

June 23, 1942.

J. M. LEAKE

2,287,182

ROCKER ARM SHAFT BRACKET

Filed July 29, 1938

2 Sheets-Sheet 1

Fig. 1.

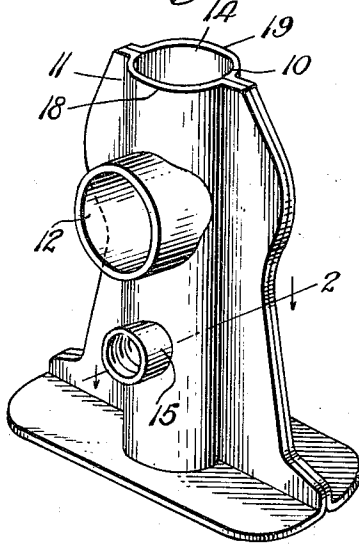


Fig. 2.

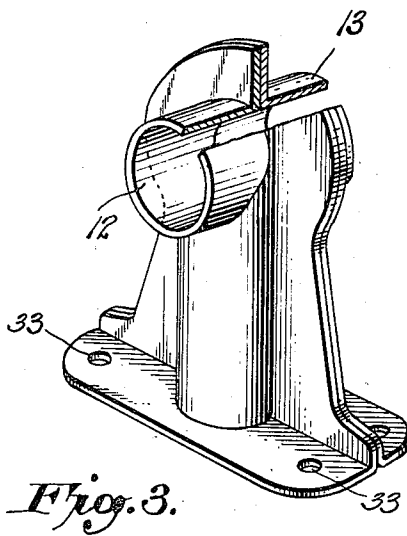
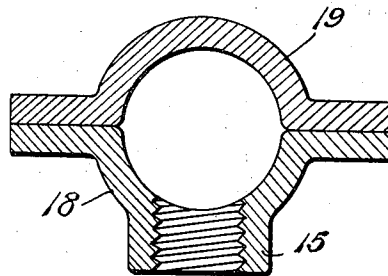


Fig. 3.

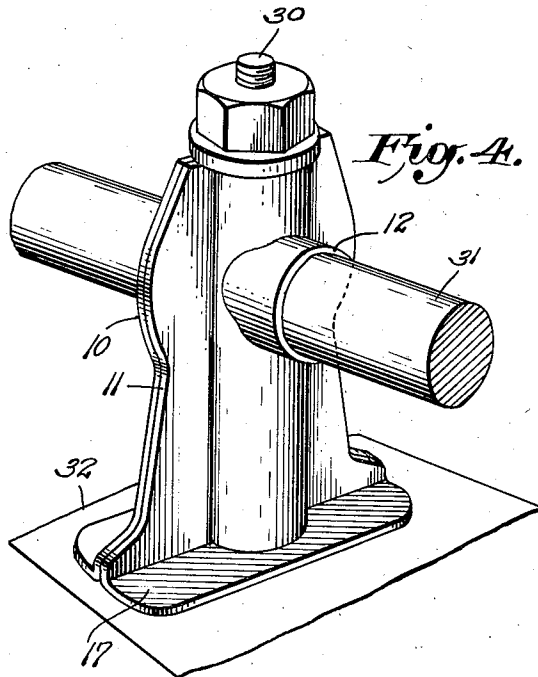


Fig. 4.

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Fig. 5.

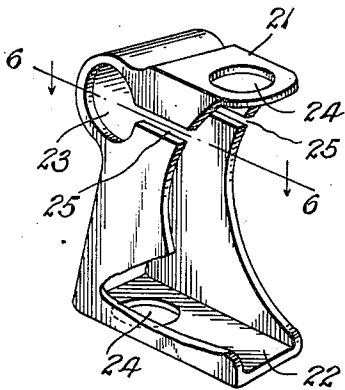


Fig. 6.

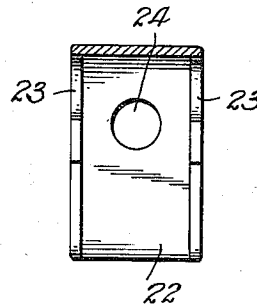


Fig. 7.

