The principal object of this invention is to provide a method of and means for supplying or withdrawing fluid from a crankcase or like that will permit the rapid withdrawal of oil from the crankcase of a motor, the analysis of the oil so withdrawn, the refilling of the crankcase with fresh oil of a selected grade or the replacing of the oil withdrawn for analysis back into the crankcase of the motor.

A further object of this invention is to provide a method of and means for supplying or withdrawing fluid from a crankcase or like which has a positive method of forcibly removing the oil from the crankcase, an examination chamber for the oil so removed, a selective dispenser for measuring and dispensing oil from sealed transparent containers, and a means for introducing flushing fluid into the crankcase and withdrawing it therefrom.

A still further object of this invention is to provide an oil refill pipe to be attached to the crankcase of an automobile vehicle which will permit the attachment of the dispensing means thereto without necessitating entrance to the crankcase from underneath the vehicle or motor.

A still further object of this invention is to provide a method of and means for supplying or withdrawing fluid from a crankcase or like which will permit the changing or withdrawing of oil from the crankcase of an automobile vehicle without danger of spilling the oil over the various parts of the motor, and which will accomplish the result rapidly and cleanly, while at the same time assuring the purchaser of an accurate amount of oil of the specified grade and visual inspection of the same.

A still further object of this invention is to provide a method of and means for supplying or withdrawing fluid from a crankcase or like that is economical in manufacture, durable and efficient in use.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawing, in which:

Fig. 1 is a diagrammatical view of my complete method of and means for supplying or withdrawing fluid from a crankcase or like ready for use.

Fig. 2 is an enlarged cross sectional view of the nozzle cap showing the method of quickly securing the dispensing and withdrawing means to the filler pipe of the vehicle.

Fig. 3 is an enlarged side elevational view of the upper open end of the filler cap more fully illustrating its structure.

Fig. 4 is an enlarged cross sectional view of the crankcase plug and the oil refill tube showing its method of attachment to the crankcase of a vehicle.

Fig. 5 is an enlarged top sectional view of the crankcase plug element and is taken on line 5-5 of Fig. 4.

Fig. 6 is an enlarged side sectional view of a portion of the dispensing tube showing the flushing tube suspended therein.

Hereinafter, it has been necessary to drain the oil from a crankcase of a motor, more specifically from automotive vehicles such as trucks, cars or the like, from the bottom of the crankcase. This necessitated raising the vehicle, going below the car and removing a drain plug, permitting the oil to run into a bucket or other container. The plug was then placed back into the crankcase drain, and if the device was to be flushed with a flushing oil, the whole process had to be repeated. The oil was then measured in a container and introduced into the filler pipe for filling the crankcase. This is a messy and tedious job and ties up the use of the vehicle for a considerable length of time. Furthermore, the purchaser has no means of knowing whether or not the oil so withdrawn had lost its body, and in order to protect himself in obtaining the proper oil, has been forced to pay more because of the sealed containers which premium oil companies have been forced to use to insure against substitution of cheaper grades of oil. I have overcome all of such disadvantages as will be hereinafter more fully set forth.

Referring to the drawing, I have used the numeral 10 to designate an internal combustion motor or the like having thereon the usual crankcase 11 and crankcase ventilator 12. As is well known, these crankcases have a draining opening in their lower side for draining the oil therefrom, and this opening is internally threaded. I have used the numeral 13 to designate a hollow plug member having the radially extending holes 14 therein and a bottom flange member 15. The numeral 16 indicates an elongated filler pipe having on its lower portion a collector ring 17 with an inside channel groove 18 therein, which is in communication with the pipe 19. This collector or sleeve 17 fits about the body portion of the plug 13 so that the holes 14 are in
communication with the collector channel or groove 18. The plug 13 is then placed in the threaded portion of the crankcase opening with gaskets 19 and 20 placed between the plug and the crankcase and between the flange 15 and rings 17 as shown in Fig. 4 of the drawing. This pin 16 then extends upwardly beside the motor 10, is secured thereto and terminates in a flange top 21 having the bayonet slot openings 22 therein. The numeral 23 indicates a filler pipe cap which may be placed over the open end of the pipe 16 and secured thereto by having the ordinary bayonet pins therein and in the usual manner.

