

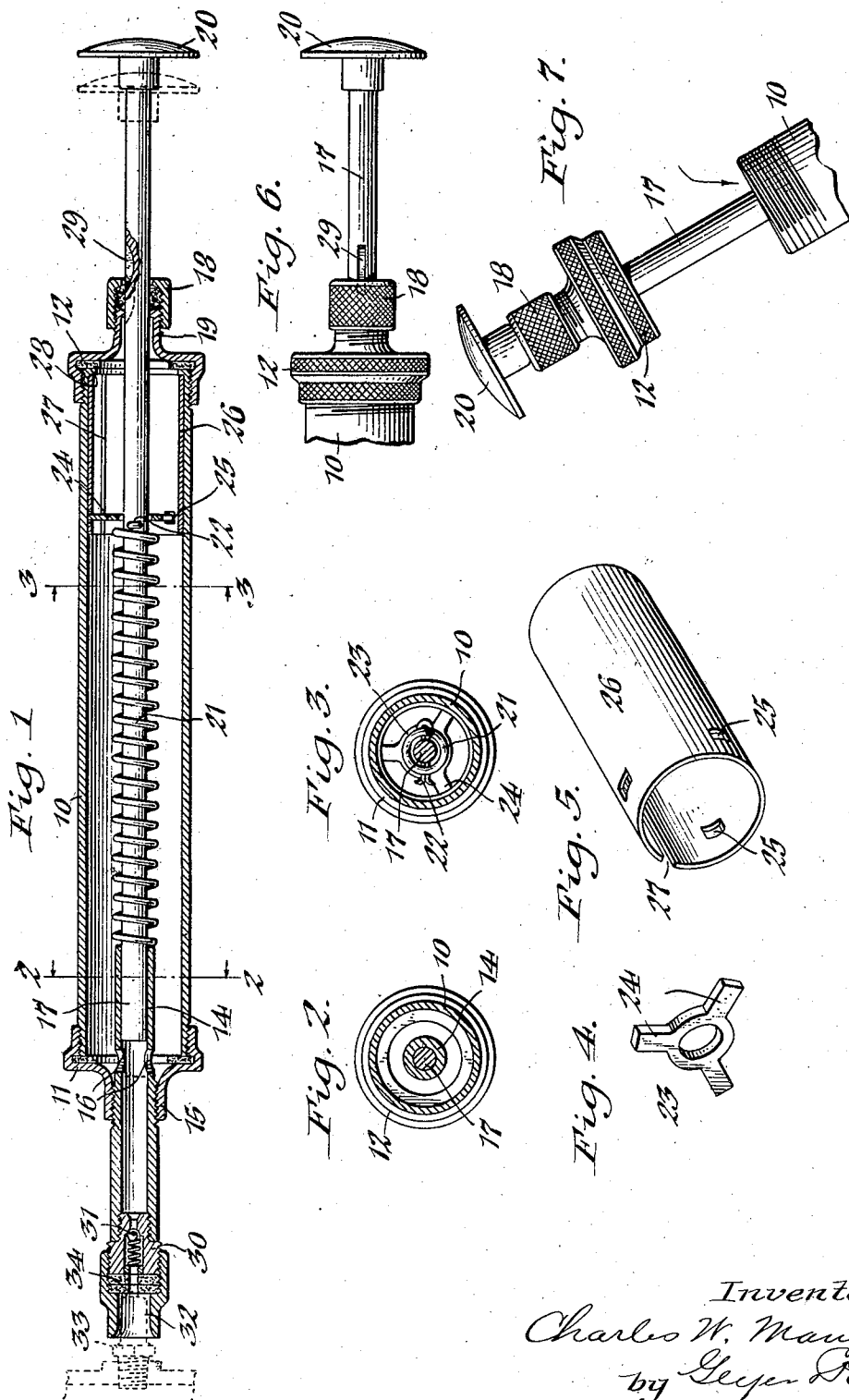
Jan. 6, 1925.

C. W. MANZEL

1,521,822

OIL GUN

Filed May 14, 1921



Inventor;  
Charles W. Manzel  
by *Geyer Popp*  
Attorneys.

## UNITED STATES PATENT OFFICE.

CHARLES W. MANZEL, OF BUFFALO, NEW YORK, ASSIGNOR TO THE BASSICK MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

## OIL GUN.

Application filed May 14, 1921. Serial No. 469,413.

*To all whom it may concern:*

Be it known that I, CHARLES W. MANZEL, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Oil Guns, of which the following is a specification.

This invention relates to a lubricating gun or pump for forcing oil into the various bearings of automotive vehicles, such as automobiles, although the same may also be used for lubricating other mechanisms.

One object of the invention is to provide an improved gun of this character which permits of conveniently delivering the lubricant to remote bearings or bearings usually difficult of access.

Another object is to provide an improved means for venting the oil chamber to insure proper working of the gun and at the same time prevent leakage of the lubricant from the same.

In the accompanying drawings: Figure 1 is a longitudinal section of an oil gun embodying the invention. Figures 2 and 3 are transverse sections on the correspondingly numbered lines in Fig. 1. Figures 4 and 5 are perspective views of the parts for holding the pump plunger in its normal retracted position. Figure 6 is a fragmentary elevation of the rear portion of the gun. Figure 7 is a fragmentary side elevation of the gun, showing the parts in position for filling the same.

Similar characters of reference indicate corresponding parts throughout the several views.

The body of the gun is cylindrical and preferably long and slender, as shown, forming an oil supply chamber 10 closed at its ends by screw caps or heads 11, 12.

