Oct. 14, 1941. M. S. YOUNG ET AL 2,258,637

PORTABLE DISPENSER FOR LUBRICATING OIL

Filed Oct. 5, 1940 2 Sheets-Sheet 1

Fig. 1.

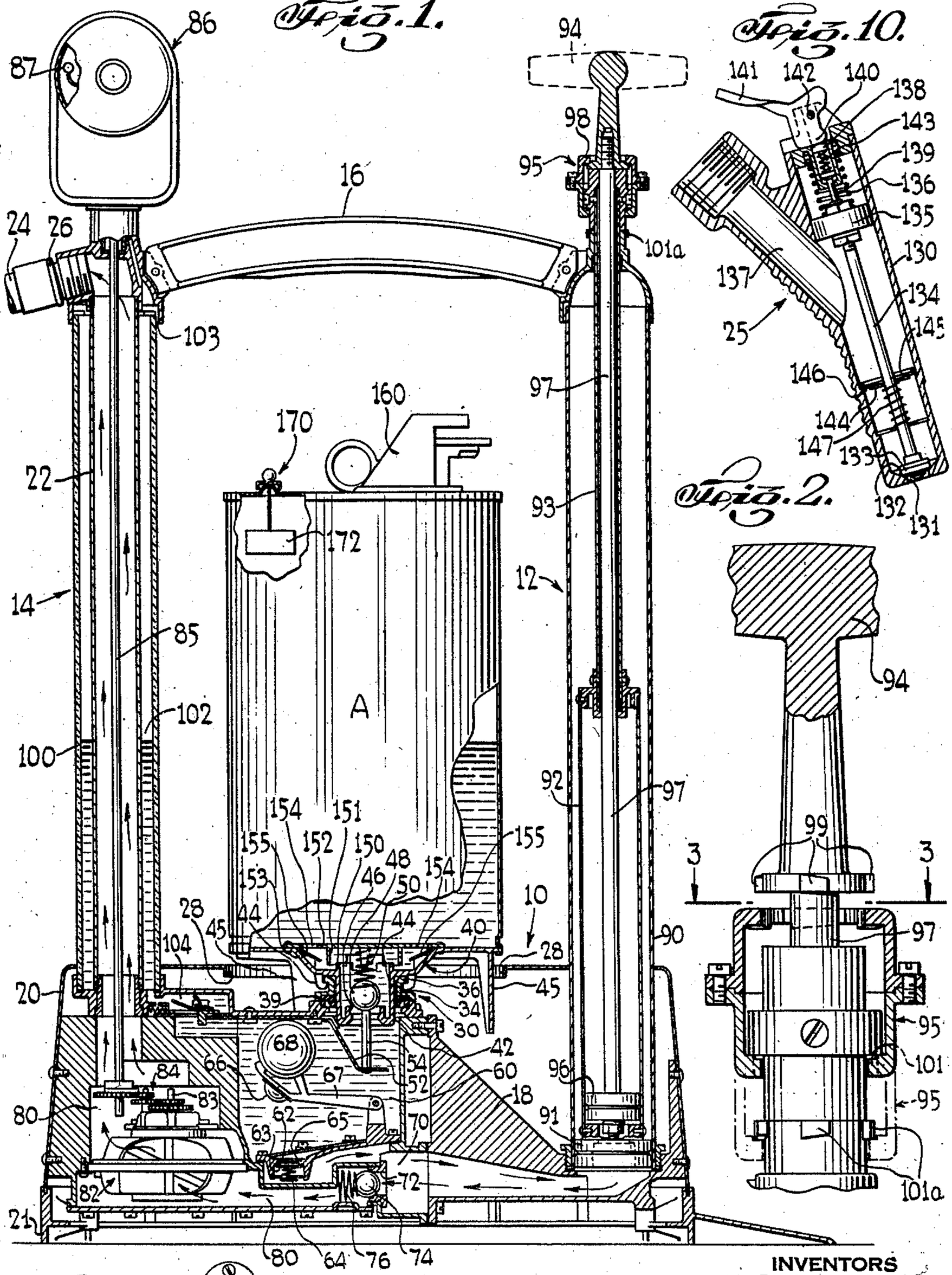
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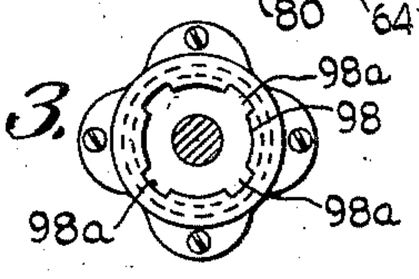
Fig. 10.

Fig. 2.

Fig. 3.



INVENTORS
MARVIN S. YOUNG
RAYMOND B. LEWTHWAITE
BY
Hammond & Littell
ATTORNEYS

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Fig. 5.

