

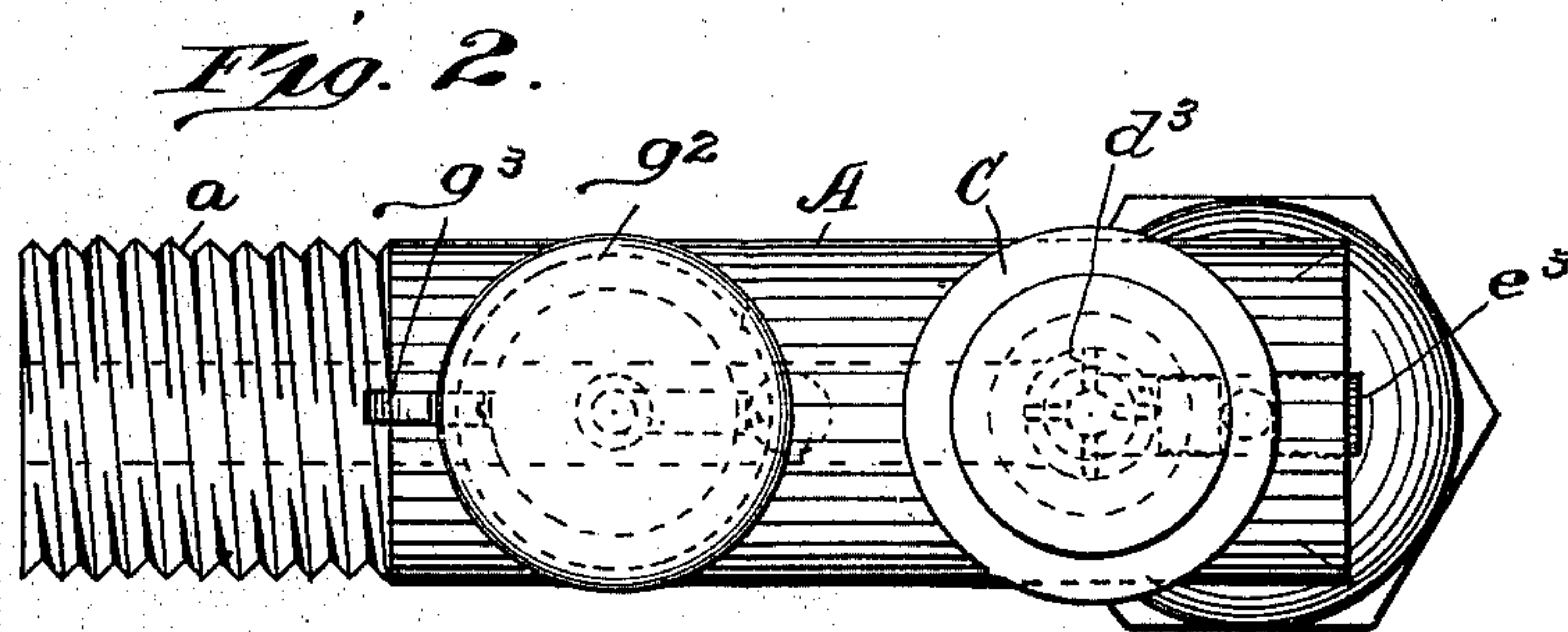
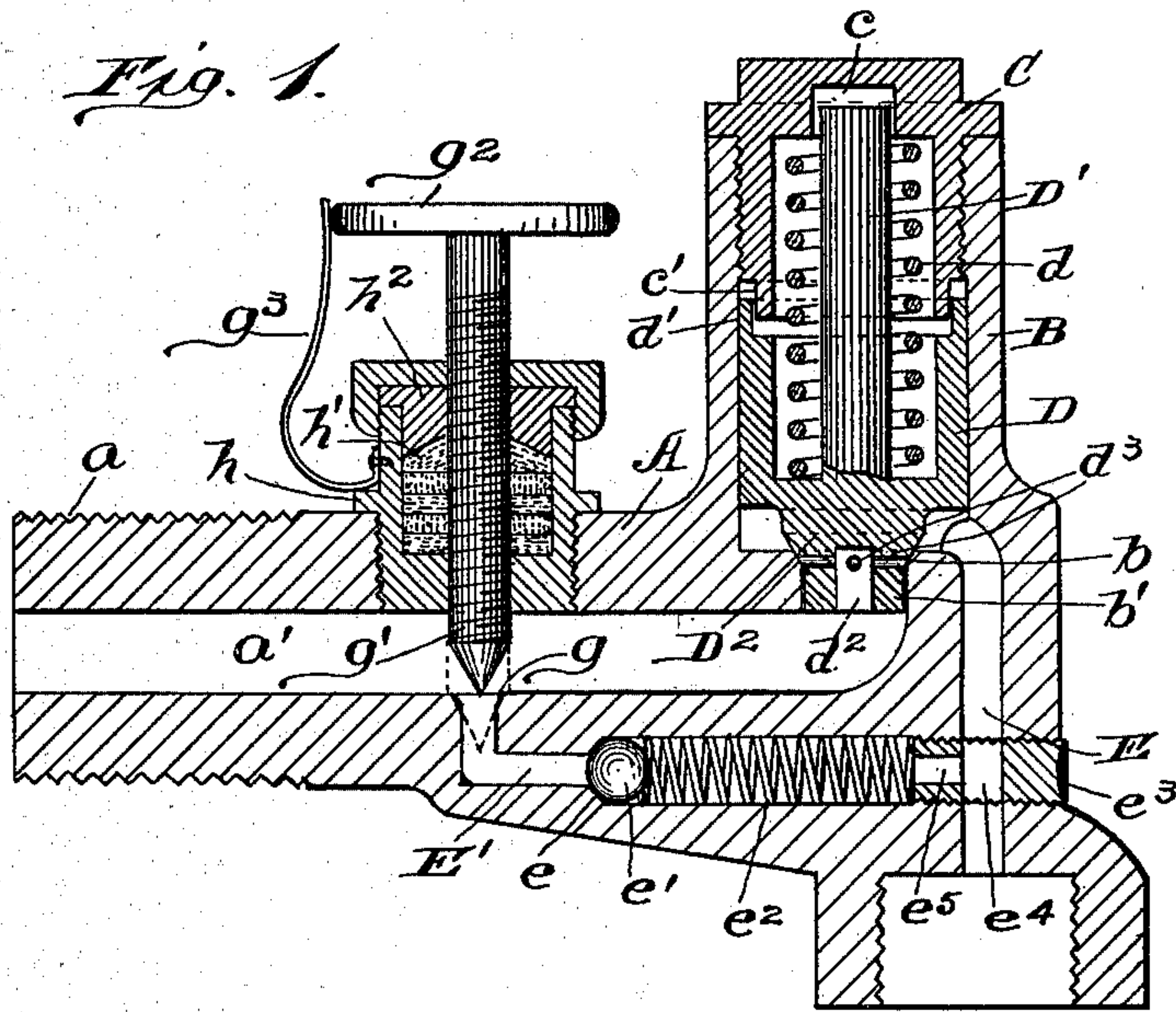
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PATENTED MAR. 17, 1903.

