

[54] **CARBURETION ATTACHMENT FOR
AUXILIARY AIR**

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[51] Int. Cl. **F02m 23/04**

[58] Field of Search **123/124 R, 141; 48/180 R**

[56] **References Cited**

UNITED STATES PATENTS

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Primary Examiner—Charles J. Myhre

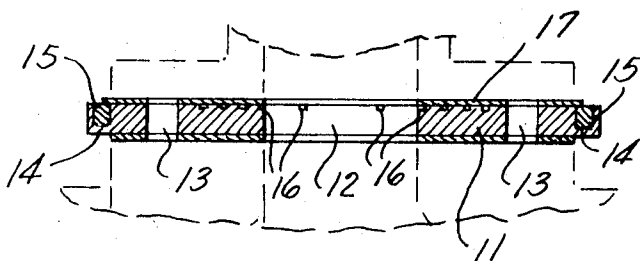
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[57] **ABSTRACT**

A carburetion attachment consisting of a relatively thin insert to be bolted between the carburetor and the intake manifold. The insert has the shape of a normal gasket separating the carburetor from the intake manifold. The insert has openings extending downwardly therethrough coinciding with the throats of the carburetor and the securing bolts therefor. One face of the insert has spiral grooves formed therein with their inner ends opening into the throat opening and their outer ends opening into the peripheral groove in the insert. A felt member is positioned in the peripheral groove to serve as a filter. A plate completely covers the spiral grooves and extends over half of the felt filter in the peripheral groove. The plate seals the spiral grooves to prevent the leakage of air therefrom.

5 Claims, 11 Drawing Figures



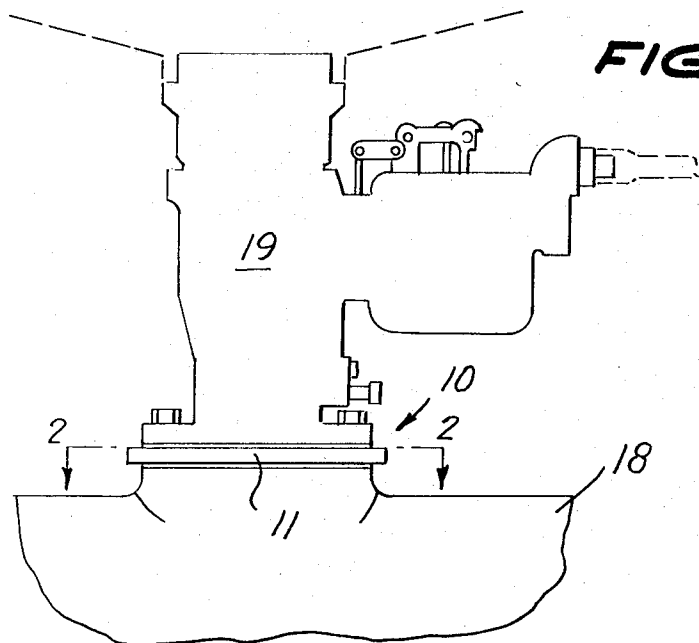


FIG. 1.

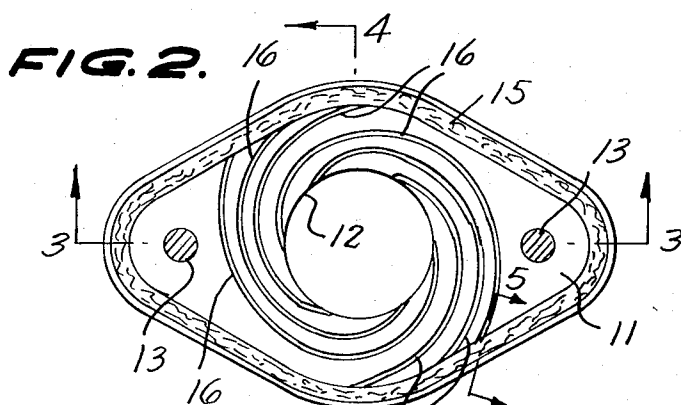


FIG. 2.

FIG. 5.

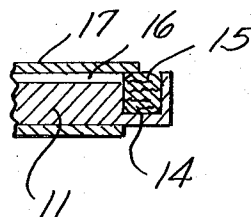


FIG. 4.