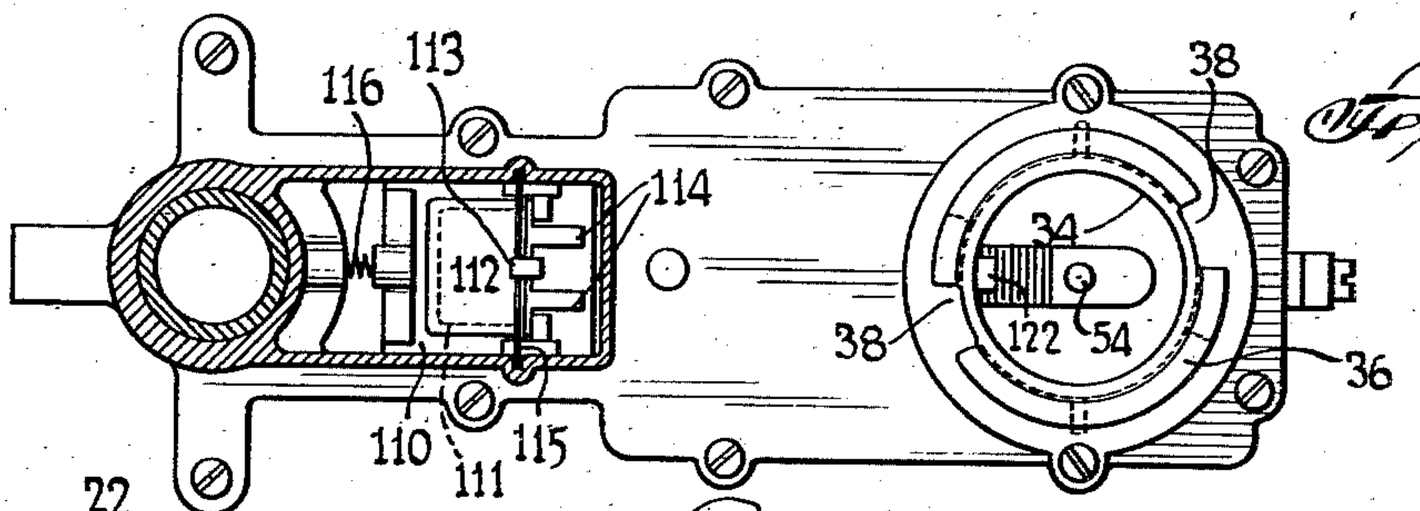

Fig. 4.

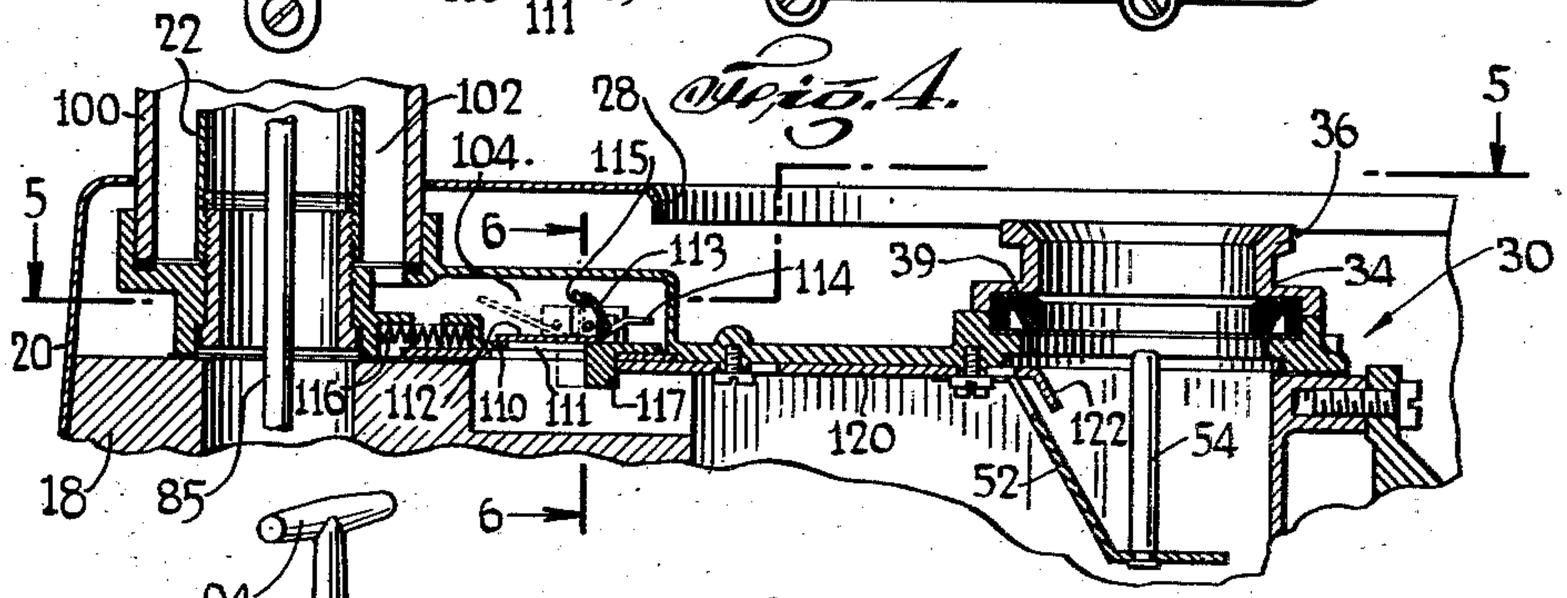

Fig. 6.

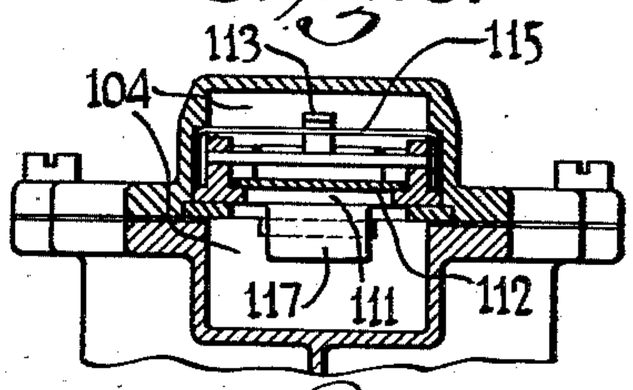

Fig. 7.

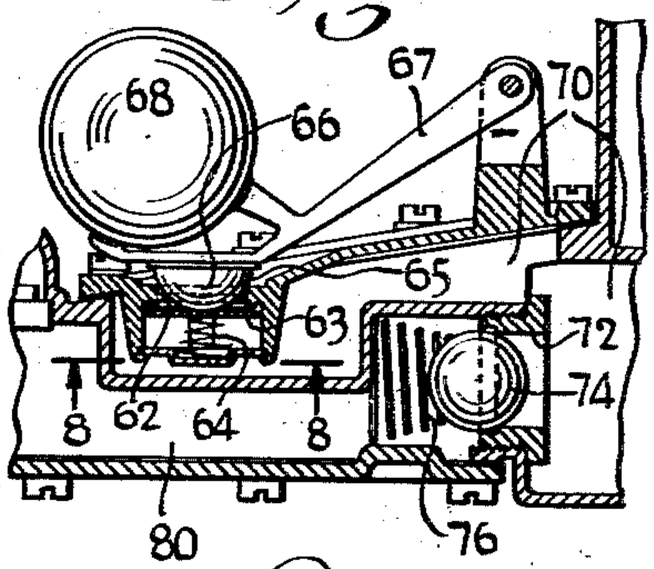

Fig. 8.

