

June 18, 1957

ST. CLAIR O. BANKS

2,796,148

OIL CHANGING DEVICE FOR INTERNAL COMBUSTION ENGINES

Filed Aug. 31, 1953

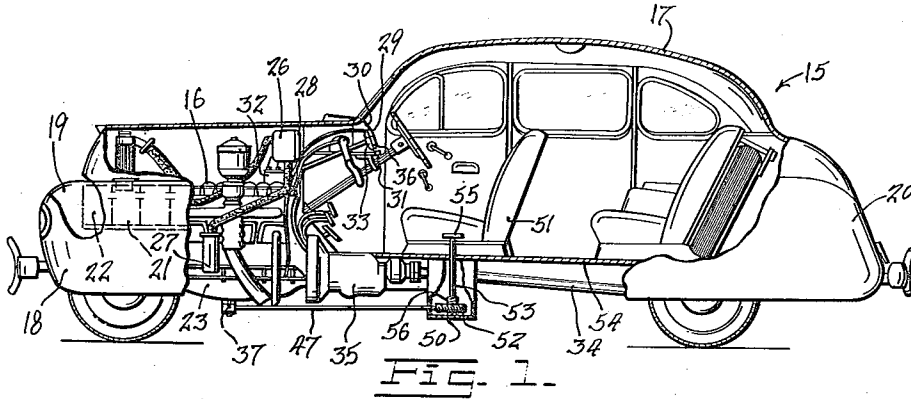


FIG. 1.

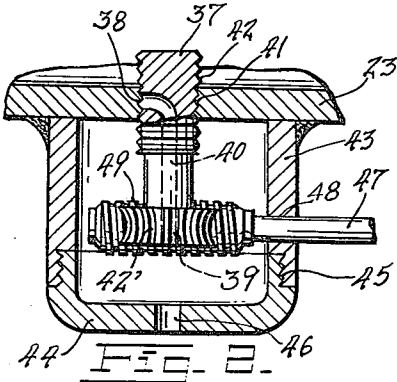


FIG. 2.

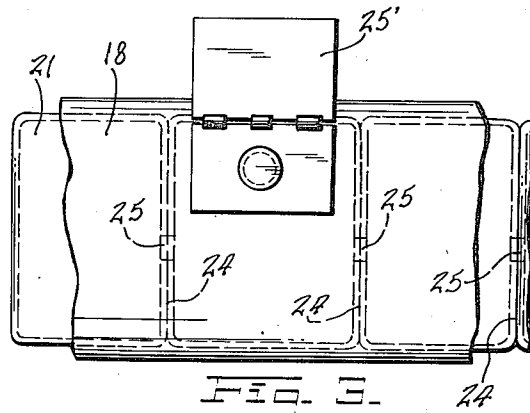


FIG. 3.

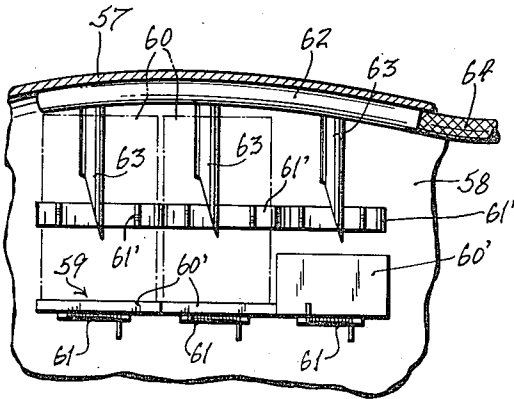


FIG. 4.

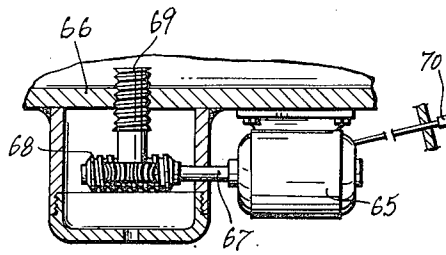


FIG. 5.

INVENTOR.  
ST. CLAIR OLIVER BANKS  
BY *Golden H. Holscher*  
ATTORNEY

1

2,796,148

## OIL CHANGING DEVICE FOR INTERNAL COMBUSTION ENGINES

St. Clair Oliver Banks, White Plains, N. Y.

Application August 31, 1953, Serial No. 377,360

3 Claims. (Cl. 184-105)

This invention relates to new and useful improvements in apparatus for adding and changing oil in the crankcase of an internal combustion engine vehicle such as an automobile.