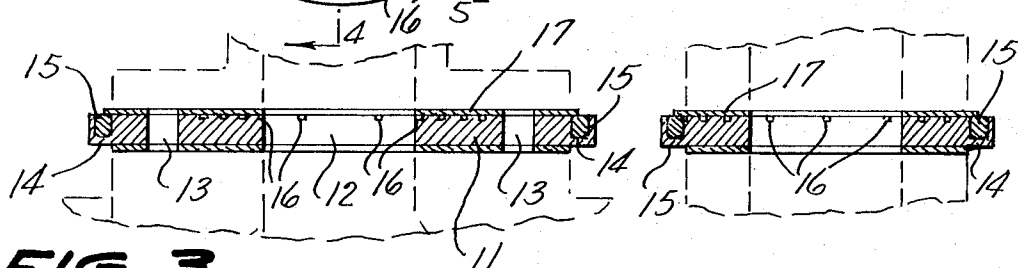
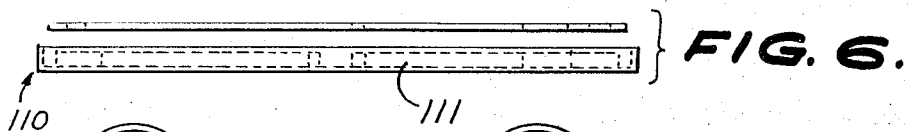
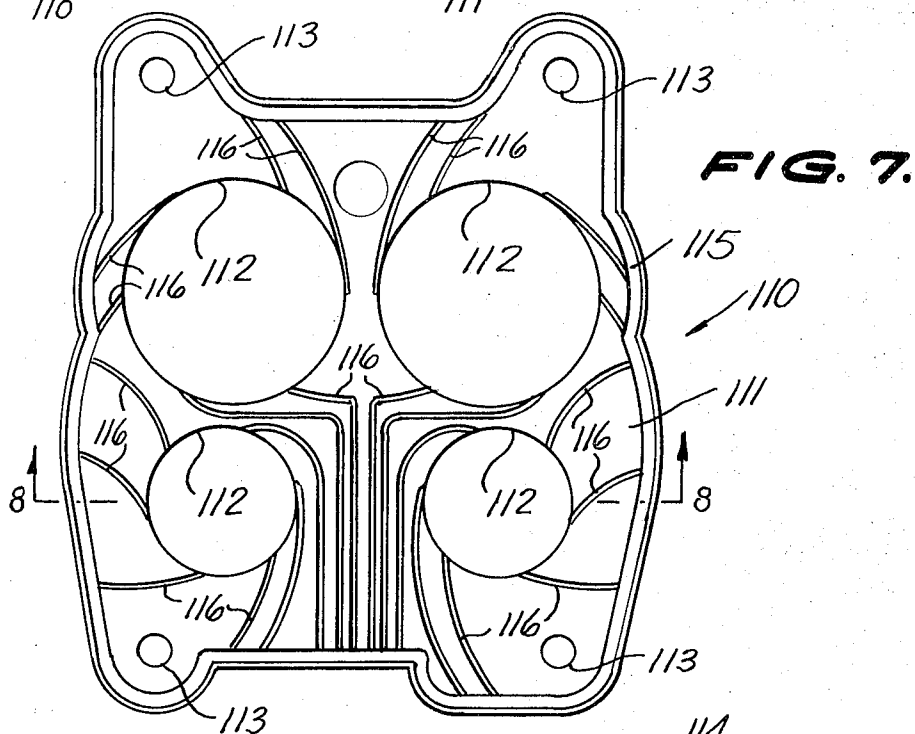
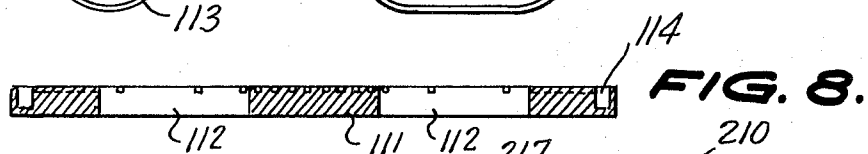
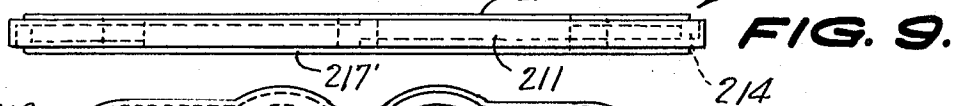
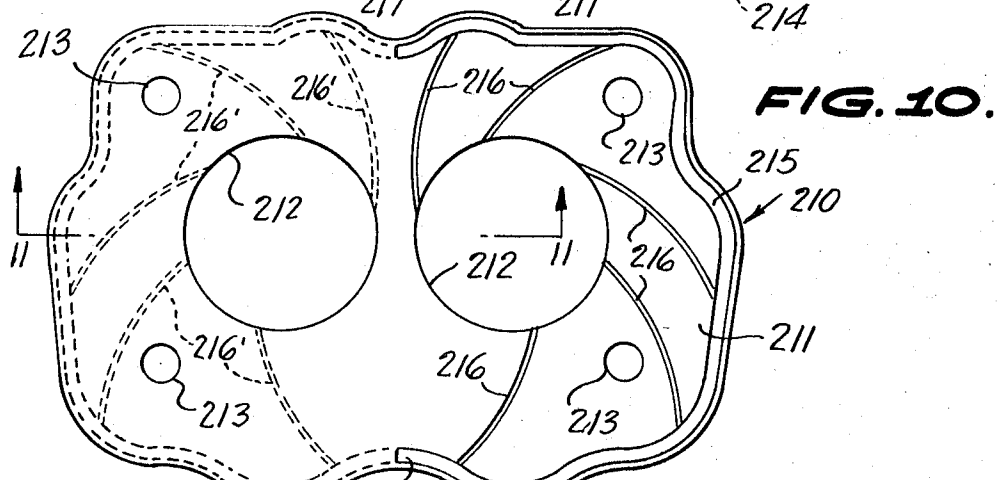


