J. W. STIRTON.

GAS ENGINE MANIFOLD.

APPLICATION FILED JUNE 28, 1917.

1,373,459. Patented Apr. 5, 1921.

FIG. 1

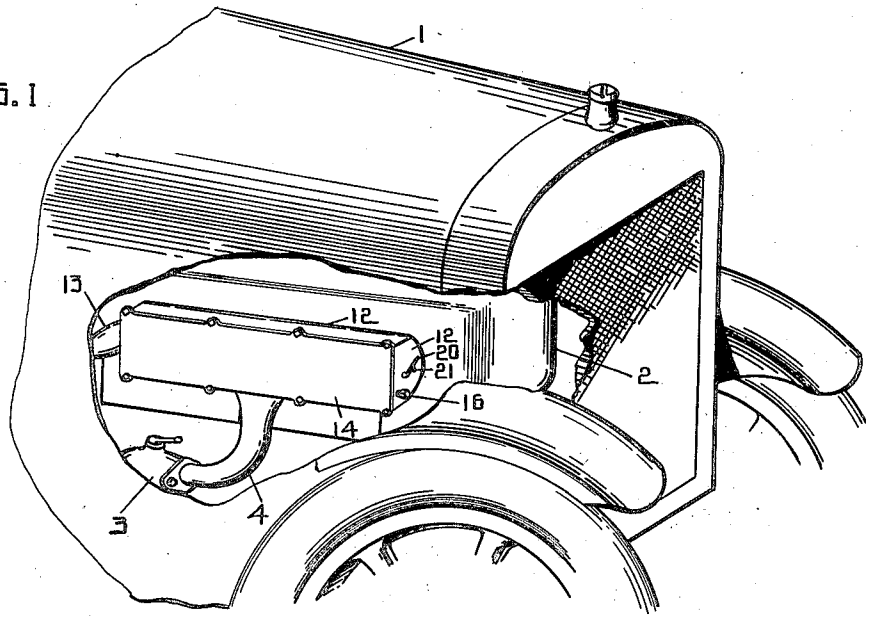


FIG. 4

FIG. 2

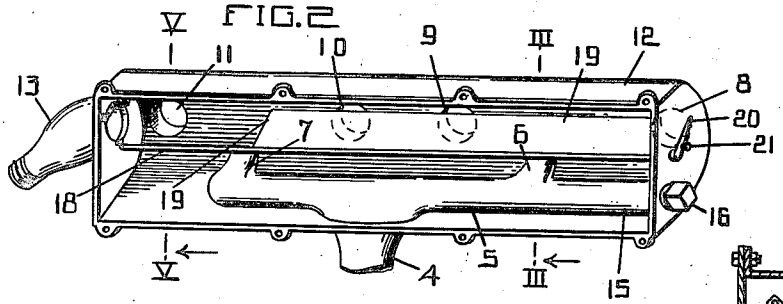


FIG. 5

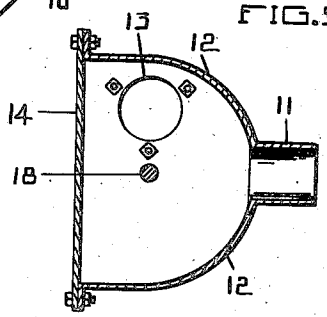
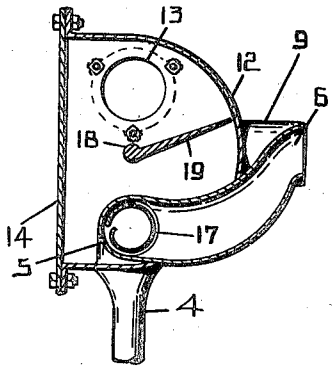


FIG. 3



INVENTOR

James W. Stirton

BY

Geo. E. Kirk

ATTORNEY

UNITED STATES PATENT OFFICE.

JAMES W. STIRTON, OF DETROIT, MICHIGAN.

GAS-ENGINE MANIFOLD.

1,373,459. Specification of Letters Patent. Patented Apr. 5, 1921.

Application filed June 28, 1917. Serial No. 177,481.

To all whom it may concern:

Be it known that I, JAMES W. STIRTON, a citizen of the United States of America, residing at Detroit, Wayne county, Michigan, have invented new and useful Gas-Engine Manifolds, of which the following is a specification.