More particularly, the present invention proposes constructing apparatus which can be operated from inside the vehicle either to add oil to the crankcase or completely change the oil in the crankcase without the necessity either of driving the vehicle on a lift or over an oil changing pit, or of soiling one's hands.

Another object of the present invention proposes forming the apparatus with means to indicate inside the vehicle when oil needs to be added to the crankcase and when a complete change is needed.

Still further, the present invention proposes constructing the apparatus with means to open and close the drain plug of a crankcase by simple operations inside the vehicle and like convenient means to add oil from a container or containers to the crankcase.

As a further object, the present invention proposes arranging the apparatus so that selected amounts of oil may be withdrawn from one container or one series of containers to add oil to the crankcase of a vehicle and the entire contents of another container or series of containers may be withdrawn to change the crankcase oil completely.

The present invention further proposes a novel arrangement of a rack means for individual oil cans or containers commonly used and available with puncturing and conduit means secured adjacent the rack means for convenient provision of oil for adding to the crankcase.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a side view with parts broken away and in section of an automobile equipped with apparatus constructed and arranged in accordance with the present invention.

Fig. 2 is an enlarged fragmentary view of the crankcase drain plug and associated parts shown in Fig. 1.

Fig. 3 is a top plan fragmentary view of the fender and fender tanks shown in Fig. 1.

Fig. 4 is a fragmentary side elevational view, partly in section, beneath a fender showing oil container racks and illustrating a modification of the present invention.

Fig. 5 is a view similar to Fig. 2 but illustrating a further modification of the present invention.

The apparatus for adding and changing oil in the crankcase of an internal combustion engine, in accordance with the first form of the invention illustrated in Figs. 1 to 3, inclusive, is shown installed in an automobile 15.

Automobile 15 has an engine 16 and a body 17 with front fenders 18 and 19 and rear fenders 20. Being of

2

conventional design, the front fenders are adjacent the engine, but it is obvious that the apparatus now to be described may be used equally as well in rear engine vehicles.

Under the front fenders 18 and 19, like constructed oil containers 21 and 22 are secured, container 21 being under fender 18 and container 22 under fender 19. Each oil container 21 and 22 has a capacity equal to that of the crankcase 23 of automobile 15. The oil containers 21 and 22 may each be a single tank or they may contain partitions 24 with interconnecting openings 25 and fenders 18 and 19 have hinged flaps 25' for filling them.

Oil container 21 is for adding oil to the crankcase 23 and container 22 is for a full or complete change.

An oil pump 26 is connected separately with each oil container and with the oil inlet opening 27 of the crankcase 23. The oil pump 26 may have a motor 28 or it may be run from the engine 16 itself.

A gauge 29 secured to dashboard 30 located inside the automobile is connected with crankcase 23 to indicate the amount of oil in the crankcase and show the amount needed, if any, in the engine.

A pump switch 31 is also located on dashboard 30 and is connected with the pump motor 28 and battery 32 to activate the pump to supply oil to the crankcase from one of the containers 21 or 22. The switch and pump are arranged so that the operator may choose from which tank or container he wishes to draw and to what extent he wishes to withdraw. The gauge 29 will show the operator when to release the switch as the crankcase is filled.

The apparatus above described will permit oil to be added to the crankcase whenever needed and will show such need without the necessity of the operator getting out of the automobile.

To provide means to change the crankcase oil as well as to add more oil, speedometer 33 connected with the drive shaft 34 and transmission 35 in the usual manner has a signal lamp or light 36 linked to it to signal at each thousand miles of travel, or any other amount of engine time or vehicle travel selected for changing the crankcase oil.

Crankcase 23 is provided at its bottommost part with a drain plug 37. This drain plug 37 has a side port opening 38 (see Fig. 2) and a lower end port opening 39 with a passageway 40 connecting the port openings. The drain plug is vertically disposed in the crankcase extending through crankcase drain opening 41, plug 37 and opening 41 having mating threads. The upper end of plug 37 is solid and the exterior threads 42 on the plug permit it to be moved up and down to dispose the side port opening 38 in and out of the crankcase.