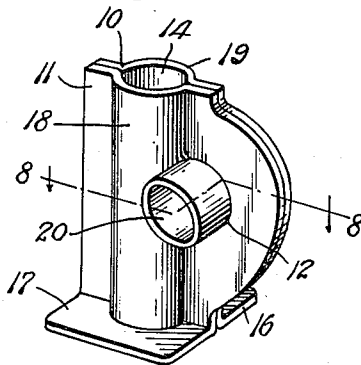


Fig. 8.

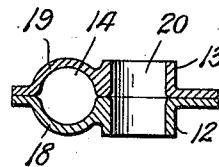
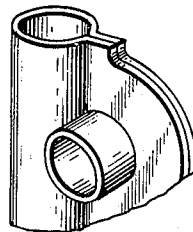


Fig. 9.



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UNITED STATES PATENT OFFICE

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ROCKER ARM SHAFT BRACKET

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Toledo Stamping and Manufacturing Com-
pany, Toledo, Ohio, a corporation of Ohio

Application July 29, 1938, Serial No. 221,959

4 Claims. (Cl. 248—14)

My invention relates to rocker arm shaft brackets for internal combustion engines.

Heretofore rocker arm shaft brackets have been made from forgings or castings. These forgings or castings require much drilling and machining. A long hole has to be drilled from the top to the bottom of the bracket for a cap screw or other fastening means. A hole is drilled horizontally to hold the rocker arm shaft. In some types an oil passageway is also drilled in the rocker arm bracket. This method of making rocker arm brackets is very expensive because of the great amount of drilling necessary. In addition several faces of the bracket must be machined and much material is wasted in the drilling and machining processes. My improved rocker arm shaft brackets are made of stampings which practically eliminate drilling and machining. My improved rocker arm bracket can be made lighter and still be stronger than the present type of rocker arm. These factors show that my improved type of rocker arm shaft bracket requires less drilling and machining, that the rocker arm shaft bracket can be made lighter and that the cost of producing my improved type of rocker arm shaft bracket is much less than the cost of manufacturing the present types.

One object of my invention is to provide a rocker arm shaft bracket that eliminates the drilling of long or deep holes.

Another object of my invention is to provide a rocker arm shaft bracket that requires a minimum amount of machining.

Another object of my invention is to provide a rocker arm shaft bracket that readily adapts itself to quantity production.

Another object of my invention is to provide an improved type of rocker arm shaft bracket that is simple, strong, durable and inexpensive.

With these and other objects in view, my invention consists in the construction, combination and arrangement of the various parts of my improved device as described in the specification, claimed in the claims, and illustrated in the accompanying drawings.

In the drawings:

Fig. 1 is a perspective view showing my improved rocker arm shaft bracket.

Fig. 2 is a sectional view taken along line 2—2 of Fig. 1.

Fig. 3 is a partial view with a cut away section of my improved rocker arm shaft bracket.

Fig. 4 is a pictorial view of my improved rocker arm shaft bracket in combination with a rocker

arm shaft, a fastening means and an internal combustion engine block.

Fig. 5 is a pictorial view of another form of my improved rocker arm shaft bracket.

Fig. 6 is a section view taken along lines 6—6 of Fig. 5.

Fig. 7 is another perspective view of my improved rocker arm shaft bracket.

Fig. 8 is a sectional view taken along line 8—8 of Fig. 6.

Fig. 9 is a partial view of my improved rocker arm shaft bracket similar to the one shown in Fig. 7.

Referring to the drawings I have shown in Fig. 1 one form of my invention. My improved type of rocker arm shaft bracket is a stamped metal rocker arm shaft bracket. The one shown in Fig. 1 is made by fastening together the substantially symmetrical stampings 10 and 11. These stampings may be fastened together by spotwelding, hydrogen welding or any other suitable method. A hub portion 12 is struck outwardly in the stamping 11 and a similar hub is struck outwardly in the stamping 10. These two hubs are shown more clearly in Fig. 3. These hubs 12 and 13 form a socket through which the rocker arm shaft is placed when the bracket is installed in an internal combustion engine. Coinciding semicircular indentations 18 and 19 in the stampings 10 and 11 form a socket 14. This socket 14 provides a means for fastening the rocker arm shaft bracket. When the bracket is installed in an internal combustion engine a cap screw or stud 30 is placed in the socket 14. This cap screw or stud also goes through a hole in the rocker arm shaft thus locking the shaft in position as well as holding the rocker arm shaft bracket in position as shown in Fig. 4. Fig. 4 also shows the rocker arm shaft bracket fastened to an engine block indicated as 32. A second hub 15 may be struck from the stamping 11 to provide for the connection of an oil line for the type in which oil is fed through the cap screw to a hollow shaft and then to the rocker arm shaft bracket. The flanges 16 and 17 are struck at right angles to the socket 14 thus forming the base or foot of the rocker arm bracket. These flanges 16 and 17 can be struck to form a sharp corner when it is necessary to prevent the escape of oil at the base of the bracket.