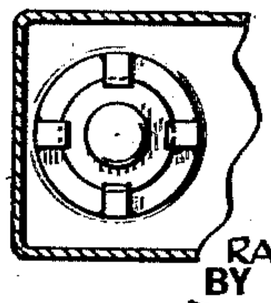

Fig. 9.

INVENTORS
MARVIN S. YOUNG
RAYMOND B. LEWTHWAITE
BY Hammond & Littell
ATTORNEYS

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UNITED STATES PATENT OFFICE

2,258,637

PORTABLE DISPENSER FOR LUBRICATING OIL

Marvin S. Young, Scarsdale, N. Y., and Raymond B. Lewthwaite, Hasbrouck Heights, N. J., assignors to The Merlin Corporation, New York, N. Y., a corporation of Delaware

Application October 5, 1940, Serial No. 359,864

22 Claims. (Cl. 221—95)

This invention relates to new and improved apparatus for dispensing lubricating oil and the like. The present application is a continuation-in-part of our co-pending application, Serial No. 214,448, filed June 18, 1938, and discloses certain improvements or modifications of the invention claimed in said co-pending application.

In accordance with our invention, we have provided a new type of portable dispensing system for lubricating oil, particularly for use in the operation of automobile service stations, which permits such oil to be delivered directly into waiting vehicles from portable lubricant supply containers, which meters accurately the amount of oil so delivered in each dispensation, which gives effective protection against fraudulent substitution of unauthorized brands or grades of oil and assures freedom from contamination of the oil being dispensed, and which in these and other respects constitutes a more practical and more desirable dispensing system than other systems heretofore used in service station work. Small portable dispenser carriages are provided, each of which mounts a delivery pump, a flow meter, a delivery hose, appropriate oil feed lines, and a liquid inlet system including means for attaching and sealing portable supply containers on the dispenser and means for opening such containers as they are attached to permit discharge of their contents through the dispenser. Provision is made for constantly keeping the delivery hose and feed lines of the dispenser full of oil, for automatically preventing further delivery of oil from the dispenser when a supply container attached to the dispenser inlet system has been emptied, and for automatically restoring the dispenser to operative condition when another full supply container is attached thereto. The arrangement is such that each dispenser and an attached supply container may be lifted and carried readily to various locations and there actuated to deliver accurately metered quantities of lubricant directly into waiting vehicles. The system is further such that the purchaser of the lubricant in each instance is able to observe the amount of oil he receives and to determine whether the oil conforms to the brand and grade ordered. The supply containers used for cooperation with the dispensers may be of comparatively large size, say of five-quart capacity, so that economy may be realized in handling and dispensing the oil, and it not only becomes unnecessary to deliver from a number of one-quart containers, or to refill such containers, in the course of dispensing more than a quart of oil, but also short deliveries heretofore resulting from clingage of oil to such containers are eliminated.

By our present invention we provide new and useful portable dispensing apparatus embodying new features and advantages of the system just described, and also such apparatus including certain modifications or improvements of the apparatus shown in said co-pending application. The apparatus herein disclosed includes a portable dispensing unit of the character described equipped with a special new liquid inlet system for cooperation with refillable portable supply containers. It also includes new and useful refillable portable supply containers for use with such dispensers. The dispenser unit itself embodies numerous new constructions, arrangements and combinations of parts which improve its design, operation and utility, for instance, by rendering the metering of the lubricant more readily apparent to the purchaser, by indicating clearly the level of lubricant in attached supply container at all times, and by permitting variation in the rate of delivery of lubricant upon manipulation of the pump mounted on the dispenser carriage.

A further feature of the invention is that it provides a dispenser system of the character described which dispenses accurately metered quantities of lubricant directly from refillable portable supply containers and at the same time gives effective protection to the purchaser of the lubricant against unauthorized substitution of inferior brands or grades of lubricant by the service station attendant.

These and other features and advantages of our invention and the manner in which they may be attained will become more apparent from the following description of an illustrative embodiment of the invention, when considered in connection with the accompanying drawings in which:

Figure 1 is a sectional elevation showing the assembly of the illustrated embodiment;

Figure 2 is an enlarged section showing a portion of the pump mechanism;

Figure 3 is a horizontal cross-section substantially along line 3—3 of Fig. 2;

Figure 4 is an enlarged vertical section showing the dispenser inlet system and parts adjacent thereto associated with the liquid level gauge;

Figure 5 is a plan view, partly in section, substantially along the line 5—5 of Fig. 4;

Figure 6 is a vertical section substantially along line 6—6 of Figure 4;

Figure 7 is an enlarged vertical section showing the valve system of the dispenser feed lines, with the float-controlled valve in closed position;

Figure 8 is a horizontal section, looking upwardly, substantially along 8—8 of Fig. 7;

Figure 9 is a perspective view of the complete dispenser unit with a supply container attached thereto in dispensing position; and

Figure 10 is a longitudinal section through the delivery nozzle of the dispenser.

In the illustrated embodiment the dispenser

unit itself is made as a portable carriage which comprises a base 10 having uprights 12 and 14 projecting vertically therefrom in spaced relation, preferably with a handle 16 bridging the uprights and attached thereto near their upper ends to allow convenient lifting and movement of the unit. The base 10 is preferably formed as a casting with appropriate chambers, passages, etc., to accommodate or constitute parts of the dispenser mechanism, the casting being surrounded by a sheet metal skirt 20.

In this form the lower peripheral wall 21 of the casting provides a footing which supports the dispenser in upright position. The upright 12 extending vertically from one end of the base is formed by the barrel 90 of a manually operable pump mechanism hereinafter described. The upright 14 extending vertically from the other end of the base includes an internal conduit 22 which forms part of the dispenser feed lines and communicates at its upper end with a delivery hose 24. The hose 24 is attached near the upper end of upright 14, as by a threaded nipple 26, and it terminates in a valved nozzle 25 which, when the dispenser is not in use, can be placed in a socket 27 also attached to upright 14.

