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SELF-TIGHTENING AIRCLEANER ATTACHING DEVICE

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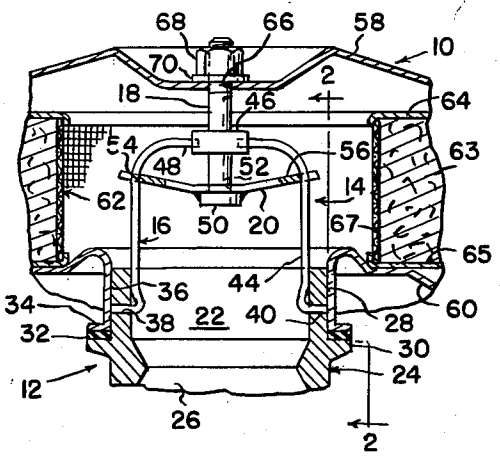


FIG.1.

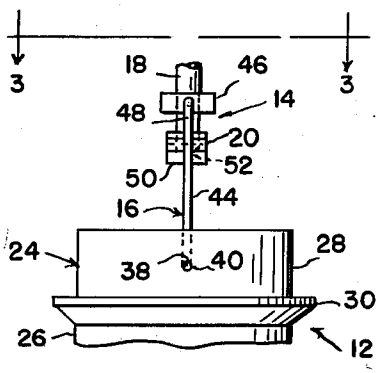


FIG.2.

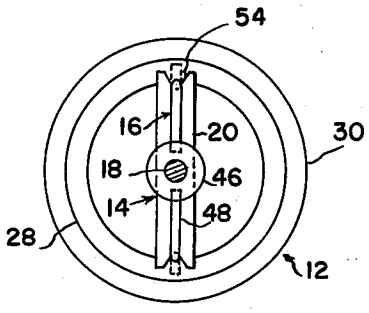


FIG.3.

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SELF-TIGHTENING AIRCLEANER ATTACHING DEVICE

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The invention relates to aircleaners and refers more specifically to apparatus for securing an aircleaner to a carburetor which apparatus is so constructed and is so installed on the carburetor as not to obstruct the air induction passage of the carburetor.

In the past aircleaners have been provided with a mounting ring adapted to be sleeved over an aircleaner mounting lip provided on a carburetor air horn and have been held in assembly with the carburetor by means of a bolt extending through the aircleaner centrally thereof and secured to an aircleaner hold-down bracket positioned over the air induction passage of the carburetor in obstructing relation thereto. This means of securing an aircleaner to a carburetor materially effects the operation of the engine with which the carburtor is associated in that a measurable engine power loss is effected by the interference of the aircleaner hold-down bracket with the free passage of air into the carburetor air induction passage.

It is therefore one of the objects of the present invention to provide apparatus for securing an aircleaner to a carburetor which does not obstruct the air induction passage of the carburetor.

Another object is to provide apparatus for securing an aircleaner to a carburetor including a U-shaped aircleaner hold-down bracket secured to the carburetor air horn, an aircleaner mounting stud extending through the bracket, supported in axially spaced relation to the carburetor air induction passage and means supported by the stud for biasing the ends of the bracket into engagement with the carburetor air horn with the aircleaner in assembly on the carburetor.

Another object is to provide apparatus as set forth above wherein the bracket includes a guide bushing for the aircleaner mounting stud and a pair of bail members secured to opposite points on the circumference of the bushing extending radially outwardly in opposite directions and then axially in the same direction away from said bushing, said bail members having an arcuate portion adjacent the bushing and ends remote from the bushing extending radially outwardly with respect thereto.

Another object is to provide apparatus as set forth above wherein the means for biasing the ends of the bracket into engagement with the carburetor comprises a wedge brace having a central opening therethrough through which the stud extends and notched ends inclined outwardly of the stud toward the bushing and engaging the bail members.

Another object is to provide apparatus for securing an aircleaner to a carburetor which is simple in construction, economical to manufacture and efficient in use.

The foregoing as well as other objects will become more apparent as this description proceeds, especially when considered in connection with the accompanying drawing illustrating a preferred embodiment of the invention, wherein:

FIGURE 1 is a partial section of an aircleaner mounted on a carburetor by aircleaner mounting apparatus constructed in accordance with the invention.

FIGURE 2 is a partial section of the aircleaner, carburetor and aircleaner mounting apparatus illustrated in FIGURE 1 taken on the line 2—2 of FIGURE 1.