Arranged axially in the front portion of the oil chamber and extending through the front cap 11 is a pump barrel or cylinder 14 of relatively small diameter, said cap preferably having an internally-threaded neck 15 into which the pump barrel is screwed. A pair of oil inlet ports 16 extending through the wall of the barrel on the inner side of the front cap, connect the barrel with the oil supply chamber 10. Sliding in the barrel is a plunger 17, its rear end passing through a stuffing box or nut 18 threaded on the neck 19 of the rear cap 12. The external rear portion of this plun-

ger serves as an operating rod and is provided with a convenient knob or handle 20 by which the forward stroke of said plunger is effected. Its return stroke is preferably effected by a suitable spring 21 surrounding the plunger-rod and bearing at one end against the rear end of the pump barrel 14 and at its other end against a transverse stop pin 22 secured to said rod. This spring is compressed on the forward stroke of the plunger and automatically returns the latter to its initial retracted position. The plunger uncovers the inlet ports 16 on reaching the limit of its return or suction stroke, allowing a charge of oil to flow from the supply chamber 10 into the barrel, and upon its forward stroke, the plunger first covers said ports and then expels the charge from the barrel.

The return stroke of the plunger is limited by the pin 22 on the plunger abutting against a spider 23, the arms 24 of which engage or interlock with openings 25 in a tube or sleeve 26 fitted within the rear end of the chamber 10. This tube is preferably split lengthwise, as shown at 27, and its rear end abuts against an inwardly-bent flange 28 formed at the corresponding end of the oil chamber. By thus splitting the tube, assembly and dismemberment of the parts is greatly facilitated. Before placing the split sleeve into the supply chamber 10, the same expands sufficiently to permit the arms of the spider 23 to be engaged with its holes 25. The sleeve is then compressed sufficiently to enter the oil chamber, whereby the spider is reliably interlocked with the sleeve.

In order to vent the supply chamber 10 and permit the pump of the gun to function properly, the rear portion of the plunger rod 17 is provided in its surface with a vent passage 29 preferably in the form of a comparatively narrow, shallow groove. The latter extends lengthwise of said rod and is of the proper length to bridge the packing in the nut 18 and adjacent portion of the neck of the cap 11 and permit air to enter through said vent passage into the oil chamber at a predetermined point of the return stroke of the plunger. In the normal retracted position of the latter, shown by full lines in Fig. 1, the front end of the vent passage is shut off from the supply chamber 10 by the packing in the nut 18 which seals

the rear end of said chamber, thereby preventing leakage of oil through said vent passage. After a charge of oil has been expelled from the pump barrel 14 by the forward stroke of the plunger, the latter, on being released, automatically returns, and before the plunger uncovers the ports 16 in said barrel, the vent passage 29 is in such a position as to connect the supply chamber 10 with the outer atmosphere, as shown by dotted lines in Fig. 1, thereby admitting air thereto. As soon as the plunger uncovers the ports 16, the atmospheric pressure in the supply chamber forces a charge of oil into the pump barrel which is expelled upon the next forward stroke of the plunger.

By this construction and arrangement, the pump is automatically vented, requires no special adjustments, and the pump barrel is normally charged with oil ready for use.

The vent-passage 29 is preferably provided with a curved or concave bottom extending to the surface of the plunger-rod, as shown in Fig. 1, to avoid the formation of abrupt ends or edges liable to catch on the packing in the nut 18 and tear or displace it.

The delivery end of the gun may be of any suitable construction, but the projecting front end of the pump barrel is preferably provided with a discharge nipple 30 containing a spring-pressed check valve 31 which closes toward said pump barrel to prevent the entrance of dust and the escape of oil from the barrel when the gun is not in use. Screwed or otherwise secured to this nipple is a forwardly-projecting guide nozzle or socket 32 which is adapted to fit over a feed nipple 33 carried by a bearing or other part to be lubricated. This guide nozzle is provided with a packing washer or gasket 34 of rubber or other appropriate material to form a reliable oil-tight seal between the feed nipple and the guide-nozzle of the gun.

To fill the gun with a supply of oil, the cap 12 is unscrewed from the oil chamber 10 and the gun held in the position shown in Fig. 6, said cap being slid to the rear end of the plunger rod to permit of conveniently filling said chamber.

In the use of this oil gun, the pump barrel 14, being normally charged ready for

use, as heretofore described, the guide nozzle 32 is passed over the feed nipple 33 and the plunger pushed forwardly to deliver the charge into the bearing. The pressure thus exerted against the plunger handle is transmitted through the oil column and the gun body to the packing gasket 34, which is thereby firmly pressed against the end of the feed nipple, producing a tight and reliable joint or seal and insuring the delivery of a full charge of oil into the bearing. When the forward pressure on the pump plunger is removed, the same automatically returns to its normal position, during which movement a new charge of oil is drawn into the pump barrel, as previously described.

This improved gun is simple in construction, reliable in operation and being sealed at both ends, can be carried about while filled with oil without danger of its leaking out.

I claim as my invention:

1. An oil gun, comprising a supply chamber, a pump barrel arranged therein and having a port communicating therewith, a plunger in said pump barrel extending through the rear end of said supply chamber, a return spring applied to said plunger, a split sleeve removably arranged in the rear portion of said chamber and having openings in its wall, and a spider having arms interlocking with said openings, said plunger having a stop arranged to abut against said spider.

2. An oil gun, comprising a supply chamber provided at its rear end with an inwardly-bent flange, a pump barrel arranged in said chamber and provided with an inlet port, a plunger in said barrel controlling said port and extending through said supply chamber, said plunger being provided within said chamber in rear of said pump barrel with a stop, a return spring applied to the plunger between said stop and the pump barrel, and means for limiting the return stroke of said plunger, including a sleeve removably arranged within said chamber and abutting against said flange, and a spider interlocking with said sleeve, said stop normally bearing against said spider.

CHARLES W. MANZEL.