B. IVOR & J. S. WARD.
AUTOMATIC OIL FEED AND CHECK VALVE.

APPLICATION FILED JUNE 14, 1902.

NO MODEL.



Witnesses:

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UNITED STATES PATENT OFFICE.

BARRY IVOR AND JOHN S. WARD, OF CHICAGO, ILLINOIS.

AUTOMATIC OIL FEED AND CHECK VALVE.

SPECIFICATION forming part of Letters Patent No. 723,211, dated March 17, 1903.

Application filed June 14, 1902. Serial No. 111,683. (No model.)

To all whom it may concern:

Be it known that we, BARRY IVOR and JOHN S. WARD, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Oil Feed and Check Valves, of which the following is a specification.

This invention relates to improvements in an automatic supplying and controlling device, and while it is more especially intended to be used for feeding or supplying oil to parts of machinery to be lubricated, yet it is applicable for supplying and controlling the flow of steam, gas, water, and other fluids therethrough; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The principal object of our invention is to provide an oil feed and check valve which shall be simple and inexpensive in construction, strong, durable, and effective and positive in operation, and so made that it will be automatic.

Another object is to so construct the device as to afford two channels for supplying or feeding the liquid or fuel, so that in the event of one of the valves becoming inoperative by any reason the other may be used.

Other objects and advantages of the invention will be disclosed in the subjoined description and explanation.

In order to enable others skilled in the art to which our invention pertains to make and use the same, we will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a central vertical sectional view of an oil feed and check valve embodying one form of our invention. Fig. 2 is a plan view thereof.

Similar letters refer to like parts throughout the different views of the drawings.