Between the uprights 12 and 14 the base 10 is provided with a liquid inlet system 30 adapted especially to cooperate with refillable supply containers A having valved liquid outlets 40 on their bottom walls. The inlet system 30, for example, includes a ring-like member 34 defining an inlet throat which snugly receives a tubular outlet spout 42 fixed to the bottom wall of the container A. An outwardly directed flange 36 at the top of member 34 is formed with notches 38 (Fig. 5) which receive lugs 44 projecting from the container bottom adjacent but in spaced relation to the spout 42. A resilient sealing ring 39, made of oil resistant rubber or other suitable material, is held in an annular recess inside of member 34 in position to form a seal with the outside wall of spout 42 when container A is attached to the dispenser.

The container A may have supporting means 45 depending from its lower end to a point below the end of spout 42, to support the container when not attached to a dispenser unit. The skirt 20 of base 10 may extend across the top of the base to a margin 28 defining an opening large enough to receive the container supporting means.

As seen in Fig. 1, the spout 42 carries at its lower end an annular seat 46 for a check valve 48 located inside the spout. Valve 48 is normally held against its seat by a compression spring 50. As seen in Figs. 1 and 4, a bracket 52 extending to a position below the inlet throat carries a pin 54 which projects vertically to a position such that the end of pin 54 engages valve 48 and lifts it from its seat when container A is attached to the inlet system. It will therefore be apparent that when the spout 42 of the container is moved into the inlet throat defined by member 34, fluid communication is established between the spout and a small chamber 60 in the dispenser base; also, that movement of spout 42 into member 34 attaches the container to the dispenser and forms an air-tight seal between the two by reason of the engagement of sealing ring 39 with spout 42. When lugs 44 have passed through notches 38 to a position below the flange 36, slight turning movement of the container causes the lugs to engage under the flange and thus to hold or lock the container to the dispenser inlet system.

The small chamber 60 in the dispenser base communicates with the dispenser feed lines and receives and passes liquid through the dispenser unit and hose 24 upon operation of the pump mechanism, assuming the dispenser to be in condition for operation. A port 62 in a wall of chamber 60 leads to a passage 70 which in turn communicates with the lower end of the pump barrel 90. A check valve 63 is normally held across port 62 by a compression spring 64, so as to allow flow of liquid from chamber 60 into passage 70 under pressure but to prevent flow in the opposite direction. Passage 70 also communicates with a passage 80 through a port 72 which is normally closed by a valve 74 under pressure from a spring 76. Passage 80 leads to the lower end of the conduit 22 in upright 14, and as shown in Fig. 1 passage 80 is enlarged between its ends to accommodate a flow meter 82 positioned there-across.

The meter 82 may be of any known type which will respond accurately to the flow of liquid therethrough. The meter shaft 83 is connected by suitable gearing 84 with an elongated shaft 85 which extends vertically through conduit 22 and connects with a meter indicator 86 mounted on the top of upright 14. The indicator 86 also may be of any known type suitable for the purpose. It preferably is constructed so as to indicate quarts and tenths of quarts and to give an audible signal when each quart of oil has been metered, as by means of a striker 87 (Fig. 1). It will be noted that the gearing 84 between the meter 82 and the meter indicator shaft 85 is immersed in and constantly lubricated by the oil in passage 80.

The discharge of liquid from an attached container A through the dispenser is effected by manipulation of pump mechanism working in the pump barrel 90 forming upright 12. A piston 91 fits closely inside of barrel 90 and has secured thereto a cylindrical barrel 92, of smaller diameter than barrel 90. Barrel 92 in turn is secured to a tube 93 extending upwardly toward a reciprocable pump handle 94. A coupling member 95 is provided by which to connect tube 93 with handle 94. In order that the pumping may be effected more easily, or at a slower or more readily controlled rate, a secondary pump mechanism is incorporated with the mechanism just described, this secondary mechanism including a piston 96 fitting inside of the smaller barrel 92 to reciprocate therein and a pump rod 97 connected with piston 96 and extending through tube 93 to a point of direct connection with handle 94. Piston 91 is made hollow so that liquid may enter into barrel 92 therethrough. The coupling device 95 is so constructed that the pump handle 94 may be connected therewith or disconnected therefrom at will, thereby allowing the operator of the dispenser to reciprocate all of the movable pump parts and pump from the larger barrel 90 when the coupling and handle are connected, or to reciprocate rod 97 and piston 96 alone and pump from the smaller barrel 92 when the coupling and handle are disconnected. A flange 98 on coupling 95 is notched, as at 98*a*, to accommodate tongues 99 carried by handle 94, and the connection of handle 94 with piston 91 is effected by passing the tongues 99 downwardly through the notches 98*a* and then turning the handle so that the tongues engage beneath flange 98. In this condition the handle and the coupling 95 are connected together for simultaneous movement, while when the tongues 99 are disengaged from the coupling 95, the handle 94, rod 97 and piston 96 are freed from con-

nection with the coupling 95 and are movable independently thereof. When so freed, coupling 95 may be moved downward to interengage its lower flange 101 with lugs 101*a* on the pump head, thereby holding the primary pump in fixed position during operation of the smaller pump.

The chamber 60 below the liquid inlet system need be large enough only to accommodate a float-controlled valve mechanism located therein; that is to say, chamber 60 is so small that no substantial amount of oil can be dispensed therefrom unless oil is continuously supplied thereinto, as from an attached supply container A. As shown in Fig. 1 and Fig. 7, the structure defining port 62 presents an upwardly facing valve seat 65, and a valve 66 secured to a swinging arm 67 in chamber 60 is adapted to move by gravity onto seat 65 when a float 68, also secured to arm 67, allows such movement. When a container A having oil therein is attached to the inlet system 30, chamber 60 is full of oil and float 68 holds arm 67 and valve 66 in a position substantially as shown in Fig. 1, thus allowing oil to pass through port 62 in the direction of the pump. When the contents of an attached supply container A have been exhausted, and before the level of liquid in chamber A recedes to port 62, arm 67 drops by gravity and valve 66 assumes a position blocking further flow of liquid from chamber 60 until another supply container with liquid therein has been attached to the dispenser inlet system.

