UNITARY WRENCH AND CONTAINER

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UNITARY WRENCH AND CONTAINER OIL FILTER REMOVER


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4 Claims. (Cl. 91—53)

This invention relates to an improved service tool of the manual-wrench type for an internal combustion engine.

It is shown herein as embodied in what is termed by the automobile service station trade an oil filter remover tool.

The internal combustion engines provided for automobile use are commonly equipped with a can shaped oil filter. This filter is generally supported from an overhead arm and a bolt carried by such arm extends downwardly axially through the filter can. A nut is threaded onto one end of the bolt holding the filter upon the arm. To remove the filter a socket wrench is employed. This wrench is inserted below the can and engaged with the head or the nut of the bolt, whichever the case may be, which head is commonly received within a recess formed in the bottom of the can. This is the usual process of loosening of the bolt the filter is removed. In the removal of the filter it is not uncommon for the oil which is contained in the system to run down over the arm of the mechanic. Such occurrence is not only unpleasant but the oil may be hot.

This improved oil filter remover wrench is capable of being employed to remove the oil filter from its support and to maintain the filter in an upright position during its removal and prevent leakage of oil therefrom over the mechanic or adjacent structure and to collect within a part of the tool any oil that may drip from the system during the operation.

An object of the provision of an oil filter remover tool embodying a socket wrench and which tool is so constructed that during the actuation of the wrench to unthread the bolt connection used on the filter, such filter is enclosed by a housing associated with the wrench which housing retains the filter and maintains the filter in an upright position to inhibit leakage of oil and collects any oil which may leak therefrom during the removal of the filter.

Another object is the provision of an oil filter remover tool of the wrench type which is of simple, inexpensive construction and which is adapted to be employed to disconnect the filter from its support and to support the filter in an upright position during such disconnection and removal from the support and to support the same in such a manner as to inhibit any leakage of oil upon the mechanic or outside of the wrench itself. This tool includes a container or housing associated with the head of the wrench which encircles the head and which during the use of the tool surrounds the filter being removed to collect any oil leaking from the filter.

Other objects, advantages, and meritorious features will more fully appear from the following description, claims, and accompanying drawing, wherein:

Fig. 1 is a cross sectional view of my improved service tool showing it in use as applied to an automobile filter wrench as is shown in elevation;

Fig. 2 is a vertical sectional view taken through the tool shown in Fig. 1;

Fig. 3 is a fragmentary plan of the bottom of the cup surrounding the socket head and showing the head in plan; and,

Fig. 4 is a vertical sectional view through a modified form of tool.

As heretofore set forth the service tool of this application is a manual wrench type of tool. It is adapted to be used to loosen the bolt and nut mounting of a filter cup and to remove the same and to remove the filter without spilling the oil over the adjacent area and the mechanic removing the filter. In certain automobile constructions the oil filter is in the form of a canister or container comprising upper and lower sections which telescope together and the same is supported by an overhead bracket. A filter is supported to hang down below the bracket. The bolt connection which secures the filter to the bracket is a vertically disposed bolt depending downwardly through the filter. Such a construction is shown in Fig. 1.

In Fig. 1 a filter structure is indicated as 10. It is secured to a bracket 12 and depends below the bracket. The bottom of this filter structure is indicated by the numeral 14. A bolt or the like not shown in the drawing extends down axially through the filter and the head of the bolt is indicated at 16. To remove the filter the bolt is rotated to loosen the same thereby releasing the bottom portion of the filter and permitting its removal from the top portion for replacement or cleaning of the filter cartridge which is disposed within the filter.

My improved tool is of the wrench type. The wrench-like tool comprises a handle assembly which consists of a shank 18 and a handle per se mounted on one end of the shank and indicated as 20. Mounted on the opposite end of the shank is a wrench head adapted to engage with the head of a bolt or a nut mounted on a bolt. This wrench head is indicated at 22. It is a socket type of head being internally formed as at 24 to receive and engage the head of a bolt or a nut mounted on the bolt to rotate the same.

Mounted upon the shank is a cup-shaped container 26. The shank extends through the bottom of this cup as shown in Fig. 2. The cup is soldered to the shank or to the head of the wrench as at 28. The cup is of a size to be received over the oil filter as shown in Fig. 1. Upon the loosening and removing of the filter any oil which may leak from the system falls into the cup.

Fig. 4 illustrates a slightly modified form of structure. There are certain local modifications which might be difficult to rotate the cup with the wrench. Fig. 4 provides a cup which is rotateably supported upon the shank of the wrench. The shank of the wrench in Fig. 4 is indicated as 30. The socket head is indicated as 32. Such socket head has a stub portion 34 which is received within an enlarged end 36 of the shank and may be pinned thereto as by the pin 40 so that the head rotates with the shank. The cup, however, is rotateably mounted upon the stub portion 34 above the end 36 of the shank. A sealer ring 42 may be provided to prevent leakage of oil between the cup and the socket head.

What I claim is:

1. An oil filter remover tool of the wrench type comprising a handle provided with a wrench head, a cup-shaped receptacle mounted upon the tool surrounding the head, said head being disposed adjacent to the bottom of the cup and projecting outwardly therefrom in the same direction as the open end of the cup.

2. An oil filter remover tool of the wrench type comprising a handle provided with a socket head, said head being internally formed to receive and engage a part to rotate the part, a cup-shaped receptacle mounted upon the handle adjacent to the socket head and surrounding the same, said head projecting upwardly from the bottom
of the cup and opening outwardly in the same direction as the open end of the cup.

3. An oil filter remover tool of the wrench type comprising a handle provided on one end with a wrench head, said head being formed to engage a part to rotate the part, a cup-shaped receptacle mounted upon the handle in close proximity to the head with the wall of the cup encircling the head, said cup being rotatably supported on the handle to permit rotation of the head independently of the cup.

4. An oil filter remover tool of the wrench type comprising a handle provided on one end with a socket head, said head being internally formed to receive and engage a part to rotate the part, a cup-shaped receptacle mounted upon the handle in close proximity to the head with the wall of the cup encircling the head, said head being disposed adjacent to the bottom of the cup and substantially centrally thereof, said cup being rotatably supported upon the handle to permit relative rotation of the head and cup.

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