Feb. 3, 1931. L. HAREL 1,791,204

CARBURETOR

Filed Feb. 13, 1929

FIG. 1

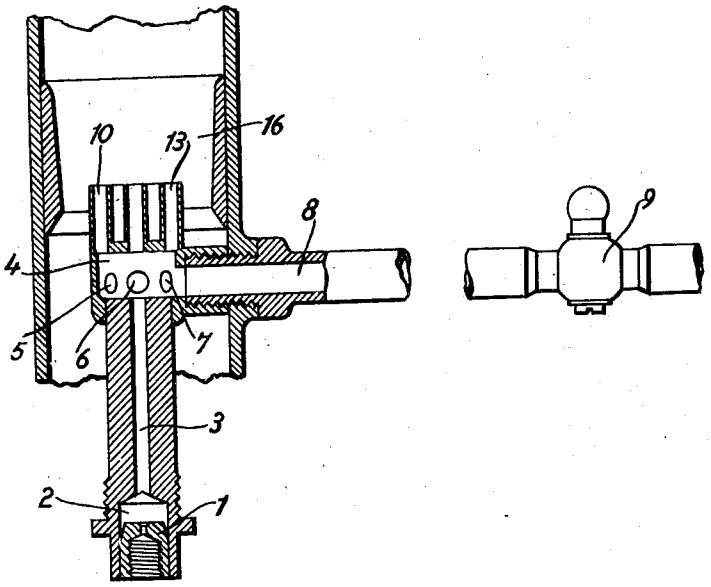
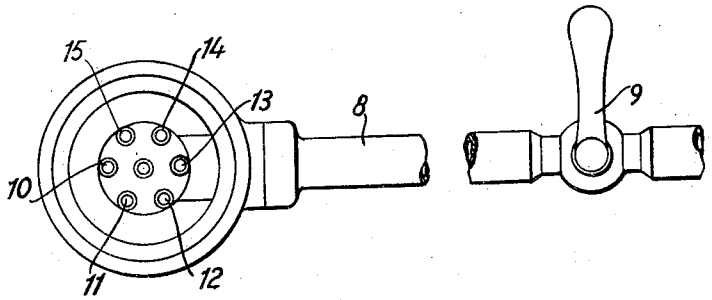


FIG. 2



Inventor
L. Harel:
by
W. E. [illegible]
Attorney

Patented Feb. 3, 1931 1,791,204

UNITED STATES PATENT OFFICE

LUCIEN HAREL, OF BARCELONA, SPAIN

CARBURETOR

Application filed February 13, 1929, Serial No. 339,628, and in Spain June 21, 1928.

It is known that in internal combustion engines the mixtures of gas and vapour should be as intimate as possible and the volatile liquid finally atomized in order that the ignition may take place rapidly and completely thus ensuring a high thermal efficiency.

According to the invention an intimate mixture of the volatile liquid with air is produced with much better results than with a simple diffuser, as well as an effective regulation of the richness of the mixture according to the variable conditions under which the motor operates in a motor vehicle.

According to the invention a mixing chamber is provided in which the volatile liquid is discharged from a jet nozzle and in which the volatile liquid mixes with air which passes into the chamber through holes one of which is in communication with an air tube having a valve cock adapted to be regulated by the driver of the vehicle. The mixing chamber communicates with the interior of the diffuser by means of a plurality of tubes in order that the mixture may be intimately effected.

The invention is shown in the accompanying drawings by way of example.

In the accompanying drawings

Figure 1 represents a vertical section of an apparatus comprising the invention, while

Figure 2 is the corresponding plan.

In carrying the invention into effect as illustrated in the accompanying drawings, the jet nozzle 1 is mounted within the enlarged lower part 2 of a tube 3, the bore of which is reduced in diameter for the main part of its length and opens at its upper end into a chamber 4 communicating with the atmosphere by means of orifices such as 5, 6 and 7, except the one which communicates with a tube 8 upon which is provided valve cock 9, the free end of the tube 8 communicating also with the atmosphere. The upper part of the chamber 4 communicates by means of tubes 10, 11, 12, 13, 14 and 15 with the interior of the diffuser 16.

The air passes to the chamber 4 through orifices such as 5, 6, 7 and through the tube 8, the intensity of the depression in the said chamber being possible of regulation in such manner that the greater the quantity of air admitted, the smaller the depression and consequently the less amount of volatile liquid passing through the jet nozzle 1. Consequently the driver can graduate the richness of the mixture by regulating the position of the valve cock 9 which controls the admission of air through one of the said orifices.

On level roads and in descending, the driver will open wide the valve cock 9 whereby the air admission will be considerable and the amount of volatile liquid small, whilst in ascending, the driver will close the valve cock 9 in order that the depression in the chamber 4 may be greater and the mixture may be richer the motor thus developing greater power.

In such an arrangement, the volatile liquid passing from the jet nozzle 1 passes into the chamber 4 where the mixture leaving by the tubes 10, 11, 12, 13, 14, 15 in the direction of the diffuser 16, is more or less rich according to the position of the opening of the valve cock 9.

It will thus be understood that such an arrangement operates as an effective economizer of the combustible liquid.

The invention may be carried into effect in apparatus and carburetors of various forms.

I claim:

1. In a carburetor of the jet type a tubular atomizing device having the following features in combination: a chamber above the jet nozzle, a passage leading from a position above the jet nozzle to the said chamber, a number of lateral holes in the said chamber through which air from the exterior of the atomizing device may pass into the said chamber, and a number of parallel tubes in position above the said chamber serving as separate and adjacent outlets from the said chamber and having intermediate spaces between the said tubes, substantially as hereinbefore described.

2. In carburetors of the jet type an atomizing device comprising the jet nozzle, a tubular member above the said nozzle, said tubular member having an enlarged part at its upper end forming within it a chamber, and lateral holes therein through which air may pass from the exterior into the said

chamber and parallel tubes at the top of the enlarged part of said tubular member, through which the mixture of vapour and air from the said chamber may upwardly pass, the said tubes having spaces between them in position above the said tubular part, the said tubular part and said tubes being disposed within a part adapted to be connected to and to communicate with the induction pipe, substantially as hereinbefore described.

LUCIEN HAREL.