As seen more clearly in Fig. 7, valve 66, when closed, abuts against the check valve 63 in such a manner that both of these valves cannot be closed at the same time. In this way vacuum locking of the float-controlled valve is prevented, for it is always possible to pass a minute increment of liquid through the two valves upon reversal of the pump pressure, thus equalizing pressure conditions thereon.

When the supply containers A are made of metal or other opaque material their contents are invisible, yet it is desirable that the quality of oil to be dispensed be always apparent to an observer. It is also desirable that the amount of oil in an attached supply container be indicated at all times; otherwise, delays in service might result from failure to keep on the dispenser, or ready for attachment thereto, a supply container holding enough oil for a normal dispensation. According to the illustrated embodiment of our invention, the appearance and approximate quantity of oil in an attached supply container are made apparent at all times by providing the dispenser itself with a gauge system which shows the liquid to be dispensed and indicates the level of liquid in the attached container. For example, the upright 14 is provided with an outer, transparent wall 100 which is arranged in spaced relation to the feed conduit 22 so as to provide a vertically elongated annular chamber 102 therebetween. Chamber 102 is vented through openings 103 near the top of the upright. At its lower end it communicates with chamber 60 through a passage 104. It will be understood that when a supply container A is attached to the dispenser, liquid may flow through passage 104 into chamber 102 under the pressure of liquid in the container itself, so that the level of liquid in chamber 102 will correspond to the level of liquid in the attached supply container.

It will be further understood, however, that removal of the supply container before its contents were exhausted might allow liquid from chamber 102 to spill out of the inlet throat. This is avoided by the provision of valve means in passage 104, which operate to close the passage when a container is removed from the dispenser, together with means for automatically opening such valve means when a supply container is attached to the dispenser. For example, as shown in Figs. 1, 4, 5 and 6, a slide 110 having a port 111 therein is positioned across the passage 104. Slide 110 carries a flap valve 112 which normally lies across port 111 so as to prevent the downward flow of oil therethrough. The flap valve has an upstanding finger 113 thereon, and also fingers 114 which limit its swinging movement. In front of finger 113 is a spring pin 115 extending transversely across the passage in a fixed position. A compression spring 116 tends to hold the slide 110 and the valve 112 in a position in which finger 113 is free from engagement with pin 115, and in this position the flap valve closes port 111 and keeps oil from flowing out of the transparent chamber 102. When, however, the slide 110 is moved against spring 116, finger 113 engages pin 115, and further movement of the slide results in the pin acting upon finger 113 and swinging the flap valve to substantially the dotted line position shown in Fig. 4. This sliding movement of the parts against spring 116 is effected by the action of a reciprocable member 120 which abuts at one end against a lug 117 depending from slide 110 and which at its other end carries a cam 122 in the path of movement of the supply container outlet spout 42. As seen in Fig. 1, when a supply container A is attached to the dispenser the lower end of its outlet spout 42 engages cam 122 and thus pushes member 120 to the left. Member 120 in turn moves lug 117 and slide 110 to the left in opposititon to spring 116, thereby causing valve 112 to be lifted away from port 111 and establishing communication between chamber 102 and chamber 60 through passage 104. When the supply container is removed, cam 122 is freed of constraint, so that spring 116 moves slide 110 and member 120 to the right and allows valve 112 to resume its closed position.

The delivery hose 24 of the dispenser terminates in a valved nozzle 25, which may be of various forms but preferably is constructed substantially as shown in Fig. 10 of the drawings, so as to be automatically operative but at the same time to keep the hose and nozzle full of oil and minimize dripping from the nozzle end. The nozzle body 130 is tubular in shape and at its end is formed with an outlet opening 131. The end wall defining opening 131 has an inwardly facing seat 132 for a valve 133. The valve 133 is secured to the end of a plunger 134 which in turn is connected to a piston 135 movable within a cylindrical portion of the nozzle body. A compression spring 136 bears against piston 135 and normally holds valve 133 in closed position. A passage 137 leads from the delivery hose into the nozzle at a point between piston 135 and valve 133, and the cross-sectional area of piston 135 is such that when pressure is applied to liquid in the nozzle the pressure tends to move the piston against spring 136 so as to unseat the valve, thereby causing the discharge of liquid from the nozzle. The nozzle may be locked or restricted against this movement of piston 135 by a compression spring 143 and a pin 138 positioned in alignment with a pin 139 secured to the piston. Pin 138 is held in a position compressing spring 143 by means of a cam 140 secured to a pivoted

trigger 141, as shown in Fig. 10. When trigger 141 is turned about its pivot 142 to free pin 138, it becomes possible to open valve 133 in response to pressure from the dispenser pump. It will be understood that this new nozzle construction does not need to be held in place in order to be operative, yet it always prevents the discharge of liquid from the nozzle, by dripping or otherwise, except under positive pressure from the pump mechanism hereinabove described.

The illustrated nozzle construction also prevents the admission of air or other fluid into the system through the nozzle opening. This is accomplished by means of a check valve 144 which normally is held across a port 145 in a plate 146 by means of a compression spring 147. The valve 144 permits the passage of liquid through port 145 under pressure from the dispenser pump, but it prevents passage of liquid or other fluid through the nozzle in the opposite direction.

Another important feature of the illustrated embodiment, as shown in Fig. 1, resides in the provision of supply containers A which cooperate with the new portable dispensers substantially as hereinabove described, which are refillable and reusable over and over again, and which at the same time give effective protection against fraudulent substitution of unauthorized brands or grades of oil by dishonest service station attendants. The illustrated construction prevents unauthorized refilling of the containers in any manner.

Refilling through the outlet 40 on the container bottom wall is prevented as follows: The spout 42 communicates with the inside of the container through a circuitous passage defined by the upper end 150 of the spout, an annular partition 151 adjacent thereto and parts 152 and 153 of the container bottom wall. Ports 154 lead from the inside of the container into this circuitous passage, and a check valve 155 is provided for each of these ports so as normally to remain in open position under the force of gravity or of oil flowing downwardly through the ports. If, however, the container is inverted, or if an attempt is made to force liquid into the container through the spout 42, then the check valves 155 fall across the ports 154 and prevent entrance of liquid into the container. Furthermore, the partition 151 prevents the insertion of a wire or other tool through the spout 42 so as to move the check valves 155 to open position.

