April 6, 1965 W. H. RISSE 3,176,367

AIR CLEANER HOLD-DOWN MEMBER

Filed Dec. 15, 1961

Fig. 1.

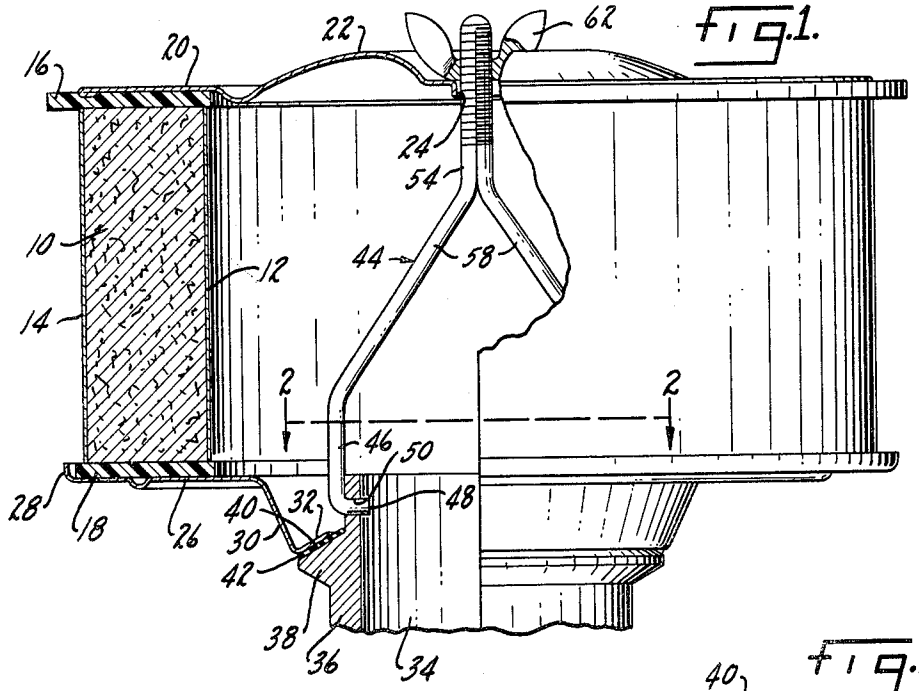
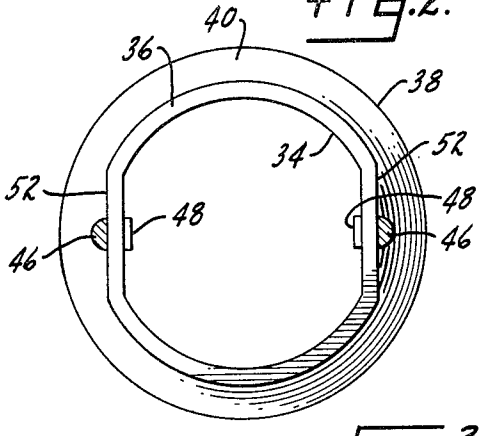


Fig. 2.



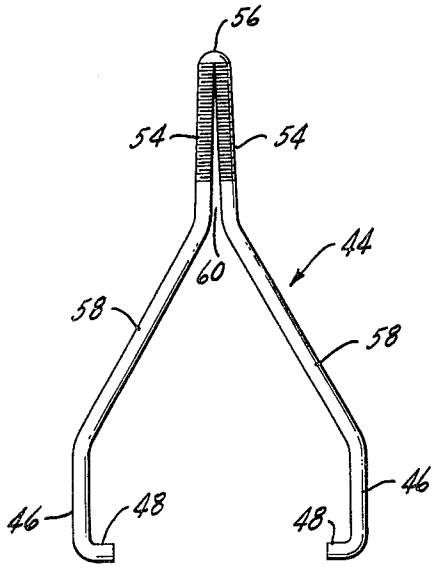
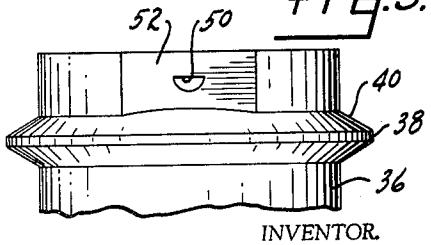


Fig. 4.

Fig. 3.



INVENTOR.

Willis H. Risse,

BY Parker & Carter

Attorneys.

United States Patent Office 3,176,367 Patented Apr. 6, 1965

3,176,367

AIR CLEANER HOLD-DOWN MEMBER

Willis H. Risse, Chicago, Ill., assignor to Novo Industrial Corporation, New York, N.Y., a corporation of New York

Filed Dec. 15, 1961, Ser. No. 159,568
3 Claims. (Cl. 24—260)

This invention relates to an improved hold-down arrangement for securing air cleaners to carburetors or the like.

A primary purpose of the invention is a simply formed hold-down member which is adapted to securely mount an air cleaner to the air intake of a carburetor or the like.

Another purpose is a hold-down member of the type described which moves more tightly into contact with the carburetor air inlet throat as the securing nut is turned down.

Other purposes will appear in the ensuing specification, drawings, and claims.

The invention is illustrated diagrammatically in the following drawings wherein:

FIGURE 1 is a side elevation, in part section, showing the air cleaner securing arrangement of this invention,

FIGURE 2 is a section along plane 2—2 of FIGURE 1,

FIGURE 3 is a side view showing the carburetor air intake, and

FIGURE 4 is a plan view of the hold-down member disclosed herein.

