E. E. BARTO.

INTAKE MANIFOLD FOR INTERNAL COMBUSTION ENGINES.

APPLICATION FILED MAY 14, 1920.

1,359,314.

Patented Nov. 16, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

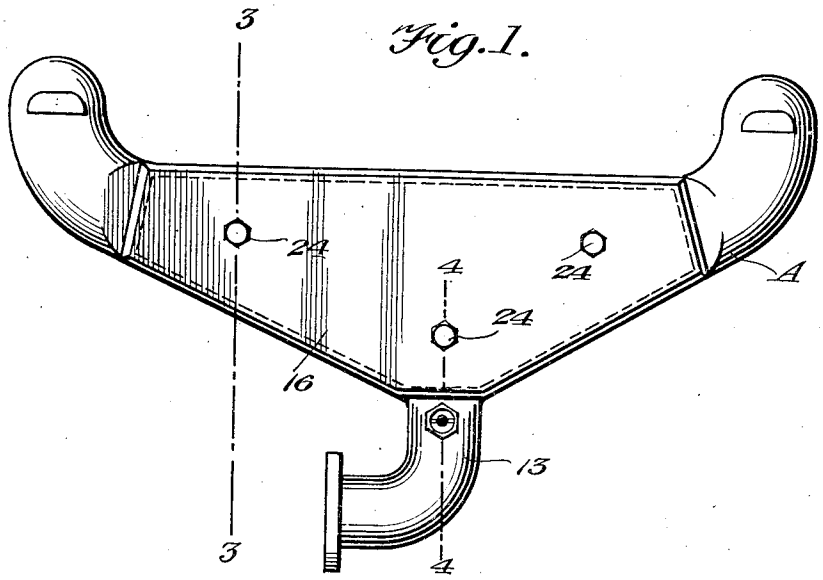
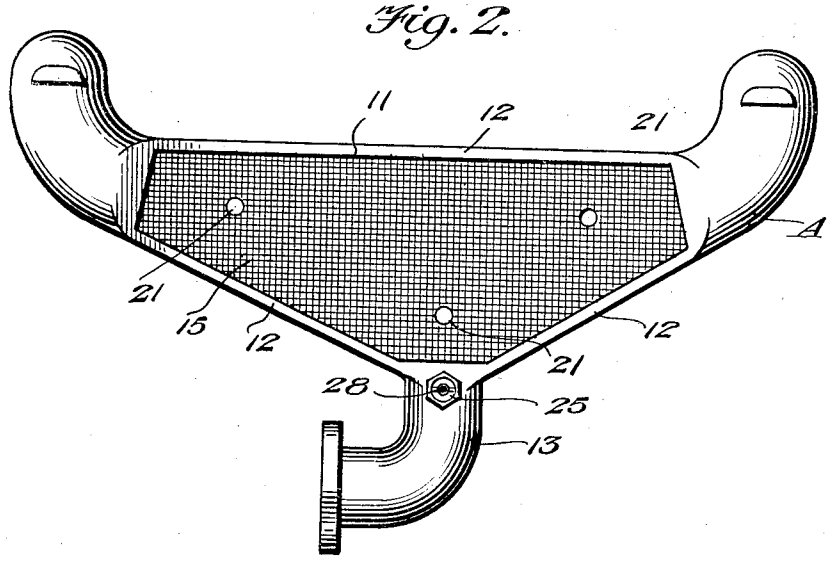


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

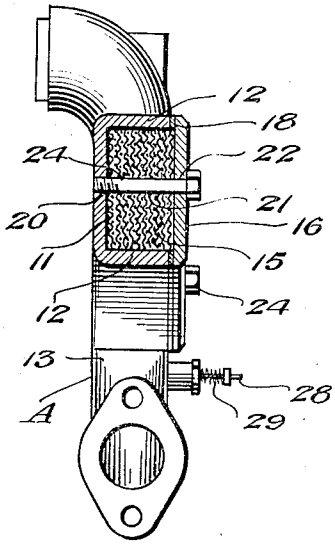


Fig. 4.

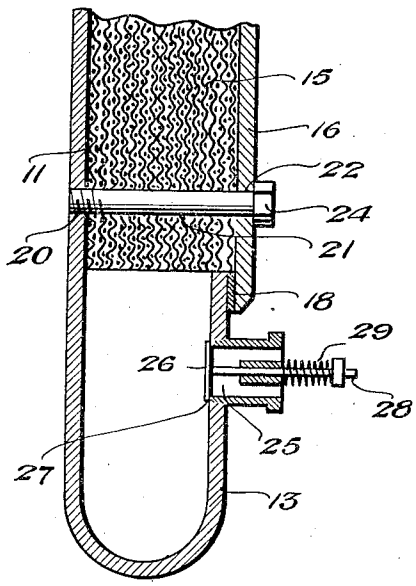


Fig. 5.

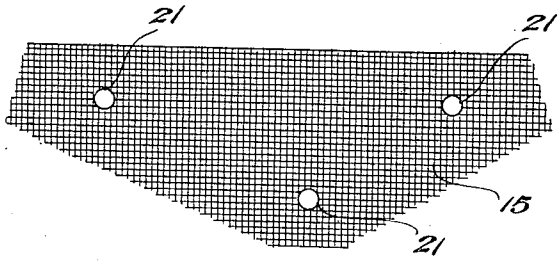
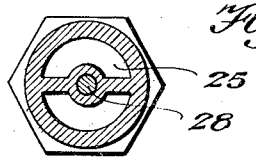


Fig. 6.