The bottom, side and top walls of the container define a closed chamber into which oil can be introduced only through a special filling inlet 160. This inlet is preferably constructed to cooperate only with a special filling nozzle of an authorized oil tank pump, substantially as disclosed in United States Letters Patent No. 1,984,005 of Marvin S. Young. The container A thus is adapted to be refilled only from an authorized tank equipped with such a cooperating filling nozzle and containing an authorized brand and grade of oil.

An indicating device 170, having a float 172 depending into the container A, may be provided on the container top wall to show when the container has been completely filled. This device, however, does not permit filling of the container therethrough.

The apparatus herein described is prepared for operation by attaching a full supply container to the inlet system 30, or otherwise supplying oil into chamber 60, and manipulating the pump handle 94 until all air has been discharged from the system and the dispenser feed lines, delivery hose and nozzle are entirely full of oil. After this the dispenser itself remains substantially full of oil and ready for service at all times.

In the use of the apparatus a container A holding oil of the authorized brand and grade is simply pushed downwardly and turned on the dispenser inlet system, whereupon the entire unit with the supply container thereon may be carried to any desired location for the delivery of an ordered amount of oil. The act of attaching the container to the dispenser opens the container valve 48 and the level gauge valve 112 and causes oil to fill chamber 60, whereupon float 68 rises and opens valve 66. To dispense a desired amount of oil into the crankcase of an automobile, the dispenser nozzle 25 is placed in the crank case filler pipe, with the trigger 141 turned to free pin 138, and the pump handle 94 is reciprocated until the desired amount of oil has been dispensed. Each increment of oil passing through the dispenser is registered by the meter 82 and recorded on the meter gauge 86. The pumping rate may be increased by connecting the pump handle 94 with coupling 95, or decreased by disconnecting the handle from coupling 95 so that only the smaller pump piston 96 is operative. As soon as the desired amount of oil has been recorded on the meter gauge, operation of the pump is discontinued, and flow of oil from the nozzle 25 immediately ceases. The nozzle may then be replaced in the socket 27, and the unit may be carried to another location for another dispensing operation.

The meter gauge 86 always can be seen by both the service station attendant and the purchaser of the oil. The appearance of the oil is evident from a glance through the transparent wall 100, as well as the level of oil in the attached container. When this level becomes low, or at any other time, the attached container can be removed, refilled and replaced or substituted by another full supply container, without in any manner affecting the accuracy of the dispensing operations. If the dispenser pump is operated until an attached container has been completely emptied, this condition is evidenced immediately by inability to continue manipulation of the pump; for when an attached container has been emptied the float 68 drops to a position where valve 66 closes port 62 and prevents further passage of oil therethrough under pump suction. It is then necessary only to remove the emptied container and replace it by a full container, whereupon the dispensing operation can be continued with complete assurance of delivering an accurately determined amount of oil.

It will therefore be apparent that the apparatus provided by this invention ensures accurate deliveries of oil as ordered by the purchasers without waste or variation of amounts due to changing conditions, and in a simple, convenient and economical manner. The dispensing units with supply containers thereon are small and light enough to be lifted and carried readily and to be placed at any desired location for a dispensing operation, and they are independent of bulky supply containers—hence their practicability for service station operations. In addition, effective protection is provided against unauthorized substitution of inferior brands or grades of oil, because both the supply containers and the oil being dispensed are visible to purchasers; the containers are adapted to be refilled only in accordance with an authorized system; and the dispensers cannot

be operated except when cooperating supply containers holding oil are attached thereto.

Although we have illustrated and described numerous new features and details of construction and operation in reference to a particular embodiment of our invention, it will be understood that various changes, additions, alterations and omissions can be made in other embodiments while still utilizing new and useful contributions of our disclosure. We therefore desire that our invention be accorded a scope fully commensurate with its novel contributions to the art, as limited only by the fair requirements of the appended claims.

We claim:

1. In a portable liquid dispenser for dispensing lubricant or the like from cooperating portable liquid supply containers, a portable carriage comprising a base and uprights extending vertically from said base, one of said uprights comprising a pump barrel having pumping means movable therein, another of said uprights comprising a vertical conduit to conduct liquid from the dispenser and having a delivery hose connected therewith, said base having a liquid inlet system including means for attaching and sealing a cooperating supply container thereto and means for opening such container to permit flow therefrom into and through the base, conduits in said base connecting said inlet system with said pump barrel and the aforesaid conduit and valve means in said conduits to prevent the flow of liquid therefrom toward said inlet system upon operation of said pumping means.

2. In a portable liquid dispenser for dispensing lubricant or the like, a portable carriage comprising a base and uprights extending vertically from said base in spaced relation, one of said uprights comprising a pump barrel having pumping means movable therein, the other of said uprights comprising a vertical conduit to conduct liquid from the dispenser and having a delivery hose connected therewith, said base having a liquid inlet system conduits in said base connecting said inlet system with said pump barrel and the aforesaid conduit, and valve means in said conduits to prevent the flow of liquid therefrom toward said inlet system upon operation of said pumping means.

3. In a portable liquid dispenser for dispensing lubricant or the like from cooperating portable liquid supply containers, a portable carriage comprising a base, two spaced uprights extending vertically from said base near opposite ends thereof and a handle bridging the space between said uprights near their upper ends, one of said uprights comprising a pump, the other of said uprights comprising a conduit to conduct liquid from the dispenser and having a delivery hose secured thereto in communication with the upper end of said conduit, said base having a liquid inlet system between said uprights, including means for attaching and sealing a supply container thereto and means for opening such container to permit flow therefrom into and through the base, a valve chamber below said inlet system, liquid feed passages connecting said chamber with said pump and said conduit, a flow meter connected across one of said passages to meter liquid flowing into said conduit, valve means in said feed passages to prevent the flow of liquid therefrom toward said inlet system upon operation of said pump, and valve means in said chamber operative to prevent the discharge of liquid from the dispenser when a supply container attached to said inlet system has been emptied.

