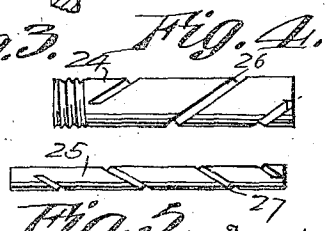
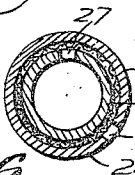
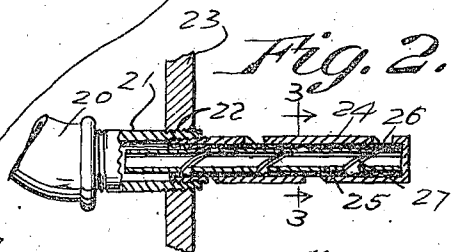
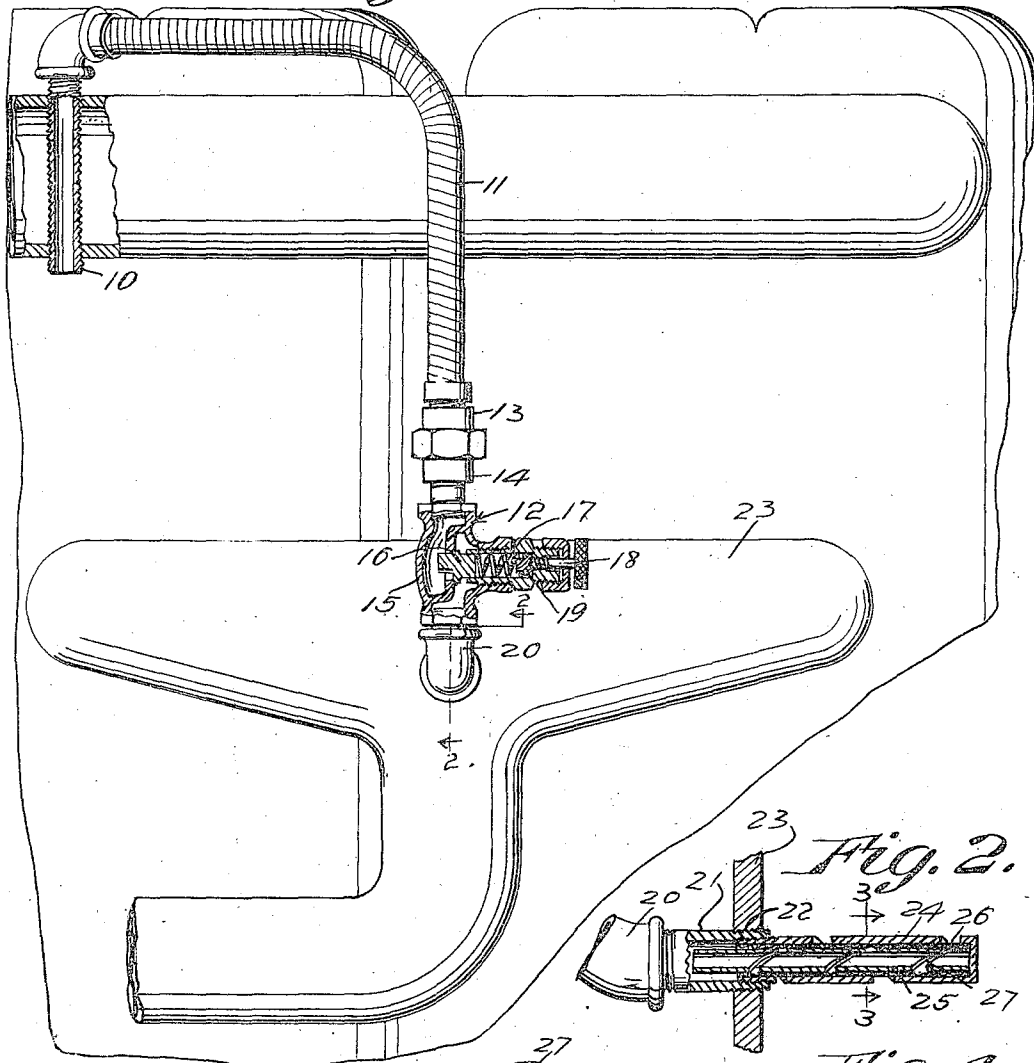


J. O. BROCK.
 ATTACHMENT FOR INTERNAL COMBUSTION MOTORS.
 APPLICATION FILED FEB. 26, 1916.

1,256,976.

Patented Feb. 19, 1918.

Fig. 1.



Witnesses:
 M. J. Pfeiffer
 L. C. Berkeley

Fig. 3.
Fig. 4.
Fig. 5. Inventor,
 John O. Brock
 By Mark A. Ackerman
 Attorney

UNITED STATES PATENT OFFICE.

