

Oct. 28, 1930.

A. METZ

1,780,092

HOT AIR ATTACHMENT

Filed April 25, 1927

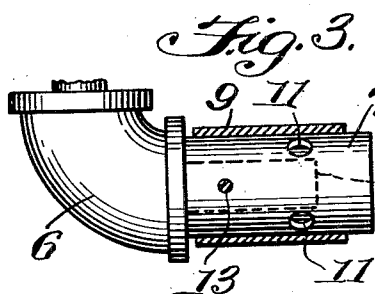
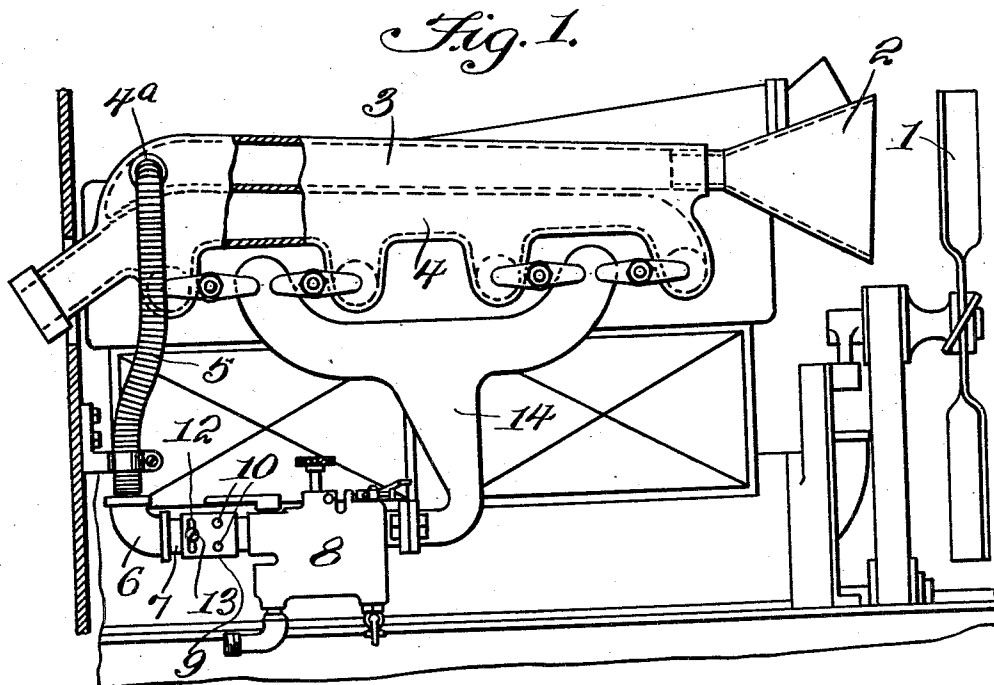
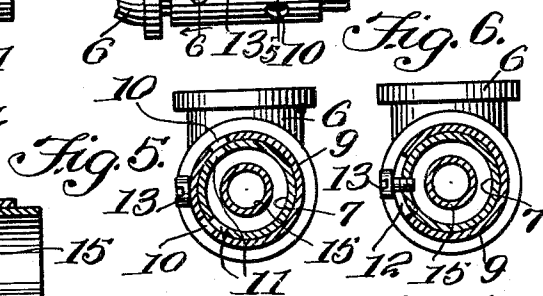
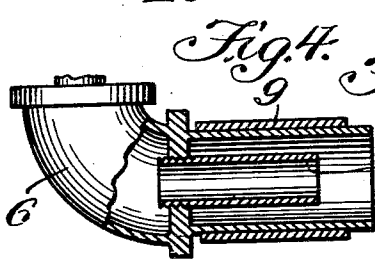
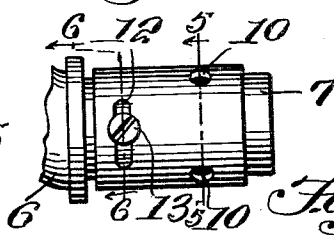


Fig. 2.



Andrew Metz
INVENTOR

BY Victor J. Evans
ATTORNEY

WITNESS: J. L. Wright

UNITED STATES PATENT OFFICE

ANDREW METZ, OF SEWICKLEY, PENNSYLVANIA

HOT-AIR ATTACHMENT

Application filed April 25, 1927. Serial No. 186,491.