4. In a portable liquid dispenser for dispensing lubricant or the like from cooperating portable liquid supply containers, a portable carriage comprising a base, uprights extending vertically from said base and a handle secured to at least one of said uprights, one of said uprights comprising a pump, another of said uprights comprising a conduit to conduct liquid from the dispenser and having a delivery hose secured thereto in communication with its upper end, said base having a liquid inlet system, including means for attaching and sealing a supply container thereto and means for opening such container to permit flow therefrom into and through the base, liquid feed passages connecting said inlet system with said pump and said conduit, a flow meter connected across one of said passages, and valve means in said passages to prevent the flow of liquid therefrom toward said inlet system upon operation of said pump, said pump comprising alternatively operable pumping means for pumping liquid through the dispenser at different rates.

5. In a portable liquid dispenser for dispensing lubricant or the like from portable liquid supply containers, a portable carriage comprising a base and uprights extending vertically from said base, one of said uprights comprising a pump barrel having reciprocable pumping means therein connected with a pump handle thereabove, another of said uprights comprising a conduit to conduct liquid from the dispenser and having a delivery hose secured thereto in communication with the upper end of said conduit, said hose terminating in a valved discharge nozzle, said base having a liquid inlet system, including means for attaching and sealing a supply container thereto to permit flow from such container into the base, liquid feed passages connecting said inlet system with said pump barrel and said conduit, a flow meter in one of said passages to meter liquid flowing into said conduit, valve means in said passages to prevent the flow of liquid therefrom into said chamber upon reciprocation of said pumping means, meter indicating means mounted on said other upright, and means extending through said other upright to connect said meter with said indicating means.

6. In a portable liquid dispenser for dispensing lubricant or the like from portable liquid supply containers, a portable carriage comprising a base and spaced uprights extending vertically from said base near opposite ends thereof, one of said uprights comprising a pump barrel having reciprocable pumping means therein connected with a pump handle thereabove, the other of said uprights comprising a conduit to conduct liquid from the dispenser and having a delivery hose secured thereto in communication with the upper end of said conduit, said hose terminating in a valved discharge nozzle, said base having a liquid inlet system between said uprights, including means for attaching and sealing a supply container thereto to permit flow from such container into the base, a valve chamber below said inlet system, liquid feed passages connecting said chamber with said pump barrel and said conduit, a flow meter in one of said passages to meter liquid flowing from the dispenser, valve means in said passages to prevent the flow of liquid therefrom into said chamber upon reciprocation of said pumping means, meter indicating means mounted on said other upright, means extending through said other upright to connect said meter

with said indicating means, a valve in said valve chamber, means operative to close said valve and prevent the discharge of liquid from said chamber when a supply container attached to said inlet system has been emptied by operation of said pump, said other upright having a transparent wall surrounding said vertical conduit and forming a space therebetween, a passage for liquid connecting said space with said chamber, valve means for closing said passage and means operative when a supply container is attached to said inlet system for holding said last-recited valve means in open position whereby to admit liquid into said space and indicate the level of liquid in such attached container by the level of liquid in said space.

7. In a portable liquid dispenser for dispensing lubricant or the like from portable liquid supply containers, a portable carriage comprising a base and uprights extending vertically from said base, one of said uprights comprising a pump barrel having reciprocable pumping means therein connected with a pump handle thereabove, another of said uprights comprising a vertical conduit to conduct liquid from the dispenser and having a delivery hose secured thereto in communication with the upper end of said conduit, said base having a liquid inlet system including means for attaching and sealing a supply container in dispensing relation thereto, and liquid feed passages connecting said inlet system with said pump barrel and said conduit, said pumping means comprising a large piston reciprocable in said barrel, a hollow pump rod including a smaller pump barrel section connected with said large piston, a smaller piston reciprocable in said smaller barrel, a pump rod connecting said smaller piston with said pump handle and extending through said hollow pump rod, and means for releasably connecting said handle with said hollow pump rod, whereby to pump liquid from a supply container attached to the dispenser at a faster or slower rate according to whether said pump handle is connected with or disconnected from said hollow pump rod.

8. A portable liquid dispenser comprising a portable carriage having mounted thereon means for releasably attaching thereto normally separate portable liquid supply containers, means for opening each such container when attached to permit flow therefrom through the dispenser, means for discharging liquid from such attached and communicating container through the dispenser and directly to a point of dispensation, gauge means mounted on the carriage for indicating the quantity of liquid in an attached container and means for admitting liquid from the dispenser to said gauge means under the pressure of liquid in such attached container.

9. A portable liquid dispenser comprising a portable carriage having mounted thereon a liquid inlet throat, means adjacent said throat for holding and sealing a normally separate portable liquid supply container to the dispenser to permit the discharge of liquid therefrom through the dispenser, a small control chamber in said carriage below said throat, a delivery hose secured at one end to the dispenser, liquid feed lines leading from said chamber to said hose, a gauge tube projecting above said throat and separated from said feed lines, and a passage for liquid connecting said chamber with the lower end of said tube.

10. A portable liquid dispenser comprising a portable carriage having mounted thereon means for releasably attaching thereto normally separate portable liquid supply containers, means for opening each such container when attached to establish flow between the same and the dispenser, means for discharging liquid from such attached container through the dispenser and directly to a point of dispensation, gauge means for indicating the quantity of liquid in such attached container, a passage for admitting liquid to said gauge means under the pressure of liquid in such attached container, and means operative to close said passage upon removal of such container from the dispenser.

11. A portable liquid dispenser comprising a portable carriage having mounted thereon means for releasably attaching in dispensing relation thereto normally separate portable liquid supply containers, means for discharging liquid from each such attached container through the dispenser and directly to a point of dispensation, gauge means for indicating the quantity of liquid in such attached container, a passage for admitting liquid to said gauge means under the pressure of liquid in such attached container, and means held in open position by such attached container for automatically closing said passage upon removal of such container from the dispenser.