It will be noted that I have provided a hole 15 extending through the flange portion 15 of the plug 12. Through this hole may be introduced a wire which may then be fastened about the pipe 16, as shown in Fig. 1, thereby preventing the accidental displacement of the plug 13 from the crankcase. Such a wire I have designated by the numeral 24.

It is in combination with such a motor and filler pipe that I use my method of and means for supplying and withdrawing fluid from a crankcase or like which I will now describe.

The numerals 25, 26, 27 and 28 indicate oil reservoirs made of transparent material or having a transparent opening therein for containing various types of oils such as grades and weights. Each of these containers has a locking top portion 25, 26, 27 and 28 respectively, which may be locked through the medium of a padlock 29 by the bulk oil service man or the like. I have used the numerals 30, 31, 32 and 33 to indicate dispensing pipes each having one of their ends in communication with the inside of the containers 25, 26, 27, and 28 respectively and having their other ends in communication with a manually operated distributing valve 34. The numeral 35 indicates a light bulb placed below each of the containers and extending up into them for the purpose of illuminating the oil within the container and at the same time warming the oil to be dispensed. These lamps are in communication with a suitable source of electrical energy through the medium of the wires 35'

The numeral 36 indicates a visual inspection chamber construction of a transparent material such as glass, plastic or the like and having the hydrometer housings 37 and 38 in communication therewith and parallel thereto. In each of these housings 37 and 38 I have provided a hydrometer bulb 39 and 40 respectively for measuring the specific gravity of the oil within the visual inspection chamber 36 and measuring the amount of impurities such as water, gasoline, or sediment therein. The numeral 41 indicates a pump cylinder in communication with the upper end of the chamber 36 and having therein the ordinary plunger 42 and rod 43. This pump may be any type of pump and may be remotely situated from the chamber 36. It may also be manually driven or mechanically driven, but I have shown a simple type plunger pump for purposes of illustration. The lower end of the chamber 36 is tapered and is in communication with a shut-off valve 44. The numeral 45 indicates a variable diameter conduit having one or more sides in communication with the valve 44, one of its other sides in communication with a pipe 46 leading to a suitable waste container, and its other side in communication with a pipe or conduit 47. The numeral 46 indicates a met.
chamber 49, the dial of the selector valve 34 set for the proper grade of oil, which is allowed to pass through the meter 46 into the chamber 48 for the inspection of the customer. The valve member 50 is then operated to close the end of the tube 51 and hence to the pipe 45 through the pipe 51, hose 52, coupling 53, pipe 16 and thence through the holes 14 into the crankcase 11 of the motor. Should it be desired to flush the crankcase before placing the new oil therein, the flushing fluid is withdrawn at the lower end out through the pipe 60, valve 59, the pipe 51 into the tube 55, where it will pass into the crankcase 11. The motor is then run to assure the cleaning of the crankcase and oil system, and the valve 55 is closed and the flushing fluid is removed by the same process accomplished in the removal of the old oil. By this method all that is necessary is to operate the pump 41, secure the coupling to the top of the pipe 16, set the valves, and remove or dispense oil in a very short period of time. In practical operation, these valves may be arranged to further ease the manipulation of the device.

When it is desired to clean the device, it is merely necessary to drop the coupling 53 into a container of gasoline or the like, draw this up through the valves and into the chamber 36, and then force it back out and into the container, thus making the device easily cleaned without need of disassembling the parts.

Thus it will be seen that I have provided a method of and means for supplying and dispensing fluid from a crankcase or like, a plurality of fluid containers, a distributing valve having its inlet in communication with each of said fluid containers, a meter having its inlet in communication with the outlet of said distributing valve, a visual measuring and storage container having its upper end in communication with said meter, a three-way valve having one of its inlets in communication with the lower end of said visual measuring and storage container, a hose having one end in communication with said three-way valve, and its other end designed to be detachably secured to and in communication with a crankcase or like, a visual inspection chamber, a pump in communication with said inspection chamber, a variable distributing valve in communication with the lower end of said visual inspection chamber, and having one of its sides in communication with said three-way valve and its other side in communication with a waste pipe, a means for visually gauging the sediment of said oil in said inspection chamber, a flushing tube inside said hose between the measuring and storage container and the crankcase, and a valve for controlling the flow of a flushing fluid into said flushing tube at times.

