

C. SENN & D. C. DEMAREST.
LUBRICATING VALVE.
APPLICATION FILED JAN. 24, 1910.

984,305.

Patented Feb. 14, 1911.

Fig. 1.

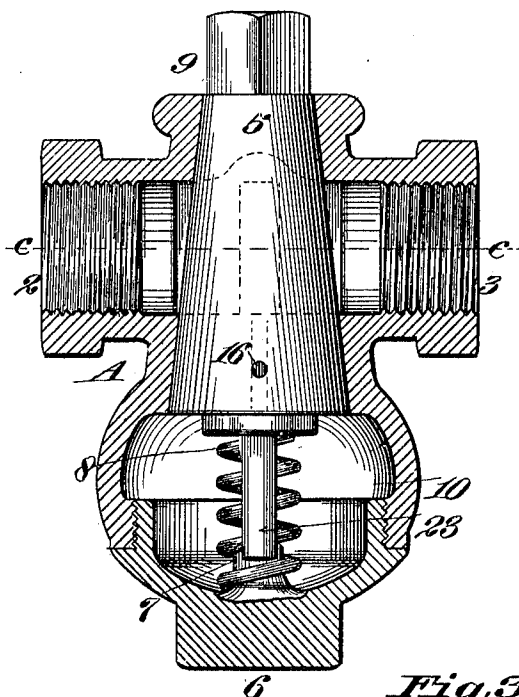


Fig. 2.

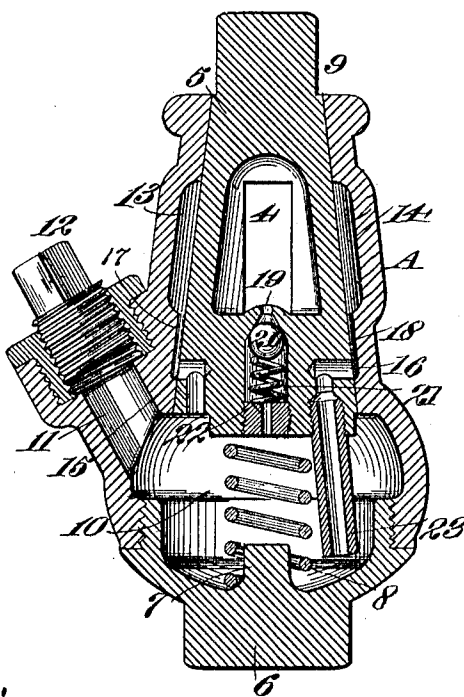
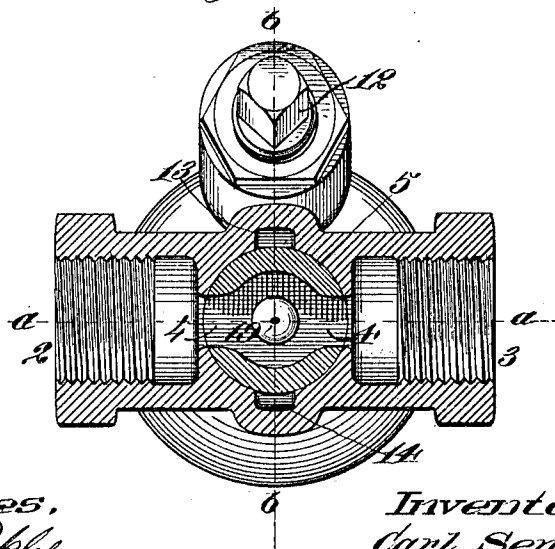


Fig. 3.



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UNITED STATES PATENT OFFICE.

CARL SENN AND DAVID C. DEMAREST, OF SAN FRANCISCO, CALIFORNIA.

LUBRICATING-VALVE.

984,305.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed January 24, 1910. Serial No. 539,760.

To all whom it may concern:

Be it known that we, CARL SENN and DAVID C. DEMAREST, both citizens of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Lubricating-Valves, of which the following is a specification.

This invention relates to combined air-cocks and lubricating valves.

The object of the invention is to provide a simple, cheap, practical lubricating and control valve for use on rock-drills and the like, whereby lubrication can take place automatically whenever the cock is turned to let air into the working cylinder of the machine operated, irrespective of whether the cock is right side up, or upside down, or in any other position.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a vertical section on line *a—*a**, Fig. 3, with plug in elevation. Fig. 2 is a vertical section on line *b—*b**, Fig. 3. Fig. 3 is a horizontal section on line *c—*c**, Fig. 1.

A represents a suitable casing having an inlet 2 and an outlet 3 registrable with the port 4 in the tapered plug valve 5. This plug is inserted into its seat in the casing through a suitable opening in one end thereof, which opening is normally closed by a screw cap 6. The cap has an internal projection 7 forming a seat and guide for a spring 8 which presses against the plug to maintain the latter firm on its seat. The valve is turned by attaching a handle or crank to its outer exposed end 9. The space 10 inclosed in the casing between the lower end of the plug and the cap 6, constitutes an oil chamber which may be filled from time to time through an opening 11 by removing the screw closer 12.

