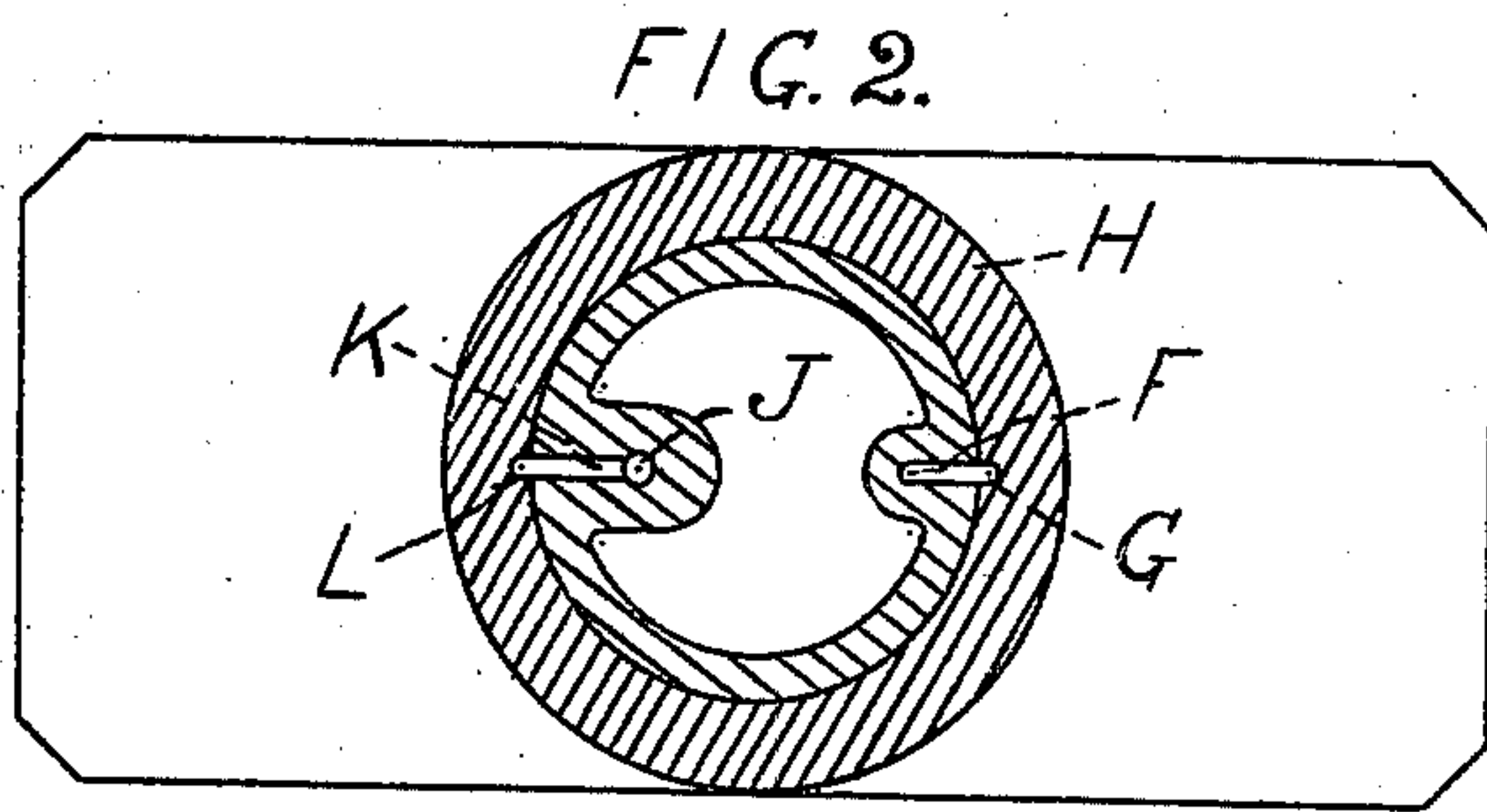
