April 7, 1942. J. W. WILKINSON 2,279,190

OIL FILTER BRACKET

Filed May 20, 1940

Fig. 1.

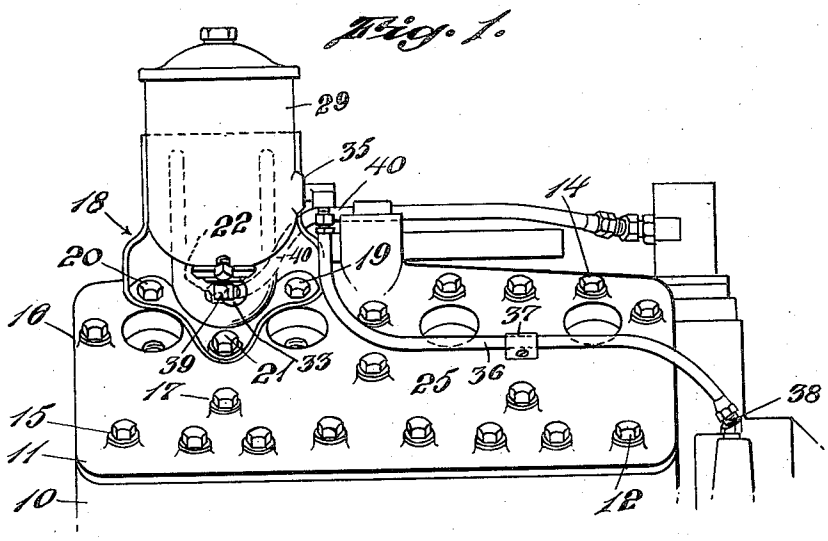


Fig. 2.

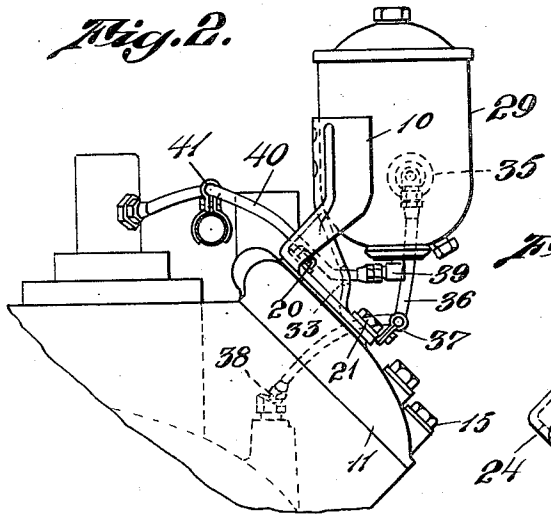


Fig. 3.

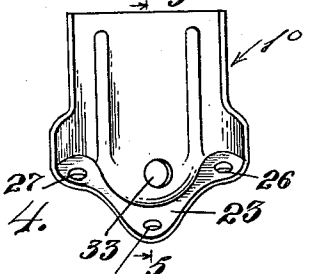


Fig. 4.

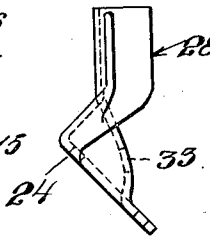


Fig. 5.

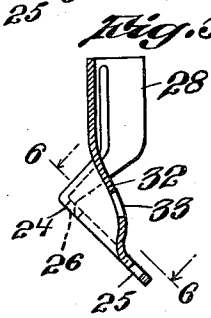


Fig. 6.

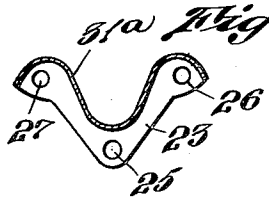


Fig. 7.



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UNITED STATES PATENT OFFICE

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OIL FILTER BRACKET

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Application May 20, 1940, Serial No. 336,165

4 Claims. (Cl. 248—300)

This invention relates to a bracket for the mounting of an oil filter upon an internal combustion engine and has for one of its objects to provide a bracket which may be mounted upon the head of a cylinder block while permitting the usual tightening of the studs which secure the head in place.