The air cleaner may include an annular filter element 10 enclosed by inner and outer cylindrical walls 12 and 14, respectively. The upper and lower ends of the annular filter 10 may be closed by suitable annular wall members 16 and 18 which may be plastic, metal or otherwise. The top of the air cleaner may include a generally circular plate 20 which has a central dome 22 and an aperture 24 adjacent the center of the domed portion 22. The bottom of the air cleaner may be formed by an annular plate 26 having an up-turned peripheral flange 28 to hold the filter 10 in position. The lower plate 26 may include a central down-turned annular portion 30 having a slightly up-turned generally central peripheral flange 32 which seats upon the carburetor air inlet as described hereinafter.

The air inlet passage 34 of the carburetor may be defined by a generally upstanding throat 36 having an annular flange 38 adjacent its upper end. The flange 38 may have an annular upper slanted surface 40 upon which is seated an annular sealing member 42. The up-turned flange 32 on the plate 26 seats upon the sealing member 42 and the flange 40 when the air cleaner is secured to the carburetor.

The details of both the air cleaner and carburetor structure hereinbefore described may be conventional and may vary without departing from the scope of the invention. What is important in this invention is the particular arrangement used to secure the air cleaner to the carburetor.

A securing member 44 generally in the shape of a wishbone may have widely divergent ends 46, each of which terminates in inwardly directed generally diametrically opposed securing portions 48 which are received in slots 50 formed adjacent the upper end of the carburetor throat 36. As shown in FIGURES 2 and 3, the carburetor throat 36 is generally round and has a pair of flattened portions 52 on opposite sides in which the slots 50 are positioned. The securing member 44 may be generally half round or semi-circular in cross section and accordingly the slots 50 have the same cross section.

The securing member 44 is generally symmetrical and the ends 46, which may be generally parallel, are connected to slightly divergent portions 54, joined together at one end, or adjacent the center of the rod-like member 44, as at 56. The portions 54 and the ends 46 may be connected together by gradually diverging or angular portions 58.

As clearly shown in FIGURE 4, in the free position, the portions 54, which are externally threaded, are slightly spread apart at their unjoined ends. The amount of divergence gradually increases from the joined ends 56 toward the ends 46. As shown in FIGURE 1, in the tightened or mounting position, the portions 54 have their inner surfaces 60 in generally complete contact. A wing nut 62 or other suitable securing member, which may be internally threaded, is positioned on the portions 54 which extend through the opening 24 in the top of the air cleaner. As the wing nut 62 is turned down, the slightly divergent portions 54 will be pushed together and the carburetor securing portions 48 will be driven tightly into the slots 50.

The use, operation and function of the invention are as follows:

The improved arrangement shown herein for attaching an air cleaner to a carburetor or the like includes a rod-like member or wire formed into two symmetrical halves, preferably half round in cross section. The central area of the wishbone-shaped member 44 is folded back to form two slightly divergent portions 54 which are externally threaded. In attaching the air cleaner to a carburetor, the portions 54 extend through an opening in the top of the air cleaner housing. A wing nut or other suitable securing member is then threaded on to the portions 54 and screwed down. As the wing nut is turned down, the slightly divergent portions 54 will be moved into contact with each other and the two symmetrical halves will be moved toward each other. The ends of the securing member are suitably positioned in grooves or slots in the upper portion of the carburetor air intake. As the two halves move toward each other the securing ends will tightly grip the carburetor throat.

Of particular importance is the fact that the halves of the securing member are sprung apart so that when the central threaded portions are moved into contact the securing ends will be firmly biased or urged toward each other. The distance between securing portions 48 in the free state should be less than the diameter of the carburetor so that the securing member may be snapped into position.

Preferably, the entire rod-like member or wire 44 is half round in cross section, so that when the portions 54 are held together they form a cylindrical threaded rod. Other cross sections, for example square, may also be satisfactory. For convenience it is desired to make the entire member 44 with the same cross section.

Although we have shown the element 62 as a wing nut and the portions 54 as threaded, the portions 54 could be externally smooth and the element 62 arranged to interlock therewith after it brought the two halves together. In addition the wing nut could be arranged to drive a sleeve down upon the diverging halves.

Whereas the preferred form of the invention has been shown and described herein, it should be realized that there are many modifications, substitutions and alterations thereto within the scope of the following claims.

I claim:

1. A hold-down arrangement for securing an air cleaner to a carburetor or the like including a rod-like member formed into two generally symmetrical halves, integrally joined together at one end, those portions of each half adjacent the joined ends being half round in cross section and exteriorly threaded, the inner surface of

said threaded portions being generally flat, said threaded portions diverging slightly away from the joined ends, but forming a generally cylindrical exteriorly threaded member when said flat inner surfaces are held together, the opposite ends of said halves being widely spaced and having generally diametrically opposed inwardly directed securing portions, said threaded portions being connected to said ends by gradually diverging portions merging into sections which are generally parallel to said threaded portions when the flat inner surfaces of said threaded portions are held together, and an interiorly threaded nut-like member positioned on said threaded portions and effective to move said slightly divergent threaded portions together as it moves from the joined ends toward said widely spaced ends.

2. The structure of claim 1 further characterized in that said nut-like member is a wing nut.

3. The structure of claim 1 further characterized in that said securing portions are generally half round in cross section and are adapted to be received in generally half round slots in the upper portion of a carburetor throat or the like.

References Cited by the Examiner

UNITED STATES PATENTS

712,239	10/02	Barrett	24—124
2,836,257	5/58	Muller	55—505

HARRY B. THORNTON, *Primary Examiner.*