.

1,305,170.

Patented May 27, 1919.

Fig. 1.

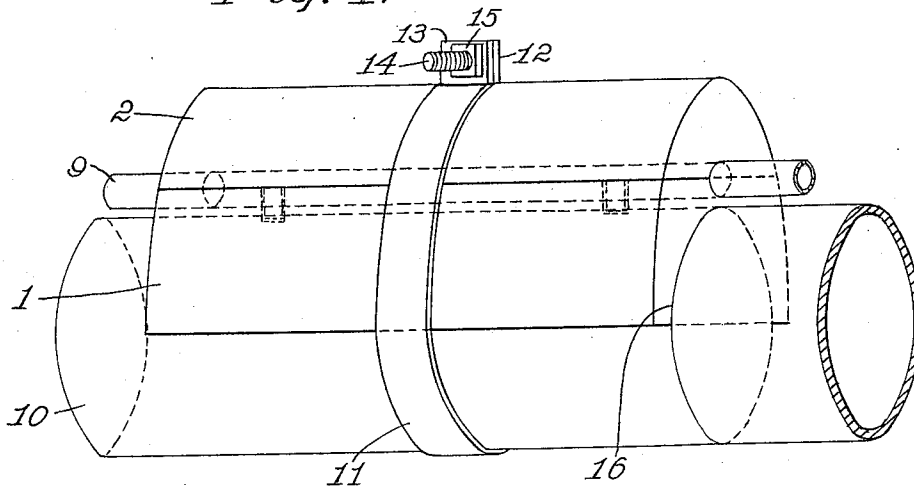


Fig. 2.

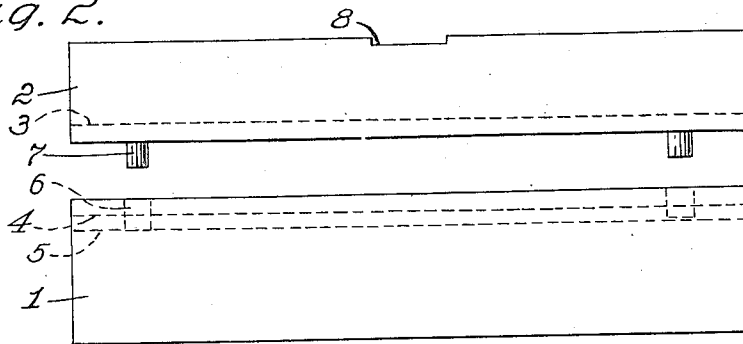
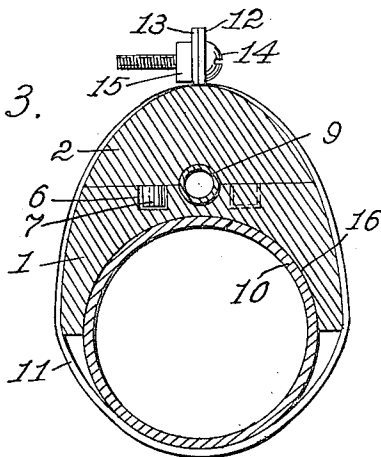


Fig. 3.



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HYDROCARBON-PREHEATER FOR CARBURETERS.

1,305,170.

Specification of Letters Patent.

Patented May 27, 1919.

Application filed February 23, 1918. Serial No. 218,883.

To all whom it may concern:

Be it known that I, GEORGE E. ROSS, a citizen of the United States of America, and a resident of Waterloo, Blackhawk county, Iowa, have invented certain new and useful Improvements in Hydrocarbon-Preheaters for Carbureters, of which the following is a specification.

My invention relates to improvements in hydrocarbon pre-heaters for carbureters for internal combustion engines, and the object of my improvement is to supply simple and inexpensive means for this purpose, adapted to be detachably mounted upon an exhaust pipe or other source of heat adjacent to a carbureter, and be heated to conduct heat to an included conduit for the heavier kinds of hydrocarbons to change same to a vaporous condition and transmit same in heated condition to the carbureter.