Another object of the invention is to provide a filter bracket which will have a three point triangularly arranged bearing upon the engine block for firm support and which may be assembled with the filter casing prior to its being mounted in position on the engine block.

Another object of the invention is to provide a bracket in a single sheet piece of stock which may be formulated by deflection of the stock to provide the desired shaping.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig 1 is an elevation of the filter and bracket shown as mounted in position upon an engine block;

Fig. 2 is an end view thereof;

Fig. 3 is an elevation of the bracket alone with the filter omitted;

Fig. 4 is an end view thereof;

Fig. 5 is a central sectional view on the line 5—5 of Fig. 3;

Fig. 6 is a sectional view on line 6—6 of Fig. 5; and

Fig. 7 is a sectional view through the bracket and casing mounted thereon showing the position of the spot welds for holding the same in position.

The available space about an engine beneath the hood of an automobile in some cases is rather limited and the opportunity for mounting a filter upon the dash or at some other location is not readily afforded. This is particularly true of the Ford V-8 type engine now in use, and in order that a suitable arrangement may be provided for mounting a filter under such conditions, I have provided a bracket which will fit upon the head of the engine.

The removable head of an engine if not properly tightened down by the studs which fasten it in position may cause a warping of the head and accordingly in good engine assembly the studs for fastening down the head are tightened up in a certain pre-arranged and definite order. Usually no two adjacent studs are secured down successively one after the other. Instruction sheets for the mechanic usually specify the most approved order for tightening down the studs of an engine block to secure the head in place and the skilled mechanic knows of this order and makes himself familiar with it in his working upon the automobile where such knowledge will be of assistance. In the formation of this bracket I have so arranged the bracket that although it spans and covers a stud which is not utilized for the support of the bracket it will leave this stud free to be tightened in the usual order which is specified by the maker so that even though the stud is beneath the bracket all studs may be tightened down in their required order for positioning the head in place and at the same time mounting the bracket in position, and the following is a detailed description of the present embodiment of my invention and showing the preferred form by which these advantageous results may be accomplished.

With reference to the drawing, 10 designates an engine block provided with a removable head 11 which is secured in place by a plurality of studs 12 arranged in rows, there being an upper rows of studs 14, a lower row of studs 15 and intermediate studs arranged somewhat in rows which are designated generally 16 and 17.

The studs which are utilized for the mounting of the filter bracket which is designated generally 18 are designated 19 and 20 in the row 14 and 21 in the row 16, while there is an intermediate stud between the studs 19 and 20 in the row 14 designated 22 and shown in dotted line position in Fig. 1.

The bracket 18 is of a curved shape which is somewhat irregular in contour particularly having such irregular appearance if viewed by itself. This bracket is formed of sheet stock and is bent up in a press or hammer operation into the form required. This form comprises an area of sheet stock 23 located in substantially a single plane and providing a base with a bottom bearing surface 24 (see Fig. 4) which will rest against the surface 25 on the top of the head which is also in substantially a single plane. The area of contact of this base and surface 24 with the top of the head is generally V-shaped such as can well be seen in Fig. 6, and there is provided in this V-shaped base an opening 25 at the vertex of the V to receive the stud 21 and openings 26 and 27 on either arm of the V for the reception respectively of the studs 19 and 20.

Extending upwardly from the base 23 and at an angle thereto there is sheet stock portion designated generally 28 which for a substantial

portion of its length is arc-shaped (see for instance Fig. 7). This arc is substantially the arc of the filter casing **29** which is to be received and the filter casing is connected to this arc shaped portion of the bracket by spot welding as at **30**. Suitable ribs **31** are provided in this portion to stiffen and strengthen the same against bending.

This arc-shaped upper portion of the bracket **28** is connected to the base **23** by curvilinear portions which join the base along the inner edge of the V thereof as shown in section at **31***a* in Fig. 6 and which bulges toward the concave portion of the upper arc of the bracket as at **32** as shown better in Fig. 5. This bulge portion is provided with an opening **33** through which the outlet conduit of the casing extends.