The casing A is provided with two opposed pockets 13—14 between ports 2—3, which pockets are registrable with the port 4 in the plug each time the air is turned off. One of these pockets, as 13, is adapted to deliver oil into port 4 when the valve is upside down, that is, when the cap end 6 is on top, and the pocket 14 is adapted to deliver oil into the port 4 when the valve is right side up, or as shown in the position of Fig. 1. To this end the valve has two ports

15—16 which are registrable with the corresponding pockets 13—14 through respective grooves 17—18 in the casing whenever the ports 2—3—4 are in communication. Whenever the valve is turned in this position pockets 13—14 are out of communication with the ports 2—3—4. The oil chamber 10, however, receives the full air pressure at such time through a port 19 in the plug, which latter is closed by a suitable valve, as 20, maintained normally seated by the spring 21; spring 21 being held in place and supported by the perforated screw plug 22 tapped into the valve. Port 15 opens directly into the oil chamber 10 near the lower end of the plug, while port 16 is continued by a tubular section 23 threaded into the plug, and which tubular section 23 extends nearly to the bottom of the oil chamber 10.

The operation is as follows: Whenever the valve is opened so as to bring the ports 2—3—4 into register and allow air to pass through, the air pressure is admitted into the oil chamber on top of the oil through port 19; valve 20 preventing the flow of oil into the port 4 in case the cock is inverted. This air pressure in the oil chamber acts to force the oil through one or the other of the ports 15 or 16, according to the position of the valve. If the valve is upright, as shown in Fig. 1, the air pressure in the chamber will cause a certain amount of oil to pass up through the tube 23 and into the pocket or chamber 14 in the casing. If the cock is inverted the oil which would now flood the port 15 would be forced into the pocket or chamber 13. When the valve is closed so as to shut off communication between the ports 2 and 3, port 4 is brought into communication with the pockets or chambers 13—14, and the oil in one or the other of these chambers, according to the position of the cock, will flow then by gravity into port 4 to be blown out through port 3 the next time the valve is opened.

This valve has been particularly gotten up to meet the demand for a valve which would lubricate no matter in what position the machine might be working. In rock-drilling it is quite common for the miners to place their drills so as to work upwardly or at an incline or downwardly, and in so doing it is very often necessary for the machine to be set in such a position that the oil reservoir would practically be at the

lowest point of the valve. By having the two oil chambers, each with its separate duct opening into the oil reservoir at different levels, it is quite immaterial what position the machine or valve stands in, because lubrication takes place just the same.

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

1. The combination of a valve casing having main ports and an oil reservoir, a plug valve having a port registrable with the main ports in the valve casing, said plug having means for admitting air pressure to the oil reservoir when the valve is turned to one position, and means connecting with the reservoir at different levels therein for admitting oil to said port from the reservoir when the valve is turned to another position irrespective of whether the valve is right side up or upside down.

2. The combination of a valve casing having main ports and an oil reservoir, a plug valve having a port registrable with the main ports in the valve casing, said plug having means for admitting air pressure to the oil reservoir when the valve is turned to one position, and means for admitting oil to said port from the reservoir when the valve is turned to another position irrespective of whether the valve is right side up or upside down, said last-named means including two separate chambers in the valve casing and registrable with the port in the plug when said port is out of register with said main ports in the casing, and said chambers having separate ports entering the reservoir at different levels therein.

3. The combination of a valve casing having main ports and an oil reservoir, a plug valve having a port registrable with the main ports in the valve casing, said plug having means for admitting air pressure to the oil reservoir when the valve is turned

to one position, and means for admitting oil to said port from the reservoir when the valve is turned to another position irrespective of whether the valve is right side up or upside down, said last-named means including two outlets for the oil at different levels in the oil chamber, and said outlets communicating with the said port in the plug when said port in the plug is out of register with said main ports in the casing.

4. The combination of a valve casing having main ports and an oil reservoir, a plug having a port registrable with said main ports in the valve casing, said plug having a normally closed valved port in communication with both the reservoir and said port in the plug, said casing and plug inclosing chambers which are out of communication with each other when the valve is open, said chambers communicating with the reservoir at different levels, and said chambers communicating with said port in the plug when the valve is closed.

5. In a lubricating valve, the combination with a casing having an oil reservoir, of a plug for controlling the flow of fluid through the valve casing, the plug having a main port, and also a valved port by which fluid pressure is admitted into the oil reservoir when the valve is open, the plug and casing cooperating to inclose separate oil chambers which open into the oil reservoir at different levels, and said chambers registrable with the main port in the plug when the valve is closed.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

CARL SENN.
DAVID C. DEMAREST.

Witnesses:

CHARLES EDELMAN,
F. W. FROST.