FIGURE 3 is a top view of the apparatus illustrated in FIGURE 2 taken in the direction of arrows 3—3 in FIGURE 2.

With particular reference to the figures of the drawing, one embodiment of the present invention will now be disclosed.

As shown best in FIGURE 1, an aircleaner 10 is mounted on a carburetor 12 by aircleaner mounting apparatus 14. The aircleaner mounting apparatus 14 includes an aircleaner mounting bracket 16 secured to the carburetor 12 and the aircleaner mounting stud 18 supporting the wedge brace 20 which is operable to bias the bracket 16 so as to maintain the bracket in assembly with the carburetor 12. The aircleaner mounting apparatus 14 is so constructed and is so secured to the carburetor 12 as not to obstruct the free passage of air into the air induction passage 22 of the carburetor.

More specifically, the carburetor 12 includes an air horn 24 having venturi and aircleaner mounting lip portions 26 and 28, respectively. An annular flange 30 is also provided on the carburetor air horn 24 to support the sealing gasket 32 and the flange 34 of the aircleaner mounting ring 36, as shown. Additionally, the radially extending circumferentially oppositely located passages 38 are provided in the lip portion 28 of the air horn 24 for receiving the radially outwardly extending end portions 40 of the bail members 44 of the air cleaner hold-down bracket 16 with the apparatus 14 assembled on the carburetor 12, as best shown in FIGURE 1.

The apparatus 14 for securing the aircleaner 10 to the carburetor 12, as previously indicated, comprises the bracket 16, stud 18 and wedge brace 20.

The bracket 16 includes similar bail portions 44 which are shaped as shown best in FIGURE 1 and which may be constructed of spring wire or similar form sustaining material. The bail members 44 are held in a U-shaped configuration with the bushing 46 secured to the ends 48 thereof by any convenient means. Bushing 46 provides a slip fit for the threaded stud 18.

The ends 48 of the bail members 44 have a ninety degree arcuate bend forming transitional portions therein of relatively large radius. The wedge brace 20 acts against the arcuate transitional portion of the bail members 44 radially outwardly with respect to the carburetor air horn 24 on upward movement of stud 18 to maintain the ends 40 of the bail members 44 in the passages 38 with the apparatus 14 in assembly with the carburetor 12 as will become more evident subsequently.

The stud 18 has an enlarged head 50 which supports the wedge brace 20 with the body portion of the stud 18 extending through the opening 52 in the wedge brace 20. The wedge brace 20 comprises a relatively rigid member shaped as shown best in FIGURES 1 and 3 having notches 54 in the ends thereof for guiding the brace along the bail members 44 and a circular opening 52 therein through which the stud 18 extends. The ends 56 of the wedge brace 20 are inclined toward the bushing 46 radially outwardly thereof in assembly as shown best in FIGURE 1.

The aircleaner 10 comprises upper and lower exterior housing members 58 and 60 respectively. The lower exterior housing member 60 is provided with the aircleaner mounting ring 36 adapted to sleeve over the aircleaner mounting lip portion 28 of the carburetor air horn 22 in assembly, as shown best in FIGURE 1. The aircleaner 12 further includes the annular filter element 62 including the filter material 63 enclosed between the upper and lower annular plates 64 and 65, the annular screen 67 and a similar annular screen (not shown) at the outer periphery of the filter element 62.

In assembly the stud 18, with the wedge brace 20

thereon, is passed through the bushing 46. The ends 40 of the bail members 44 of the bracket 16 are inserted in the passages 38 of the carburetor air horn 24 by springing the bail members 44 radially inwardly and inserting the ends 40 axially into the carburetor air induction passage 22. The sealing gasket 32 is then positioned on the flange 30 of the carburetor 12 and the aircleaner 10 is sleeved over the lip 28 of the air horn 24 with the stud 18 extending through the opening 66 in the upper housing 58 of the aircleaner 10 and the nut 68 is threaded on the stud 18 over the washer 70.

In tightening the nut 68 on the stud 18 the wedge brace 20 is caused to engage the arcuate portion of the ends 48 of the bail members 44 of the bracket 16. On further tightening of the nut 68 the ends 40 of the bail portions 44 of the bracket 16 are biased radially outwardly of the carburetor air horn to secure the ends 40 in the passages 38.