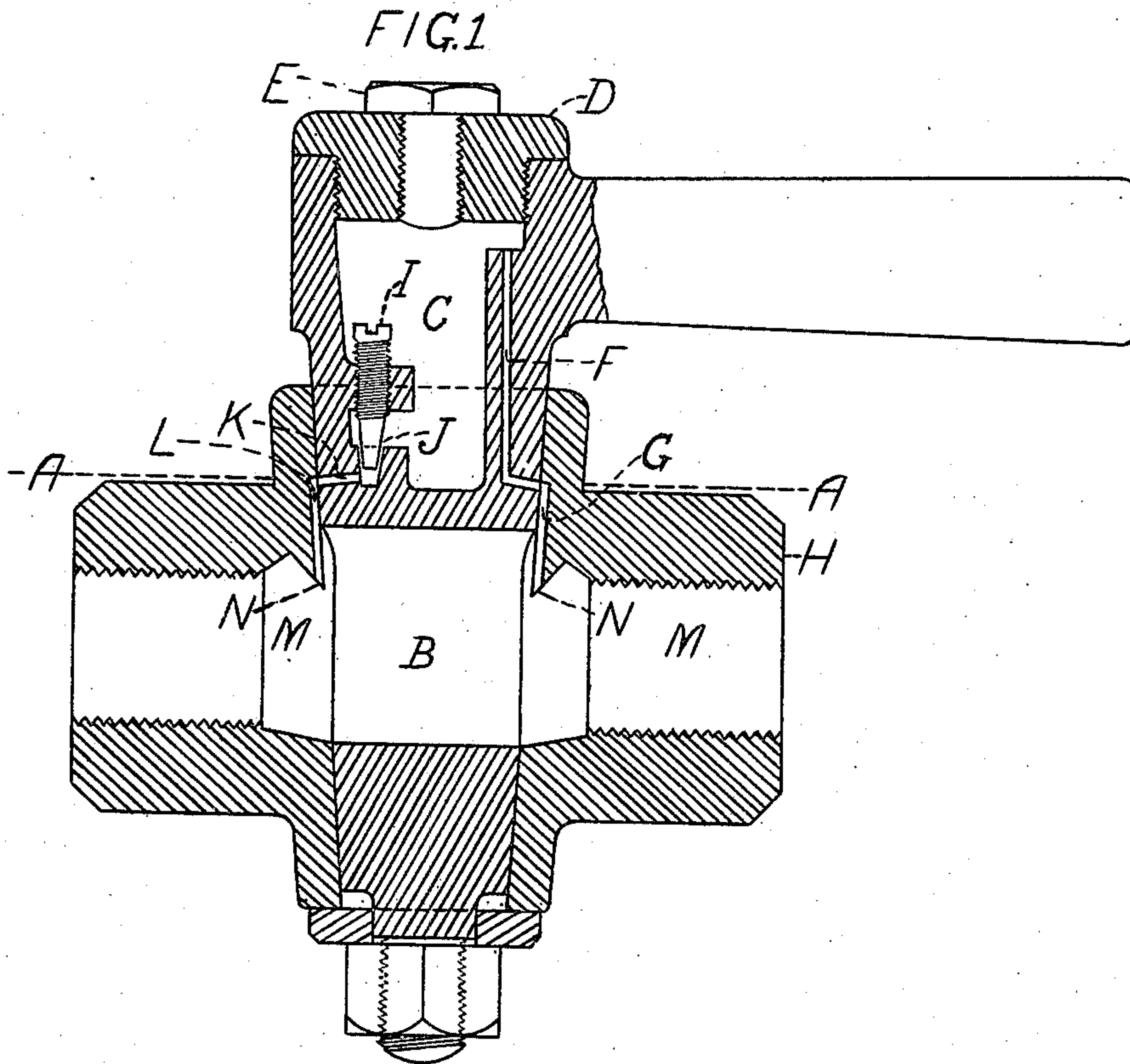