12. In a portable liquid dispenser for dispensing metered quantities of lubricant or the like from portable supply containers attached thereto, said dispenser comprising a liquid inlet throat, a small chamber below said throat, means for removably holding and sealing a portable supply container in dispensing relation to said throat, feed lines connected with said chamber, and means for discharging liquid from such attached container through said chamber and feed lines, a gauge tube projecting above said throat and separated from said feed lines, a passage for liquid connecting said chamber with said gauge tube, a valve movable across said passage to prevent flow therethrough, means normally holding said valve in closed position, and shiftable means responsive to the attachment of such container to said throat for opening said valve.

13. In a portable liquid dispenser for dispensing lubricant or the like from cooperating portable supply containers attached thereto, comprising an inlet system, having means for releasably holding and sealing such a supply container in dispensing relation to the dispenser, a small feed chamber for receiving and passing liquid from such container, feed lines connected with said chamber, and means connected with said feed lines for discharging liquid from such container through said chamber and feed lines, a gauge tube separated from said feed lines and projecting above said inlet system, a passage for liquid connecting said gauge tube with said chamber, a valve movable in said passage to block flow of liquid therethrough, means for holding said valve in open position when such a container is attached to the dispenser, and means for rendering said holding means inoperative when such container is removed.

14. A portable liquid dispenser for dispensing lubricant or the like comprising a portable carriage having mounted thereon means for releasably attaching thereto normally separate portable liquid supply containers, means for opening each such container when attached to permit flow between the same and the dispenser and means for discharging liquid from such attached and opened container through the dispenser, said attaching and opening means comprising ring means defin-

ing a liquid inlet throat and adapted to interfit with a liquid outlet spout fixed to said container, valve operating means adjacent said throat in position to open a valve in such spout, and resilient sealing means supported by said ring means in position to form a seal with such spout when the container is attached.

15. A portable liquid dispenser for dispensing lubricant or the like comprising a portable carriage having mounted thereon means for releasably attaching thereto normally separate portable liquid supply containers, means for opening each such container when attached to permit flow between the same and the dispenser and means for discharging liquid from such attached and opened container through the dispenser, said attaching and opening means comprising ring means defining a liquid inlet throat and adapted to interfit with a liquid outlet spout fixed to said container, valve operating means adjacent said throat in position to open a valve in such spout, and resilient sealing means supported by said ring means in position to form a seal with such spout when the container is attached, said ring means having fastening means thereon adapted to interengage with cooperating fastening means carried on such container to hold the latter in dispensing position.

16. A portable liquid supply container for cooperation with a portable dispenser of the character described, comprising container walls defining a closed liquid chamber, liquid outlet means associated with the bottom of the container and constructed to cooperate only with a complementary dispenser inlet system, said outlet means including means preventing the filling of the container therethrough, and liquid inlet means associated with the top of the container and operative to prevent filling of the container except in cooperation with a complementary container filling nozzle.

17. A portable liquid supply container for cooperation with a portable dispenser of the character described, comprising container walls defining a closed liquid chamber, a liquid inlet system associated with the top wall of the container to prevent refilling thereof except in cooperation with a complementary container filling nozzle and a liquid outlet system associated with the bottom wall of the container to allow delivery of the container contents into a cooperating dispenser, said outlet system comprising an outlet spout, valve means in said spout for closing the same, means normally holding said valve means in closed position and means constructed to interfit with complementary means on such dispenser to attach the container in dispensing relation thereto.

18. A portable liquid supply container for cooperation with a dispenser of the character described, comprising a liquid outlet associated with a wall of the container to cooperate with and allow delivery of the container contents through a cooperating dispenser inlet system, said outlet comprising an outlet spout adapted to interfit with an inlet throat of such inlet system when the container is attached to the dispenser in dispensing position, a valve within said spout normally closing the same and adapted to be opened by a part of such inlet system when the container is so attached, a fluid passage between said spout and the container, and means in said passage to prevent the introduction of liquid into the container through said spout.

19. A portable liquid supply container for lubricant or the like comprising a liquid outlet system associated with a wall of the container to cooperate with and allow delivery of the container contents through a cooperating dispenser inlet system, said outlet system comprising a spout projecting from said container wall to fit in a throat of such inlet system, fastening means adjacent said spout for interengagement with complementary fastening means on such inlet system, a valve seat adjacent the mouth of said spout, a valve adapted to rest on said seat and close said spout, and spring means for normally holding said valve in closed position.

20. A portable liquid supply container for lubricant or the like comprising walls defining a closed liquid chamber and a liquid outlet system associated with one of said walls to cooperate with and allow delivery of the container contents through a cooperating dispenser inlet system, said outlet system comprising a spout projecting from said container wall to interfit with a throat of such inlet system, liquid passages connecting said spout with said chamber, valve means normally closing the mouth of said spout and adapted to be opened when the container is attached to such inlet system, and valve means in said passages normally allowing flow of liquid into said spout, said last-recited valve means being operative to close said passages in response to flow of liquid toward said chamber from said spout.

21. A portable liquid supply container for lubricant or the like comprising walls defining a closed liquid chamber and a liquid outlet system associated with one of said walls to cooperate with and allow delivery of the container contents through a cooperating dispenser inlet system, said outlet system comprising a spout projecting from said container wall to interfit with a throat of such inlet system, liquid passages connecting said spout with said chamber, valve means normally closing the mouth of said spout and adapted to be opened when the container is attached to such inlet system, and valve means in said passages normally allowing flow of liquid into said spout, said last-recited valve means being operative to close said passages in response to flow of liquid toward said chamber from said spout, and obstructions in said outlet system for preventing access to said last-recited valve means through said spout.

22. In a portable liquid dispenser for dispensing lubricant or the like from portable liquid supply containers, a portable carriage having mounted thereon a liquid inlet system including means for attaching and sealing thereto a cooperating portable liquid supply container and means for opening such container to permit flow therefrom through the dispenser, liquid feed passages terminating in a delivery hose secured to the carriage, said hose having a discharge nozzle at its end, a pump connected with said passages to discharge liquid from such attached container and through the dispenser, valve means in said passages to prevent flow of liquid toward said inlet system under pressure from said pump, valve means in said nozzle normally preventing the discharge of liquid therefrom, and means in said nozzle responsive to fluid pressure from said pump for opening said nozzle valve means.

MARVIN S. YOUNG.
RAYMOND B. LEWTHWAITE.