This invention relates to a hot air attachment for internal combustion engines. It is well-known that the carbonization on the interior walls of the explosion chambers is a source of much annoyance in keeping the motor in prime condition for efficient action. This is due largely to improper gasification of the hydrocarbon fuel exploded in the chamber which leaves a deposit of carbon on the cylinder walls and creates deficient action, not only interfering with the efficiency of power conversion but producing knocks in the operating mechanism which is not only personally annoying but expensive by reason of the proportional conversion into power of the fuel, and also racking the mechanism and thereby depleting the equipment. It is the object of my invention to remove this difficulty.

I carry out my invention by producing at each suction stroke of the piston a quantum of hot air through a flexible armored hose to an injector coupled with the car carburetor which in turn leads through the intake manifold to the explosion chambers. The injector is inserted in the mouth of the carburetor and is surrounded peripherally by a rotatable sleeve in which a plurality of air holes from the external air are brought into variations of alignment with a sleeve supporting it, said hose being located in the rear of the point of delivery of the injector nozzle so as to carry a jet of hot air into the carburetor for delivery to the explosion chambers of the engine.

The several features of novelty of my invention will be more fully hereinafter described and the novel features definitely indicated in the appended claim.

In the accompanying drawings:

Figure 1 is a side elevation partly in section of a decarbonizing system embodying my improvements.

Figure 2 is a side elevation of an injector embodying my improvements.

Figure 3 is a median sectional view of the coupling with the carburetor with the armored hose.

Figure 4 is a median longitudinal sectional view illustrating the detailed construction of the coupling.

Figure 5 is a cross sectional view on a transverse vertical plane of the injector.

Figure 6 is a similar section in the plane of an adjusting slot for the sleeve.

Referring now in particular to the drawings, 1 represents a fan usually provided in automobiles for blowing cool air over the engine, and 2 represents the flaring mouth of a metallic conduit 3 preferably formed integral with the exhaust manifold 4 of a hydrocarbon engine. This conduit terminates near the rear wall of the exhaust manifold in which I provide an outlet 4^a with a threaded tip for connection with a flexible hose 5 preferably lined with some incombustible material, such as asbestos cloth, and covered with a plurality of metallic segments, interconnected in the usual form in metallic hose connections and which is perfectly flexible and may be led by the shortest path to a right angled coupling 6, into which a pipe 7 connected with the carburetor 8 may be united. On the outside of this pipe 7 is sleeved a rotatable cylinder 9 provided with a plurality of air holes 10 and placed in alignment with the corresponding holes 11 in the pipe 7. The cylinder 9 has a circumferential slot 12 into which passes a set screw 13 tapped into the wall of the pipe 7.

The carburetor 8 communicates with the intake manifold 14 and thence with the explosion chambers of the engine. As thus described, when the engine is in operation a draft of hot air is drawn through the pipe 5 and passes in a swift jet through the injector tube 15, which is threaded at its joint with the coupling 6 and is set with its delivery end slightly in advance of the peripheral holes 10 on the sleeve. It will therefore be apparent that air is drawn through the holes 10 and delivered to the carburetor to be mingled in the stream, together with hot air through pipe 5 in a jet, and partially vaporized gasoline delivered thereto by the usual form of fuel supply, and thereby a substantially perfect combustible mixture may be provided and the mixture is controlled by the adjustment of the sleeve 9. The mixture supplied by my system effects substantially perfect combustion and avoids any discharge of monoxide gas from the exhaust which is

the source of so many fatalities. Moreover, the device reduces carbon to a minimum and thereby prevents overheating of the cylinders and reduces oil consumption, which will result in maintaining the viscosity of the oil and promoting a better action of the motor. All of these results follow from a better mixture and temperature of the gases led into the cylinder with the companion elements of oxygen, hydrogen and nitrogen properly balanced for perfect combustion.

On account of the liquid fuel being fully gasified in the firing chambers, there will be no ungasified fuel to pass down between the piston and cylinder walls to kill the viscosity of the oil in the crank case.

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

An attachment for an internal combustion engine comprising a conduit formed with the exhaust manifold of the engine, a flared mouth for said conduit and being arranged in the path of the fan of the cooling system of the engine, a flexible pipe in connection with the rear end of said conduit, a coupling on said flexible pipe, a pipe in communication with the carburetor of the engine and formed with the coupling, a tube threadedly secured to the coupling and extending into the last mentioned pipe centrally thereof, and in a manner to be directed toward the carburetor, a sleeve mounted on the last mentioned pipe and being formed with openings arranged so as to register with like openings in the last mentioned pipe, said sleeve being rotatably mounted to adjust the position of the openings with respect to each other, and means to retain the sleeve in adjusted positions and including a headed set screw threadedly secured in the last mentioned pipe and passing through a slot formed in the sleeve.

In testimony whereof I affix my signature.

ANDREW METZ.