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VALVE.

APPLICATION FILED AUG. 6, 1909.

987,571.

Patented Mar. 21, 1911.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

ROBERT CHARLES GREEN, OF WINCHESTER, ENGLAND.

## VALVE.

987,571.

Specification of Letters Patent.

Patented Mar. 21, 1911.

Application filed August 6, 1909. Serial No. 511,627.

*To all whom it may concern:*

Be it known that I, ROBERT CHARLES GREEN, a citizen of Great Britain, residing at 1 Brassey road, Winchester, in the county of Hants and Kingdom of England, have invented certain new and useful Improvements in Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the type of stop-cock used in connection with a line of piping for air or other fluid pressure machines or apparatus in which the cock controls the admission of a lubricating medium into communicating relation with the air or other fluid as it passes to the machine or apparatus; and has for its object to effect the lubrication in an improved manner.

The invention consists in means whereby, when the cock is opened to a predetermined point, oil is permitted to flow continuously from the container into the full-way or passage way of the cock connecting the line of piping, and whereby the flow of oil is arrested when the cock is turned to a predetermined point in the direction of closing it.

Further the invention comprises means for putting the surface of the oil in the container into communication with the pressure in the full-way, and comprises also the use of a screw pin within the oil container by means of which the outflow of oil may be regulated, and also the combination of parts hereinafter described.

A stop-cock constructed according to a convenient form of my invention comprises a special oil chamber or container formed in or on the head of the plug of the cock, the head having a threaded opening to receive a threaded cover or cap on the top of said chamber, the said cover or cap having a threaded opening to receive a threaded plug, which can be removed when desired to refill the oil chamber, a port formed as a groove in one side of the shell of the cock communicating when the cock is turned on, with a port or passage formed in the side of the oil container, provided for the passage of air to the top of the same; a port or passage formed on the opposite side of the plug and a corresponding port formed as a groove in the shell of the cock through which the oil from the container, having equal pressure of air on the top and bottom, passes down

grooved projections into the fullway of the cock, and from thence to the machine, in the form of spray mixed with air. A small adjustable screw pin with coned bottom end in a coned seat is provided at the entrance of the aforesaid small oil passage to the fullway of the cock. The adjustment of this needle valve provides for any desired feed of oil from the container to the fullway of the cock through the groove provided in the shell of the cock, and therefore to the pipe line. A feature of the cock is, that no oil can be fed to the fullway of the cock, and therefore through the pipe to the machine, when the fluid supply to the machine is cut off by turning the cock, thus avoiding any collection of oil in the pipe or in the machine.

In order that the invention may be clearly understood I will now describe a convenient application of the same by reference to the drawings herewith of which:—

Figure 1 shows a central longitudinal sectional elevation of my improved cock, and Fig. 2 a sectional plan taken on the line A. A. in Fig. 1.

The plug B of the cock is provided with a recess C in the head, forming an oil chamber and fitted over the recess is a screw cap D, and in the cap D, a screw plug E, adapted for removal to refill the chamber C with oil. A passage F is provided in one side of the plug head communicating, when in a given position, with a groove G in the shell H of the cock.

Within the oil chamber C, I provide a needle valve I coned at the bottom end, and working in a corresponding conical recess J forming a seat for said needle valve. The adjustment of the needle valve allows of any desired flow of oil from the container C to pass through the passage K in the plug, when it is in a given position, into a groove L in the shell H of the cock, and thence into the fullway M of the cock, and into the piping to the machine.

The action of the whole is as follows:—When the cock is turned on the passage F in the plug B communicates with the groove G in the shell H of the cock and through this passage and groove the air from the pipe passes to the top of the oil container C; simultaneously the oil passage K is brought into communication with the groove L, and owing to the equal pressure of the fluid on both sides of the oil chamber, the oil's gravi-



tating force will cause the oil to pass through the passage K and the groove L into the fullway M of the cock, and from thence, in the form of spray mixed with air, to the machine. The amount of oil passed is regulated as described by the adjustment of the needle valve I in the seat J. When the cock is partially turned off the flow of oil to the machine is cut off, as the outlet from the passage K is not then opposite the groove L, and similarly the flow of air to the top of the oil container is stopped by reason of the passage F not being opposite the groove G. This will allow of the oil container being re-filled without stopping the flow of air through the cock.

The projections N. N are provided and grooved for the purpose of conducting the oil well into the fullway M. M of the cock, when the passage K is opposite the grooves L or G.

Having thus fully described my invention, what I claim therein and desire to secure by Letters Patent is:—

1. The combination of a valve casing provided with an air and an oil port, a plug having a hollow head forming an oil reservoir, said plug being provided with ports terminating at one end in said oil reservoir, and at their other ends so coöperating with said air and oil ports as to open communica-

tion between the main line piping and oil reservoir, when the valve is full open, and close communication when the valve is partly closed, a cap for said oil reservoir, said plug being also provided with a conical recess in communication with the oil port of said plug and forming a valve seat, and an adjustable conical needle valve coöperating with said conical recess, substantially as described.

2. The combination of a valve casing provided with an inlet and an outlet and having downwardly disposed internal projections within said inlet and outlet, said projections and casing being grooved to form an air port and an oil port respectively, a plug within said valve casing having a hollow head to form an oil reservoir, said plug having an oil port and an air port therein and so positioned relatively to the ports of said casing as to communicate therewith when the valve is full open and to be out of communication therewith when the valve is partly closed, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

ROBERT CHARLES GREEN.

Witnesses:

ARTHUR ERNEST COPELAND,  
LESTER FRANK BATH.