The bracket is mounted in position by the removal of the studs **19**, **20** and **21** in the head leaving in place the stud **22** which prevents lifting of the head to this location. The studs are then passed through the openings **25**, **26** and **27** into their sockets and the bracket firmly bound in place while at the same time binding the head on the cylinder block. The inlet opening **35** of the filter casing **29** is connected to a suitable source of lubricant by flexible conduit **36** extending through bracket **37** and connected to the crankcase through suitable fittings **38** while the outlet for the lubricant of the casing is connected through elbow **39**, then by conduit **40** extending through opening **33** to a portion of the lubricating system from which it is then returned to the crankcase. A suitable fastening **41** is provided for holding the conduit **40** in position.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible.

I claim:

1. A bracket comprising a base member having three portions disposed in triangular relation and in substantially a single plane, each of said portions being provided with a hole to receive one of the threaded studs normally used for holding the removable head of an engine on the engine block so as to secure said base to the engine head, a second member integral with and angularly related to said base to provide an arm which extends upwardly therefrom to occupy a substantially vertical position when said base is secured to an engine head, said arm being provided with a concave upper portion of considerable length arranged to receive and be affixed to the outer cylindrical surface of a filter casing for supporting it in an upright position, and a bulging portion formed in the angle between said base member and said second member and extending between said members toward the concave portion of said arm.

2. A bracket comprising a base member having three portions disposed in triangular relation and in substantially a single plane, each of said portions being provided with a hole to receive one of the threaded studs normally used for holding the removable head of an engine on the engine block so as to secure said base to the engine head, and a second member integral with and angularly related to said base to provide an arm which extends therefrom to occupy a substantially vertical position when said base is secured to an engine head, said arm being provided with a concave upper portion arranged to receive and extend for a considerable distance along the outer cylindrical surface of a filter casing when the casing is affixed thereto for supporting it in an upright position, and a bulging portion formed in the angle between said base member and said second member and extending between said members, said bulging portion projecting from the outer side of each member toward the concave portion of said upper part of the second member and being hollow on its inner side and arched to span a threaded stud disposed between two of said triangularly related portions of the base.

3. A bracket formed of a single piece of sheet stock comprising a base member having three portions disposed in triangular relation and in substantially a single plane, each of said portions being provided with a hole to receive one of the threaded studs normally used for holding the removable head of an engine on the engine block so as to secure said base to the engine head, and a second member integral with and angularly related to said base to provide an arm which extends therefrom to occupy a substantially vertical position when said base is secured to an engine head, said arm being provided with a concave upper portion arranged to receive and extend for a considerable distance along the outer cylindrical surface of a filter casing when the casing is affixed thereto to support it in an upright position, said base member being arched to span the space between two of its triangularly related portions and leave substantial clearance about the head of one of the threaded retaining studs for securing said engine head other than those which secure the bracket thereto and located behind said arched portion between the two triangularly related portions of the base that are spanned by said arched portion.

4. A bracket formed of a single piece of sheet stock comprising a base member having three portions disposed in triangular relation to provide a bottom bearing surface of generally V-shaped formation and in substantially a single plane, each of said portions being provided with a hole to receive one of the threaded studs normally used for holding the removable head of an internal combustion engine to the engine block so as to secure said base member to the engine head, and a second member integral with and angularly related to said base to provide an arm which extends therefrom to occupy a substantially vertical position when said base member is secured to an engine head, said arm being provided with a concave upper portion arranged to receive and extend for a considerable distance along the outer cylindrical surface of a filter casing or the like when the casing is welded to said concaved portion to secure it in an upright position, said second member being connected to the base by curvilinear portions substantially perpendicular to the base and which join the base along the inner edge of the V-bottom thereof and also by a hollow longitudinal centrally disposed bulging portion projecting from the outer side of said base and said second member toward the concave portion of the upper portion of said second member, said bulging portion having an opening therethrough.

JAMES W. WILKINSON.