Means to unscrew and re-screw the plug 37 are provided in the following manner. A cylindrical housing 43 is secured to the crankcase 23 around the plug 37 and a cap 44 is removably secured to the lower end of the housing 43 by threads 45. The cap 44 has a drain hole 46 to permit oil to flow out. A substantially horizontal rod 47 has one end rotatably held in an opening 48 in the housing gear 43 and a worm 49 is secured to the end of this rod. Worm 49 is held operatively engaged with the worm wheel threads 42' on the drain plug 37 and rotation of the worm 49 in one direction moves the plug 37 upwardly while rotation in the other direction moves plug 37 downwardly with relation to the crankcase. This alternately disposes the side port opening 38 in and out of the crankcase.

The other end of rod 47 is rotatably held in a housing 50 beneath the driver's seat 51. A second worm gear 52 (Fig. 1) is secured to this end and a vertically disposed rod 53 extends through the floor 54 of the automobile and is rotatably held with a handle 55 at its upper end and

3

a worm gear or screw 56 at its lower end. The worm gear or screw 56 on the vertical rod 53 operatively engages the second worm gear 52 on the substantially horizontal rod 47 to complete linkage means for moving the drain plug in either direction from inside the automobile.

The modification illustrated in Fig. 4 is characterized by the provision of a fender 57 having beneath it and secured to a side wall 58 adjacent thereto, a series of racks 59 to hold individual oil cans indicated in dot-dash outline at 60. Each rack 59 consists of a hinged platform 60' having a spring 61 normally biasing it into a closed upward position flat against wall 58. In addition, a spring clamp 61' is provided to secure the oil cans.

Secured to fender 57 beneath the fender is a metal hollow conduit 62 having spaced downwardly protruding oil can or container tubular puncturing members 63, one disposed adjacent each rack to puncture the can held on that rack and connect it with the conduit 62. A flexible hose 64 connects the conduit 62 with the oil pump above described.

The modification illustrated in Fig. 5 is characterized by the provision of a motor 65 removably secured to crankcase 66 beneath the crankcase. Motor 65 has a motor shaft 67 secured to worm gear 68 which is operatively connected with drain plug 69 in the manner described with reference to Fig. 2. Motor 65 is connected with a motor switch 70 located inside a vehicle and thereby with a battery. Motor 65 is of the reversing type and the switch is so operable.

It is to be understood that the drained out oil may be utilized in places where oil is used for cooling and damping purposes in devices of all types.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. In a motor vehicle, a body, a crankcase supported on said body, a fender supported on the body, an oil pump, a motor operatively connected to the pump, means of connection between the pump and crankcase for supplying oil to said crankcase, hinged platforms supported

4

on said fender for supporting sealed cans containing oil, sealed cans containing oil on said platforms, means supported by the fender for puncturing said cans, and conduit means associated with said puncturing means communicating with said oil pump for supplying oil thereto.

2. In a motor vehicle, a body, a crankcase supported on said body, a fender supported on the body, an oil pump, a motor operatively connected to the pump, means of connection between the pump and crankcase for supplying oil to said crankcase, hinged platforms supported on said fender for supporting sealed cans containing oil, sealed cans containing oil on said platforms, means supported by the fender for puncturing said cans, and conduit means associated with said puncturing means communicating with said oil pump for supplying oil thereto, said puncturing means including tubular members connected to the fender and depending therefrom in line with the supported cans on the platforms, the bottom ends of said tubular members being pointed for puncturing the tops of the cans.

3. In a motor vehicle, a body, a crankcase supported on said body, a fender supported on the body, an oil pump, a motor operatively connected to the pump, means of connection between the pump and crankcase for supplying oil to said crankcase, hinged platforms supported on said fender for supporting sealed cans containing oil, sealed cans containing oil on said platforms, a conduit extending along and supported by said fender, spaced tubular members depending from said conduit in line with the supported oil cans, said tubular members communicating with the interior of the conduit, the bottom ends of said tubular members being pointed for puncturing the tops of the cans, and a flexible tube having one end connected to one end of the conduit and having its other end connected to said pump.

#### References Cited in the file of this patent

##### UNITED STATES PATENTS

|    |           |         |                |
|----|-----------|---------|----------------|
| 40 | 1,514,255 | Murdock | Nov. 4, 1924   |
|    | 1,555,326 | Mummert | Sept. 29, 1925 |
|    | 1,590,010 | Wuthnow | June 22, 1926  |
|    | 2,509,426 | Fransen | May 30, 1950   |

##### FOREIGN PATENTS

|    |         |               |              |
|----|---------|---------------|--------------|
| 45 | 287,480 | Great Britain | July 5, 1928 |
|    | 698,970 | France        | Feb. 9, 1931 |