Oct. 9, 1928. 1,686,749

H. HIGGINS ET AL

AUTOMOBILE CRANK CASE DRAINER

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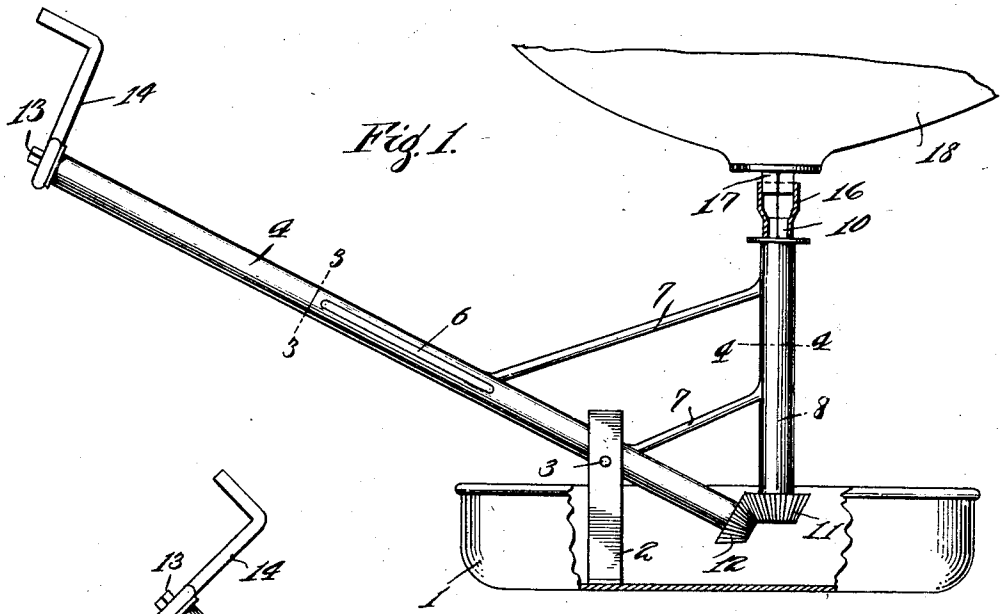

Fig. 1.

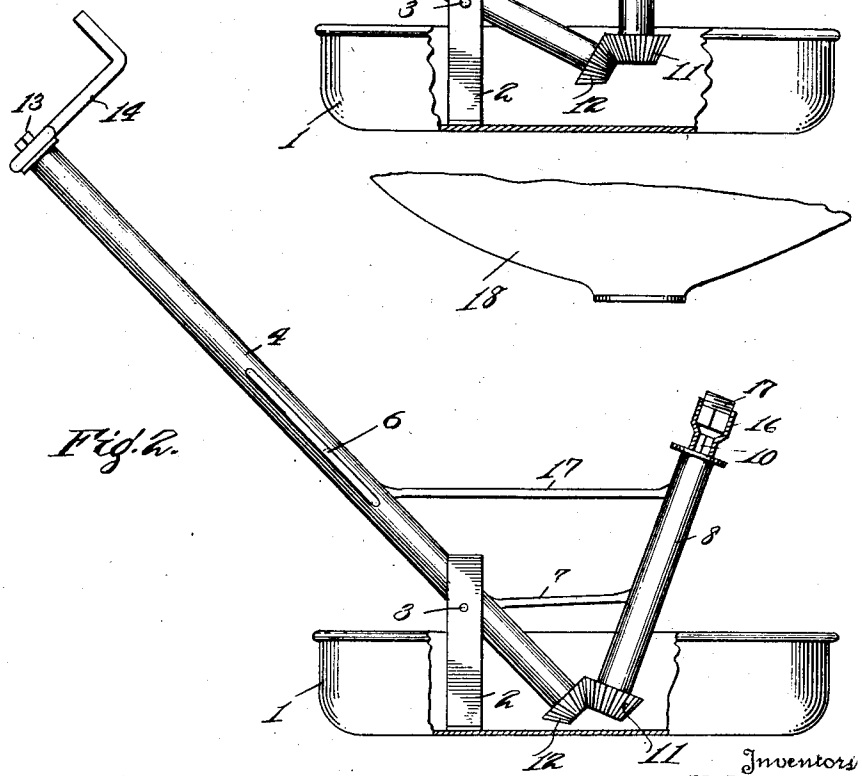

Fig. 2.

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Fig. 5.

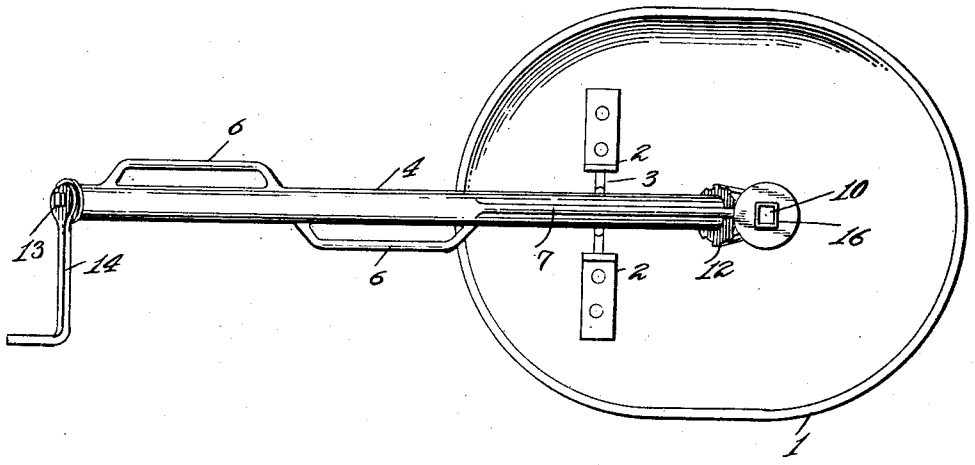


Fig. 3.