FIG. 3.



CARBURETION ATTACHMENT FOR AUXILIARY AIR

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to carburetion attachments for supplying additional air to the fuel charge.

SUMMARY OF THE INVENTION

A carburetion attachment which includes a flat insert having spiral grooves formed therein to feed air from a peripheral felt carrying groove to the throat of the carburetor.

The primary object of the invention is to increase the efficiency of the internal combustion engine by providing air inlets to the carburetor throat.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevation of the invention shown attached to a carburetor and intake manifold, partially broken away for convenience of illustration;

FIG. 2 is an enlarged transverse horizontal sectional view taken along the line 2—2 of FIG. 1, looking in the direction of the arrow;

FIG. 3 is a vertical sectional view taken along the line 3—3 of FIG. 2, looking in the direction of the arrows;

FIG. 4 is a vertical sectional view taken along the line 4—4 of FIG. 2, looking in the direction of the arrows;

FIG. 5 is an enlarged fragmentary vertical sectional view taken along the line 5—5 of FIG. 2, looking in the direction of the arrows;

FIG. 6 is a side elevation of a modified form of the invention;

FIG. 7 is a top plan view of the device illustrated in FIG. 6;

FIG. 8 is a vertical sectional view taken along the line 8—8 of FIG. 7, looking in the direction of the arrows;

FIG. 9 is a side elevation of another modified form of the invention;

FIG. 10 is a top plan view of the structure illustrated in FIG. 9; and

FIG. 11 is a fragmentary vertical sectional view taken along the line 11—11 of FIG. 10, looking in the direction of the arrows.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference 10 indicates generally a carburetion attachment constructed in accordance with the invention.

The attachment 10 includes a generally flat plate 11 having a vertical throat bore 12 extending downwardly therethrough. Bores 13 for attaching bolts extend vertically through opposite ends of the plate 11.

A relatively deep angular groove 14 opens downwardly into the upper face of the plate 11 adjacent the peripheral edge thereof. A felt ribbon filter 15 is positioned in the groove 14 as can be seen in FIGS. 3, 4,

and 5. A plurality of spiral grooves 16 are formed in the upper face of the plate 11 with their outer ends communicating with the groove 14 and their inner ends communicating with the throat bore 12, as is clearly seen in FIG. 2.