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UNITED STATES PATENT OFFICE.

ENOS ETTER BARTO, OF DEODATE, PENNSYLVANIA.

INTAKE-MANIFOLD FOR INTERNAL-COMBUSTION ENGINES.

1,359,314. Specification of Letters Patent. Patented Nov. 16, 1920.

Application filed May 14, 1920. Serial No. 381,502.

To all whom it may concern:

Be it known that I, ENOS ETTER BARTO, a citizen of the United States, residing at Deodate, in the county of Dauphin and State of Pennsylvania, have invented new and useful Improvements in Intake-Manifolds for Internal-Combustion Engines, of which the following is a specification.

The present invention aims to provide a novel construction of intake manifold for internal combustion engines, with a view of retarding the flow of fuel therethrough, thus allowing the fuel proper time to be completely vaporized before entering the cylinders of the engine, and consequently resulting in the saving of fuel.

Another object of importance resides in the provision of a valve controlled air inlet opening in the manifold, the valve being automatically opened incident to the suction of the motor but only when the motor is running above a predetermined speed, thus allowing more air to enter the manifold to dilute the over-rich mixture passing therethrough.

The nature and advantages of the invention will be better understood when the following detail description is read in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawings forming part of this application like numerals of reference indicate similar parts in the several views, and wherein:

Figure 1 is a side elevation of a manifold constructed in accordance with my invention.

Fig. 2 is a similar view with the cover plate removed.

Fig. 3 is a vertical sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is an enlarged sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is a detail view of one of the screen members.

Fig. 6 is a detail view partly in section of the valve.

The manifold forming the subject matter of my invention is indicated generally at A. It differs from the manifold in present day use, by reason of its construction, the body portion of the manifold being substantially of triangular formation as shown. The body portion is also hollow to provide a pocket 11 the side walls of which are indicated at 12. The manifold A and of course the pocket thereof may vary in size without departing from the spirit of the invention. The lower portion of the manifold 13 is of usual construction and communicates with the pocket at one corner thereof. Screen members such as indicated at 15 are adapted to be positioned within the pocket of the manifold in face to face contact, and any number of these members are used when it is found necessary to fill the pocket. Subsequent to the positioning of the screen members 15 within the pocket of the manifold, this pocket is closed by a cover 16 also of triangular formation, and against the inner side of which is arranged a gasket or packing 18. The bottom wall of the pocket is provided with a plurality of openings 20 adapted to register with the openings 21 in the screens 15, and through these openings and the openings 22 in the cover are passed suitable fastening elements 24 to hold all the parts fixed relatively. By reason of this construction, the manifold affords more air space, while the fuel is retarded in its movement through the manifold, and thus giving ample time to be fully and properly vaporized before entering the motor. The screen members 15 are made of galvanized or brass wire so that they will not corrode. When the air and gasolene enter the manifold, the globules of gasolene have a tendency to cling to the wires of the screen members and are prevented from entering the cylinders in their raw state. As the air circulates within the manifold, passing through the latter in a much greater speed than the gasolene, the conflicting currents of air acting on the globules of gasolene which cling to the wire screens, have a tendency to vaporize it completely. As the piston suction draws the mixture into the cylinders, the screen members 15 are maintained completely saturated with gasolene, and as the air currents cannot take hold of the large globules of gasolene, as the screen members hold them fast, only the dry vapor is mixed with the air drawn into the cylinder for combustion. In this manner the gasolene surface of large area is presented to the air current, and a proper vaporization of the fuel takes place in the manifold, before the combustible mixture enters the cylinders. As above stated, the air travels reasonably fast through the manifold, but

the globules of gasolene travel very slowly jumping from one wire to the next of the various screen members until it has been completely vaporized by the action of the air. The construction of the manifold is such that it will permit the use of low test gasolene, increase the power of the motor, and materially reduce carbonization of the cylinders and spark plugs.

The lower portion of the manifold immediately beneath the pocket is provided with an air inlet opening 25, which is normally closed by a valve 26, this valve engaging its seat 27, and including a stem 28 about which a coil spring 29 is arranged and operating to hold the valve normally seated. This valve is automatically opened by the suction of the piston, but only opens when the motor is running above a certain speed. When the engine is idling or throttled low, or operating at a predetermined speed the valve remains closed, but when operating above that speed the suction of the piston opens the valve to allow more air to be drawn into the manifold to dilute the overrich mixture, and thus providing for an even and proper mixture at all speeds.

While it is believed that from the foregoing description the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself to the details of construction herein shown and described, and that such changes may be resorted to when desired as fall within the scope of what it claimed.

What I claim is:

1. An intake manifold for combustion engines comprising a body portion of substantially triangular formation and defining a pocket, a plurality of foraminated members constituting a filling and fitted within said pocket, and a removable cover therefor.

2. An intake manifold for combustion engines comprising a body portion of substantially triangular formation and defining a pocket, a filling of similar contour and composed of foraminated material, a cover for said pocket, and a normally closed valve arranged beneath the pocket and adapted to be automatically opened by suction of the engine, said valve controlling the communication between the manifold and the atmosphere for the purpose specified.

In testimony whereof I affix my signature.

ENOS ETTER BARTO.