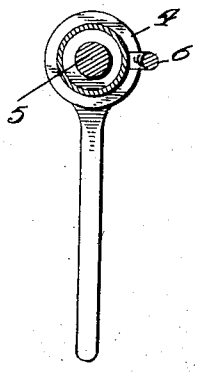
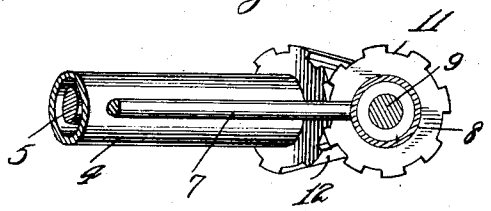


Fig. 4.



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UNITED STATES PATENT OFFICE.

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AUTOMOBILE CRANK-CASE DRAINER.

Application filed December 23, 1926. Serial No. 156,672.

The present invention is directed to improvements in devices for draining automobile crank cases.

The primary object of the invention is to provide a device of this character so constructed that it can be easily transported and placed under the crank case and operative to remove the crank case plug in order that the oil can be conveniently drained therefrom.

Another object of the invention is to provide a device of this character constructed and arranged in such manner that it can be easily placed for operation without the necessity of driving the car upon a rack or over a pit, or necessitating a person crawling under the car to drain the case, as is now customary.

Another object of the invention is to provide a device of this kind so constructed that it can be operated to remove the drain plug, the construction being such that after the case has been drained, the plug can be replaced.

In the accompanying drawing:

Figure 1 is a side elevation of the device, showing the same under a crank case, and in position for removing the plug therefrom.

Figure 2 is a similar view showing the device in position after removing the plug for draining the case.

Figure 3 is a sectional view on line 3—3 of Figure 1.

Figure 4 is a sectional view on line 4—4 of Figure 1.

Figure 5 is a top plan view of the device.

The device comprises a pan 1 preferably oval in shape and having a pair of posts 2 secured to the bottom thereof, and adjacent one end, said post pivotally supporting the rock shaft 3, the purpose of which will later appear.

The tubular handle 4 is provided and in this handle is rotatably mounted a driving shaft 5. The handle is suitably secured adjacent its inner end to the rock shaft 3 in order that the angularity of the same can be changed. The handle not only performs its function, but serves as a housing for the shaft 5. To facilitate the operation of the device, the handle 4 is provided with hand grips 6. Having their lower ends fixed to the handle 4 are bars 7 and supported by the upper ends of said bars is a tubular housing 8 in which is rotatably mounted a shaft 9, the upper end of which is provided with a squared head 10, the lower end of said shaft having fixed thereto a beveled gear 11 which meshes with a similar gear 12 fixed to the inner end of the shaft 5. The shaft 5 has its outer end provided with a squared head 13 and engaged therewith is a crank shaft 14, through the medium of which the shaft 5 is rotated to transmit rotary movement to the shaft 9.

A socket member 16 is engaged upon the head 10, it being essential of course that the same be of a size to conveniently engage the plug 17 of the crank case 18, and in order to do this we have deemed it desirable to provide socket members of various sizes.

In operation the pan 1 is placed under the crank case 18 and through the medium of the handle 4. A selected socket member is engaged with the head 10 and with the drain plug 17 and upon imparting rotary movement to the shaft 9 through the shaft 5, the plug will be unscrewed and retained in the socket member, whereupon the handle is swung upwardly in order to move the plug from under the drain opening, thus permitting free flow of oil from the opening into the pan 1. After the crank case has been thoroughly drained, the handle is rocked downwardly, thus bringing the plug 17 to a position to be screwed into the drain opening upon reversely rotating the shaft 9 through the medium of the shaft 5.

It will be observed that the shaft 9 is disposed in acute angular relationship with respect to the handle 4 and the shaft 5 in order that when the shaft 5 is being rotated to remove or replace the plug 17, it will assume a true perpendicular position.

Having thus described the invention, we claim:

1. In a device for removing and replacing drain plugs of crank cases for the purpose specified, comprising in combination, a pan, a tubular handle pivotally supported on the pan, a driving shaft rotatable in the handle, a housing supported by the handle, a driven shaft rotatable in the housing, a gear connection between the driving and driven shaft, a socket member detachably engaged with the driven shaft for engagement with the drain plug upon pivotal movement of the shafts and rotatable with the driven shaft, as and for the purpose set forth.

2. In a device for removing and replacing drain plugs of crank cases for the purpose

specified, comprising in combination, a pan, a tubular handle pivotally supported by the pan, a driving shaft in the handle, a tubular housing carried by the handle and disposed in angular relation with respect thereto, a shaft mounted in the housing and rotatable by the driving shaft, and a socket member detachably connected with the driven shaft for engagement with the drain plug upon pivotal movement of the shafts.

In testimony whereof we affix our signatures.

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