This object I have accomplished by the means which are hereinafter described and claimed, and which are illustrated in the accompanying drawings, in which Figure 1 is a perspective view of my improved device as mounted upon part of an exhaust-pipe of an engine; Fig. 2 is a side elevation of the body parts of the device as slightly separated from each other, and Fig. 3 is a transverse section of these parts taken through one of the pin-sockets of the lower section.

In the drawings, similar numerals of reference denote corresponding parts throughout the several views.

My hydrocarbon pre-heating device is of simple construction, consisting essentially of two body-parts 1 and 2 fitted together detachably, and preferably formed of cast-iron. The lower part 1 has its lower face medially longitudinally hollowed or downwardly troughed at 16 semi-circularly to fit upon the exhaust-pipe 10 of an internal-combustion engine, or other pipe or body containing heating-means or being in a heated condition. The flat top of the part 1 has an upper part or section 2 superposed upon it in registration, the part 2 having depending pins 7 removably seated in sockets 6 in the part 1 to keep the parts in registration. The parts 2 and 1 have respectively registering half parts of longitudinal medial hollows or troughs 3 and 4, which taken together provide a longitudinal cylindrical tubular opening through the assembled device to receive and hold a tubular conduit 9, separably.

When these parts are assembled as shown in Fig. 1, they are clamped together by the following means: The top of the part 2 has a medial transverse flattened groove 8. The numeral 11 denotes a flat metal band which is clamped around said parts 1 and 2 medially, the end parts of the band being seated in the transverse flattened groove 8 to prevent relative longitudinal movements, and the extremities of the band 12 and 13 being bent upwardly and placed in registration and orificed in line to receive a fastening bolt 14 secured adjustably by a nut 15. This clamping means as also the pins and sockets 7 and 6, keep the parts 1 and 2 together in registration, to hold the tubes 9 and 10 in their seats.

The tube 9 is placed in communication between a carbureter and a supply of any of the heavier hydrocarbons, such as kerosene or petroleum, and since the highly heated gases which pass through the pipe 10 from the combustion-chamber of an internal-combustion engine heat the parts 1 and 2 of the device by conduction considerably, the liquid hydrocarbon in passing through the tube 9 becomes heated, in fact, vaporized, and in that condition is delivered into the carbureter where it is mixed with air for use in the engine. Since the parts 1 and 2 are of considerable mass, heat is retained by them for a relatively long time for the purpose mentioned. In this way the heavy hydrocarbons are rendered available, while the simplicity of construction of the device, renders it useful in practice. The clamping-connections shown can be adjusted easily, and the part 1 may be blocked up to space it a distance from the pipe 10, when desired to vary the heat conducted to the pipe 9.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. In a device of the character described, a body made up of overlaid parts, one part being longitudinally troughed to embrace detachably the exhaust-pipe of an internal-combustion engine, said parts having registering grooves forming an orificed channel to receive a conduit for a liquid to be seated by conduction through said parts, and clamping-means embracing said parts and said exhaust-pipe to hold them together detachably, said parts having mating engaging-means engaging to keep them in reg-

istration when fitted about said liquid-conveying conduit.

2. In a hydrocarbon preheater in combination with the exhaust-pipe of an engine; 5 a two-part body having registering plane surfaces provided with registering longitudinal troughs, a conduit-pipe for hydrocarbon seated removably in said troughs in contact with the body-parts, one of the body-parts 10 being troughed longitudinally along its under face to fit removably over said exhaust-pipe, one of the body-parts having

sockets in its said plane surface and the other body-part having pins in its plane surface fitting said sockets removably, a 15 flexible band passed about said exhaust-pipe and body-parts, the upper body-part having a transverse groove to receive the band, and means for securing the ends of said band together detachably. 20

Signed at Waterloo, Iowa, this 12th day of Feb. 1918.

GEORGE E. ROSS.