Fig. 3 shows a rocker arm bracket that is very similar to the one shown in Fig. 1. This type is fastened by putting a cap screw or stud through holes 33 in the foot or base instead of

putting it through the socket 14 as is done in the type shown in Fig. 1 or Fig. 4.

Fig. 7 shows a rocker arm bracket that is practically the same as the one shown in Fig. 1. The only variation being that the cap screw socket 14 and the rocker arm shaft socket 20 do not intersect as they do in Fig. 1. Fig. 8 is a sectional view showing the relation of the cap screw socket 14 to the rocker shaft socket 20.

Fig. 9 shows a rocker arm bracket that varies from the one shown in Fig. 7 in that it is composed of a single piece folded back upon itself instead of being formed by two symmetrical pieces fastened together.

Fig. 5 shows another form of my improved rocker arm shaft bracket. This form is made of a hollow stamping of a substantially U-shape with closed ends, 21 and 22. Corresponding holes 23 in either side of the U-shaped portion form a socket shaft rocker or passageway. Corresponding holes 24 in the closed ends 21 and 22 of the bracket form a cap screw socket or passageway. The sides of the U-shaped portion of the bracket are provided with slots 25. These slots 25 extend from the outer edge of the bracket to the holes 23. When this rocker arm bracket is installed in an internal combustion engine the rocker arm shaft is first placed in the rocker arm shaft socket 23. Then the cap screw or stud is placed in the holes or socket 24 and is tightened. The slots 25 permit the bracket to clamp the rocker shaft in position when the cap screw is tightened.

It will readily be seen that my improved rocker arm shaft bracket is a metal stamping. The bracket may be composed of one or more stampings. The stamped bracket is provided with two sockets substantially at right angles to each other. As previously stated when the rocker arm shaft bracket is installed in an engine, the rocker shaft is placed in the horizontal socket and the cap screw or stud for fastening the bracket to the engine is placed in the vertical socket as shown in Fig. 4. The bracket may be so constructed that the rocker shaft is or is not locked in position by the cap screw in the vertical socket.

While I have described several embodiments of my invention, I do not wish to be limited to the particular forms shown and described as it is apparent that many modifications therein may be

made without departing from the scope of my invention set forth in the appended claims.

Having thus described my invention what I claim is:

1. A stamped rocker arm shaft bracket having substantially parallel superimposed layers, a hub comprising annular flanges struck in opposite directions from said layers, a foot or base comprising flanges struck in opposite directions from said layers and a substantially vertical hole formed by opposite grooves in the adjacent surfaces of said layers.

2. Stamped rocker arm shaft bracket having substantially parallel superimposed layers, a hub comprising annular flanges struck in opposite directions from said layers, a foot or base comprising flanges struck in opposite directions from said layers, a substantially vertical hole formed by opposite grooves in the adjacent surfaces of said layers and a hole formed by an annular flange struck outwardly from one of said layers extending to said vertical hole.

3. A rocker arm shaft bracket constructed from a plurality of symmetrical pressed superimposed sheet metal pieces permanently fastened together, a hub adapted to hold a rocker arm shaft provided by annular flanges struck in opposite directions from said superimposed sheet metal pieces, a base provided by a portion of said symmetrical sheet metal pieces struck in opposite directions and a vertical opening between said superimposed sheet metal pieces for inserting a means to fasten said stamped rocker arm shaft bracket to the engine block of an internal combustion engine.

4. A rocker arm shaft bracket constructed from two substantially parallel superimposed layers of stamped metal pieces permanently fastened together, a hub for holding a rocker arm shaft provided by annular flanges struck in opposite directions from said parallel superimposed layers of stamped metal pieces, a vertical and substantially annular hole adapted to receive a stud or other fastening means provided by opposite stamped grooves in said parallel superimposed layers said annular hole extending the entire length of said rocker arm shaft bracket, and a substantially flat base formed by striking the lower ends of said superimposed layers in opposite directions.

JAMES M. LEAKE.