JOHN O. BROCK, OF WILMINGTON, NORTH CAROLINA, ASSIGNOR TO AUTO INSPIRATOR CO., OF WILMINGTON, NORTH CAROLINA, A CORPORATION OF NORTH CAROLINA.

ATTACHMENT FOR INTERNAL-COMBUSTION MOTORS.

1,256,976.

Specification of Letters Patent. Patented Feb. 19, 1918.

Application filed February 26, 1916. Serial No. 80,712.

To all whom it may concern:

Be it known that I, JOHN O. BROCK, a citizen of the United States of America, and resident of Wilmington, in the county of New Hanover and State of North Carolina, have invented certain new and useful Improvements in Attachments for Internal-Combustion Motors, of which the following is a specification.

This invention relates to devices for feeding air to support combustion in explosive motors, the said invention being adapted for use in supplying air to the carbureted vapor issuing from the carbureter; an object of the invention being to raise the temperature of the vapor and supplying oxygen to support combustion.

A further object of this invention is to provide means whereby the air is heated immediately upon the starting of the motor, the exhaust gases being relied upon to raise the temperature of the air being delivered for the purpose stated, means being also provided for regulating the air intake or supply proportional to the suction produced by the operation of pistons in the cylinders of motors of this type.

A still further object of this invention is to produce an air supplying device having means for causing a whirling action of the air delivered by the device, the said whirling air being effective to break up the current of vapor passing from the carbureter so causing commingling of the air and vapor to produce desirable results, it having been found in practice that a motor equipped with the device forming the subject matter of this invention gains in efficiency and that the consumption of fuel per mile is materially decreased.

With the foregoing and other objects in view, the invention consists in the details of construction, and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this specification wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 illustrates a view in elevation of a fragment of a motor with its exhaust and intake manifold, the invention being shown applied thereto partly in section;

Fig. 2 illustrates a sectional view on the line 2—2 of Fig. 1;

Fig. 3 illustrates a sectional view on the line corresponding with the line 3—3 of Fig. 2;

Fig. 4 illustrates a side elevation of an outer tube;

Fig. 5 illustrates a view in elevation of an inner tube; and

Fig. 6 illustrates a sectional view of a slight modification.

In these drawings 10 denotes an externally threaded pipe adapted to be tapped into and through an exhaust manifold of any ordinary internal combustion motor and the intake end of the said pipe is preferably located adjacent a cylinder of the motor so that the air contiguous to the said cylinder will be in a heated state, and therefore, the air entering the said pipe will be at a relatively high temperature before being affected by the heat of the exhaust gases in the exhaust manifold.

A flexible tube 11 communicates with the said pipe and with a valve 12, there being appropriate couplings 13 and 14 supplied for facilitating the assembling of the parts of the device. The valve, being a type of check valve, consists in a casing 15, a valve seat therein, a valve 16 on the seat with a spring 17 normally holding the valve in closed position, it being understood that as the pistons of the motor operate they serve to unseat the valve and permit the inflow of hot air for the purpose stated. There is a threaded stem 18 which bears against a plate 19 on the spring and this stem is effective to adjust the tension of the spring to make the valve sensitive to the influences of the action of the pistons, thus rendering the valve of utility in connection with motors having different areas and strokes of pistons.

A coupling 20 is joined to the valve and a nipple 21 is externally threaded to enter an aperture 22 in the intake manifold 23 of the motor. The nipple carries tubes 24 and 25, one of which is located within the other and both of which project beyond the end of the nipple. There is a screen or sieve interposed between the two tubes and the tubes have oppositely directed helical slots 26 and 27 respectively which intersect at points throughout their lengths to form discharge openings for the air. The helical

slots form ways for the passage of the air and when the air issues from the ducts into the intake manifold, the said air has a whirling effect so stirring up the vapor passing through the manifold as to effect a commingling of the heated air and the vapor and causing the delivery of an explosive charge to the cylinders, the temperature of which charge is much higher than the temperature of the atmosphere from which the carbureter derives its supply of air. The ends of the tubes are closed, thus insuring radial discharge or approximately radial discharge of the air.

Fig. 6 illustrates a modification in which the pipe A which extends through the exhaust has fins B therein forming baffles to break up the current of air passing there-through and furthermore, the said fins being heated by the exhaust, the air impinging the said baffles will be further heated in travel toward the intake manifold.

I claim:

In an attachment for internal combustion motors, including an exhaust manifold and an intake manifold, a pipe threaded through the exhaust manifold, a nipple extending into the intake manifold, an outer and inner tube supported by the nipple, and extending into the manifold, said outer tube being closed at its end, each of said tubes having a helical slot provided therein, the slots of one tube lying between the slots of the opposite tube, a screen interposed between the tubes, a valve for controlling passage of air to said nipple, and means for connecting the valve and said pipe threaded through the manifold.

In testimony whereof, I affix my signature in the presence of two witnesses.

JOHN O. BROCK.

Witnesses:

LOTTIE E. BARKLEY,
MARGARET I. PFEIFER.