Thus, in accordance with the invention, there is provided carburetor aircleaner mounting apparatus 14 which is simple in construction, easy to manufacture and efficient in use. Further, as will be evident from an inspection of the fingers and air induction passage 22 of carburetor 12 is not obstructed by the aircleaner mounting apparatus 14 and the apparatus 14 is secured in assembly with carburetor 12 by means of the wedge brace 20.

The drawings and the foregoing specification constitute a description of the improved aircleaner mounting apparatus in such full, clear, concise and exact terms as to enable any person skilled in the art to practice the invention, the scope of which is indicated by the appended claims.

What I claim as my invention is:

1. A carburetor air horn defining air induction passage with an open end having opposite and aligned transverse passage therein, an aircleaner mounted on said carburetor air horn over said air induction passage and aircleaner mounting apparatus positioned in non-obstructing relation to said air induction passage for securing said aircleaner to said carburetor air horn comprising a form substaining, resilient hold-down bracket including an annular bushing, a pair of resilient bail portions each rigidly secured to the annular bushing at one end, having first portions extending from the annular bushing in opposite directions, arcuate transitional portions and portions extending at right angles to said first portions in the same direction and terminating in end portions extending in opposite directions parallel to said first portions and offset therefrom, the terminal portions of said bails extending within the aligned passages in the air induction passage with the bushing supported above the air induction passage, and aircleaner mounting stud having headed and threaded ends, the threaded end of which extends through the bushing and the aircleaner outwardly of the bracket, a nut threadedly engaged with said stud and operable between the stud and aircleaner for urging the aircleaner toward the air horn and a wedge comprising a substantially flat member extending transversely of said stud having an opening therethrough through which the stud extends and having opposite ends which are engageable with the transitional portions of the bail portions of the bracket in response to tightening of the nut on the stud to bias the terminal portions of said bails into the aligned passages.

2. Structure as set forth in claim 1 wherein the end portions of the wedge are inclined toward the transitional portions of the bracket bail portions with respect to the longitudinal axis of the stud.

3. Structure as set forth in claim 1 wherein the ends of the transversely extending member are provided with notches in which the bracket bail portions are positioned.

4. Apparatus for securing an aircleaner to a carburetor air horn over an air induction passage therein comprising a form sustaining, resilient generally U-shaped bracket having transitional portion and an opening therethrough centrally thereof, a stud having a headed and non-headed end with the non-headed end extending through the opening in the bracket in a direction opposite the ends of the bracket and wedge means carried by said headed end of said stud having portions extending outwardly of the stud and engageable with the transitional portions of the bracket on movement of the stud toward the non-headed end thereof for biasing the ends of the bracket in opposite directions outwardly of the bracket.

5. A carburetor air horn having an air induction passage therein, an aircleaner mounted on said carburetor air horn over said air induction passage and aircleaner mounting apparatus positioned in non-obstructing relation to said air induction passage for securing said aircleaner over said air induction passage including a U-shaped aircleaner hold-down bracket having transitional portions and ends extending into the air induction passage and engaged with the carburetor air horn within the air induction passage, an aircleaner mounted stud extending outwardly of said bracket through said bracket and aircleaner, means engaged with said stud and aircleaner for moving the stud outwardly of the bracket and securing the aircleaner to the air horn and wedge means carried by said stud and having portions extending transversely of the stud and engageable with the transitional portion of said bracket for biasing the bracket into engagement with the carburetor air horn within the air induction passage on movement of the stud outwardly of the bracket.

6. Aircleaner mounting apparatus for securing an aircleaner to a carburetor air horn over an air induction passage therein comprising a form sustaining, resilient hold-down bracket including an annular bushing, a pair of resilient bail portions each rigidly secured to the annular bushing at one end, having first portions extending from the annular bushing in opposite directions, arcuate transitional portions and portions extending at right angles to said first portions in the same direction and terminating in end portions extending in opposite directions parallel to said first portions and offset therefrom, an aircleaner mounting stud having headed and threaded ends, the threaded end of which extends through the bushing and the aircleaner outwardly of the bracket, a nut threadedly engaged with said stud and a wedge comprising a substantially flat member extending transversely of said stud having an opening therethrough through which the stud extends and having opposite ends which are engageable with the transitional portions of the bail portions of the bracket in response to movement of the stud outwardly of the bracket on tightening of the nut on the stud.

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HARRY B. THORNTON, *Primary Examiner.*