This invention relates to regenerative heating, especially in the combustion of fuel.

This invention has utility when incorporated as a controllable heater for internal combustion motor fuel charges.

Referring to the drawings:

Figure 1 is a perspective view with parts broken away, of an embodiment of the invention in connection with a motor vehicle internal combustion motor;

Fig. 2 is a detail, in perspective, of the compound manifold device, the front or cover plate being removed;

Fig. 3 is a section on the line III—III, Fig. 2;

Fig. 4 is a fragmentary detail of the heating screen for the fuel intake; and

Fig. 5 is a section on the line V—V, Fig. 2.

The motor vehicle 1 is provided with the internal combustion motor 2. Fuel for this motor 2 is supplied through the carbureter 3 to the intake duct 4 having therein the transverse manifold section 5 from which the branches 6, 7, extend to the multiple cylinder motor 2 in providing the distribution of fuel therefor.

The fuel, after combustion in the motor 2, comes as scavenged hot gases or exhaust through the respective exhaust ducts 8, 9, 10, 11, laterally as branches into the housing or exhaust manifold section 12 having terminally the discharge outlet 13 which may carry off the exhaust gases with their residual heat, say to a muffler.

This exhaust manifold housing 12 envelops the intake manifold 5, thereby providing a hot gas jacket for bringing up the temperature of the carbureted fuel that there may be greater expansive force utilization in the motor 2. The front of the housing 12 is closed by the cover plate 14 bolted in position thereon for facilitating assembly and upkeep.

The exhaust housing enveloped intake manifold 5 has the terminal extension 15 protruding through the end of the housing 12 to have its open end closed by the plug 16. Removal of this plug 16 permits inspection and upkeep care of the intake manifold 5, while for increased heat radiation therein, there may be inserted the perforate member or screen roll 17. This good heat conductor, contacting the hot wall of the manifold 5, is warmed to disseminate heat more thoroughly into the traveling fuel currents passing through and about this member en route to the motor 2.

Longitudinally of the housing 12 extends the rock bar 18 having fast therewith the vane or damper 19 as a deflector. This bar 18 protrudes through the housing 12 adjacent the plug 16 to provide the indicating arm 20. This indicating arm 20 may carry the thumb screw 21 for locking the deflector vane 19 in the desired position to direct the hot exhaust gases all toward the manifold 5, partially toward the manifold 5, or all away from the manifold 5. This controllable feature permits adjusting of the manifold for maximum heating with the lower grade fuels and in colder weather, while the range therefrom may be determined for maximum efficiency short of pre-ignition.

What is claimed and it is desired to secure by Letters Patent is:

1. A multiple intake internal combustion motor, an exhaust manifold embodying a manifold enveloping the intake, and a vane disposed in the exhaust manifold transversely of the incoming exhausts for dividing the inflow therefrom.

2. An internal combustion motor intake, an exhaust manifold enveloping the intake and a longitudinally extending vane swingable to divide the incoming exhaust to deflect more or less thereof toward the intake duct.

3. A device embodying an intake duct, an exhaust duct, one of said ducts enveloping the other and provided with an inlet, and adjustable means against which the blast from the inlet impinges, for controllably deflecting the entering blast for flow in the enveloping duct toward and away from the other duct.

4. An internal combustion motor embodying an intake manifold, an enveloping exhaust manifold provided with an inlet, and a deflector disposed in the exhaust manifold adjacent the inlet and controllable to direct exhaust toward and away from the intake manifold.

5. An internal combustion motor embody-

ing an intake manifold having terminal and lateral openings, an enveloping heater therefor, a heat conducting screen roll insertible in the terminal opening of the intake manifold to intercept a lateral opening, and a closure for the terminal opening.

6. A manifold having a terminal access opening axially of the manifold and beyond the lateral manifold opening, and an enveloping manifold having a lateral access opening independent of the terminal access opening of the enveloped manifold.

7. A carbureted fuel heater embodying an exhaust receiving chamber provided with an inlet, a fuel duct in said exhaust chamber, and means in the chamber adjacent the inlet adjustable to deflect exhaust as to the fuel duct.

In witness whereof I affix my signature.

JAMES W. STIRTON.