The coupling 53 may have incorporated therein a shut-off valve for stopping the flow of oil at that point, and a number of methods may be used for the introduction of the oil from the pipe 16 into the crankcase 11. Although I have described my device specifically for use with oil, it may be used for other types of fluid dispensing means.

Some changes may be made on the construction and arrangement of my improved method of and means for supplying and withdrawing fluid from a crankcase or like without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim:

1. In a means for supplying or withdrawing fluid from a crankcase or like, a plurality of fluid containers, a distributing valve having its inlet in communication with each of said fluid containers, a meter having its inlet in communication with the outlet of said distributing valve, a visual measuring and storage container having its upper end in communication with said meter, a three-way valve having one of its inlets in communication with the lower end of said visual measuring and storage container, a hose having one end in communication with said three-way valve, and its other end designed to be detachably secured to and in communication with a crankcase or like, a visual inspection chamber, a pump in communication with said inspection chamber, a variable distributing valve in communication with the lower end of said visual inspection chamber, and having one of its sides in communication with said three-way valve and its other side in communication with a waste pipe, a means for visually gauging the sediment of said oil in said inspection chamber, a flushing tube inside said hose between the measuring and storage container and the crankcase, and a valve for controlling the flow of a flushing fluid into said flushing tube at times.

2. In a means for supplying or withdrawing fluid from a crankcase or like, a plurality of fluid containers, a variable distributing valve in communication with each of said fluid containers, a meter, a measuring means in communication with said meter, a three-way valve in communication with said measuring means, a dispensing tube having one end in communication with said three-way valve, a means for detachably securing the other end of said dispensing tube to and in communication with a crankcase, a visual inspection chamber, a pump mechanism in operative communication with one end of said visual inspection chamber, a second distributing valve in communication with the other end of said visual inspection chamber, a pipe in communication between said second mentioned valve and said three-way valve, and a waste pipe in communication with the other side of said second mentioned valve.

3. In a means for supplying or withdrawing a fluid from a crankcase or like, a visual inspection chamber, a pump in communication with the upper end of the said visual inspection chamber, a three-way valve in communication with the lower end of said inspection chamber, a waste outlet in communication with said valve, a hose attached to said valve having its other end in detachable engagement in communication with a crankcase, said pump being capable of forcibly withdrawing fluid from said crankcase into said
inspection chamber, a three-way valve interposed in said hose between the visual inspection chamber valve and the crankcase, a visual measuring and storage container in communication with said valve, a meter at the upper end thereof, a distributing valve in communication with said meter, a plurality of storage chambers, said storage chambers being in communication with said distributing valve, and an inlet conduit having a valve therein, said inlet conduit being interposed between the measuring container valve and the crankcase for the introduction of cleaning fluid.

4. In a system of the class described, a manifold removably connected to the crankcase of an internal combustion motor, means for withdrawing oil through the manifold for visual inspection thereof, means for selectively returning the oil to the crankcase or discharging it from the system, means for introducing flushing oil into the manifold and for delivering it to the crankcase, a plurality of means for storing fresh oil, selective valve means for selecting charges of oil from the storage means, metering means associated with the selective means for metering oil supplied from the storage tanks, a visual measuring storage tank for receiving oil from the meter, and valve means for permitting fresh oil to flow from the visual measuring storage tank into the manifold and motor crankcase, the system thus formed being adapted to withdraw old oil from the crankcase of the motor vehicle, permit inspection of the old oil and selectively discharge or return it, admit flushing oil to the crankcase and withdraw and discharge it, and supply a measured supply of new fresh oil to the crankcase.

LEO REX PARSON.