A cover plate 17 engages the upper surface of the plate 11 and seals the grooves 16 to prevent air leakage therefrom. The outer edge of the cover plate 17 terminates intermediate the opposite sides of the upper face of the ribbon felt filter 15 so that air reaching the outer ends of the grooves 16 must pass through the felt filter 15.

In the use and operation of the invention illustrated in FIGS. 1 to 5, the attachment 10 is bolted between the intake manifold 18 and carburetor 19 of a conventional internal combustion engine, so that additional air may be drawn into the throat bores 12 as engine vacuum applies force thereto. The spiral construction of the grooves 16 creates a cyclone or tornado-like action within the throat of the plate 11 and quick starting with savings in gas use and extra power will be attained.

Referring now to FIGS. 6 through 8, a modified form of the carburetion attachment is indicated generally at 110. The attachment 110 includes a relatively flat plate 111 having a plurality of throat bores 112 extending vertically therethrough and having adjacent its four corners attaching bolt hole bores 113.

An annular groove 114 is formed in the upper surface of the plate 111 adjacent the peripheral edge thereof and opening deeply into the plate 111. A felt ribbon filter 115 is positioned in the groove 114 for reasons to be assigned. A plurality of grooves 115 is formed in the upper face of the plate 11 with their outer ends communicating with the grooves 114 and their inner ends communicating with one of the throats 112. The grooves 116 open into the throat 112 in a spiral form to produce the cyclone action described in the operation of the embodiment illustrated in FIGS. 1 through 5.

The use and operation of the attachment 110 is identical to that of the attachment 10 except that the attachment 110 is intended for a one barrel carburetor and the attachment 110 is used with a four barrel carburetor.

Referring now to FIGS. 9 through 11, another modified carburetion attachment is indicated generally at 210. The carburetion attachment 210 includes a generally flat plate 211 having carburetor throat bores 212 extending vertically therethrough. Attaching bolt bores 213 open vertically through the plate 211 at the four corners thereof. An annular groove 214 opens downwardly from the upper face of the plate 211 adjacent the peripheral edge thereof for one-half of the distance around the plate 211. A groove 214' opens into the lower face of the plate 211 adjacent the peripheral edge thereof and extends from one end of the groove 214 to the opposite end of the groove 214, as can be seen in FIG. 10. A plurality of grooves 210 are formed in the upper face of the plate 211 communicating at their outer ends with the grooves 214 and at their inner ends with one of the throats 212. A plurality of grooves 216' are formed in the lower face of the plate 211 having their outer ends communicating with the groove 214' and their inner ends communicating with another one of the throats 212. Cover plates 217 and 217' engage the upper and lower faces of the plate 211 to seal the grooves 216, 216' respectively. A ribbon felt filter

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215 is positioned in the grooves 214, 214' to filter the air flowing through the grooves 216, 216' as it moves toward the throats 212.

The use and operation of the attachment 210 is identical to that of the attachments 10 and 110, being provided for a two barrel carburetor with two throats.

Having described the preferred embodiment of the invention, it should be understood that numerous structural modifications and adaptations may be resorted to without departing from the spirit of the invention.

What is claimed is:

1. A carburetion attachment for insert between a carburetor and an intake manifold for admitting additional air to the fuel-air mixture comprising a generally flat plate having a vertical throat bore extending there-through, attachment bolt bores extending through said plate at spaced apart points therein, an annular groove opening deeply into the upper face of said plate adjacent the peripheral edge thereof, a plurality of relatively shallow spiral grooves having their outer ends communicating with said annular groove and their

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inner ends communicating with said throat, a ribbon felt filter positioned in said annular groove, and means for sealing said spiral grooves to prevent escape of air therefrom, said last named sealing means extending to a point intermediate the opposite side edges of said annular groove to direct the flow of air in said spiral grooves through said felt filter.

2. A device as claimed in claim 1 wherein the means for sealing said spiral grooves comprises a relatively flat cover plate engaged to the upper surface of said attachment.

3. A device as claimed in claim 2 wherein a pair of throat opening bores extend through said plate.

4. A device as claimed in claim 1 wherein four throat opening bores extend through said plate for attachment to a four barrel carburetor.

5. A device as claimed in claim 4 wherein a portion of said spiral grooves is on the upper face of said plate and a portion of said spiral grooves is on the lower face of said plate.

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