A represents the casing, which may be made of any suitable size and material and preferably of the form shown in Fig. 1 of the drawings and is usually provided at one of its ends with external screw-threads *a* to engage a source of oil or other fluid supply. (Not shown.) Near its end opposite that on which

the screw-threads *a* are formed the casing is provided with a hollow extension B, which has its upper portion internally screw-threaded to receive a screw-threaded plug C, which is also hollow and has in its upper portion a recess *c*, as is clearly shown in Fig. 1 of the drawings. The horizontal portion of the casing A is provided with a channel *a'*, which communicates with the cavity or valve-chamber in the extension B, which chamber is provided in its bottom with a seat *b* for the valve D, which is preferably hollow and has an upwardly-extending stem D', the upper portion of which fits in the recess *c* of the screw-plug C, which closes the valve-chamber. Surrounding the stem D' is a spring *d*, which rests at one of its ends against the upper portion of the screw-plug C and at its other end against the bottom of the cavity in the upper portion of the valve D, as is shown. The lower portion of the screw-plug C is reduced to form an annular extension *c'*, around which loosely fits an annular extension *d'* on the upper portion of the valve D, thus permitting the vertical movement of the latter when under pressure. The lower portion of the valve D is provided with an extension D², which is tapered to fit the seat *b* in the opening *b'*, leading from the channel *a'* to the chamber of the said valve. The extension D² is provided with a cavity *d²* and a number of ports *d³*, leading therefrom to the exterior of said extension.

Leading from the lower portion of the valve-chamber in the extension B is an outlet-channel E, which intersects another channel E', extending from the end of the casing on which the extension B is located to about the middle of the horizontal portion of the casing and communicates therewith. As shown in Fig. 1 of the drawings, the channel E' is provided with a valve-seat *e* for a ball-valve *e'*, which is normally pressed against its seat by means of a spring *e²*, located in the enlarged portion of said channel. The outer end of the channel E' is closed by means of a screw-plug *e³*, which has a port *e⁴* in line with the channel E and another port or passage *e⁵* to communicate with the channel E', in which the spring *e²* is located and against the outer end of which the plug *e³* rests. The opening of the channel E', leading into the channel *a'*, is provided with a valve-seat *g* for a pin-valve

g' , which normally closes the channel E' , as shown by dotted lines in Fig. 1 of the drawings.

Located in the horizontal part of the casing A, directly above the valve-seat g , is a stuffing-box h , through which the pin-valve g' passes. The stuffing-box is provided with packing h' of any suitable material and a gland or follower h^2 to hold the packing in position. The upper end of the pin-valve g' is provided with a hand-wheel g^2 to be used for raising and lowering said valve, so as to open the channel E' , and the side of the stuffing-box h is provided with an upwardly-extending spring g^3 to rest against the periphery of the said hand-wheel to hold it in the desired position.

From the foregoing and by reference to the drawings it will be seen and clearly understood that when using the construction illustrated in Figs. 1 and 2 of the drawings the oil will enter the channel a' from the reservoir or source of supply and being under pressure will force the valve D from its seat b , thus allowing the oil or fluid to pass through the opening d^2 and ports d^3 in said valve into the chamber thereof, from whence it will pass through the outlet-channel E to the parts to be lubricated. Should the valve D fail to operate for any reason, the pin-valve g' may be raised from its seat g , as shown by continuous lines in Fig. 1, thus allowing the oil or fluid to pass into the channel E' , when by reason of the pressure of the oil the valve e' will be removed from its seat and allow the oil to pass therearound and through the channels e^5 and e^4 to the parts to be lubricated. It will be understood that when the pin-valve g' is in its seat, as shown by dotted lines in Fig. 1 of the drawings, the oil or fluid will pass around said valve, as it is smaller in diameter than the diameter of the channel a' in the casing.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an automatic oil feed and check valve, the combination with a casing having an inlet-channel provided with a valve-chamber at one of its ends and having an outlet-channel

leading from said valve-chamber, of a hollow plug in said chamber, a valve seated in said chamber and having on one of its ends a stem extending into the hollow of said plug and on its other end an extension projecting into the inner end of the inlet-channel, said extension having a cavity and ports, a spring surrounding the said stem and located between the valve and plug and extending into the cavity of the latter, substantially as described.

2. In an automatic oil feed and check valve, the combination with a casing having an inlet-channel provided with a valve-chamber at one of its ends and having an outlet-channel leading from said chamber, of a hollow plug located in the outer end of the chamber and provided with a reduced extension on its inner end, a hollow valve seated in said chamber and surrounding the said extension on the plug, said valve having at one of its ends a stem extending into the hollow of the plug and at its other end an extension projecting into the inner end of the inlet-channel and provided with a cavity and ports, a spring surrounding said valve-stem and located in the cavities of the plug and valve, substantially as described.

3. In an automatic oil feed and check valve, the combination with a casing having an inlet-channel provided with a valve-chamber at one of its ends and having an outlet-channel leading from said chamber, said casing also having a second channel communicating at one of its ends with the inlet-channel and at its other end with the outlet-channel, a spring-actuated valve seated in the chamber at the inner end of the inlet-channel and having an extension provided with a cavity and ports, said extension projecting into the inner end of the inlet-channel, a spring-actuated ball-valve seated in the second channel, and a pin-valve located in the casing so as to open and close the second channel, substantially as described.

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