

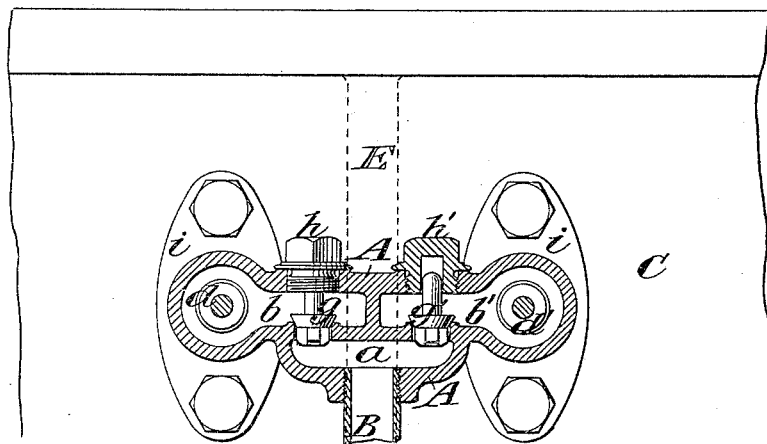
(No Model.)

W. F. GARRISON.  
LUBRICATOR.

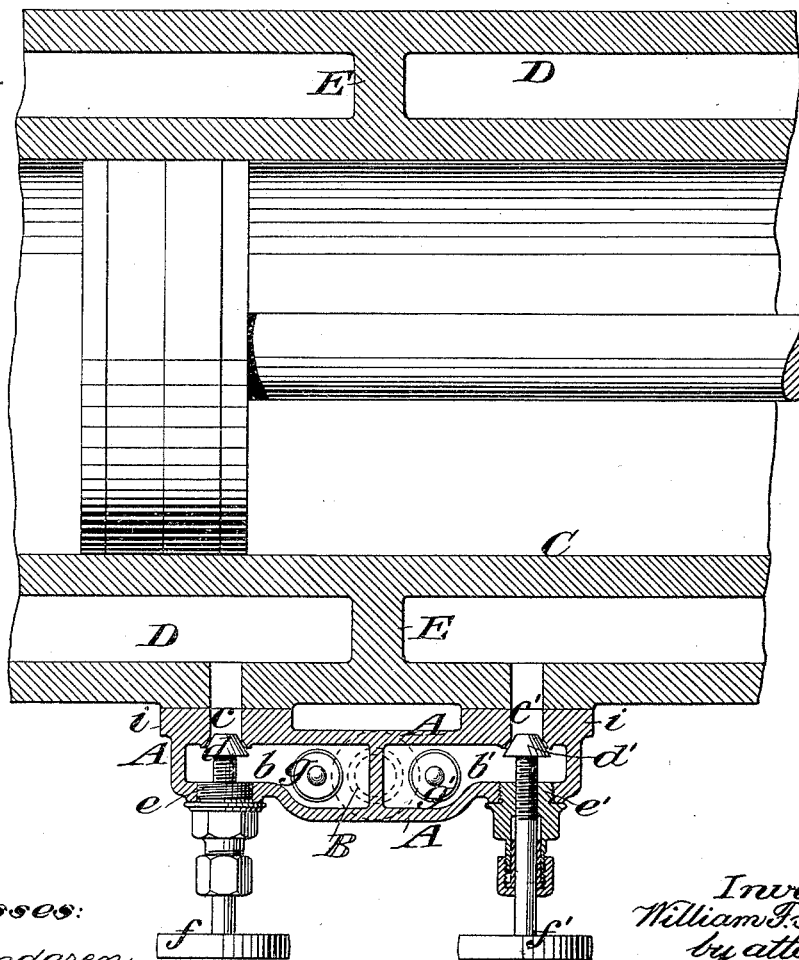
No. 491,477.

Patented Feb. 7, 1893.

*Fig. 1.*



*Fig. 2.*



Witnesses:  
C. Sundgren  
George Barry.

Inventor:  
William F. Garrison  
by attorneys  
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# UNITED STATES PATENT OFFICE.

WILLIAM F. GARRISON, OF BROOKLYN, NEW YORK, ASSIGNOR TO GUILD & GARRISON, OF SAME PLACE.

## LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 491,477, dated February 7, 1893.

Application filed November 10, 1892. Serial No. 451,486. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. GARRISON, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Lubricating Devices for Air and Gas Pumps, of which the following is a specification.

The object of this invention is to provide for the automatic supply in properly regulated quantities of the lubricating liquid employed for the cylinders of pumps for moving gaseous bodies.

The invention consists in the novel and very simple and compact device hereinafter described and claimed for that purpose.

Figure 1 represents a vertical section of my lubricating device and a portion of the side of a pump cylinder to which it is attached. Fig. 2 represents a horizontal section of my device and of part of a pump cylinder to which it is attached.

Similar letters of reference designate corresponding parts in both the figures.

A is a box which is divided by partitions into three compartments *a* and *b b'*, of which the compartment *a* has an inlet opening to receive a pipe B for connection with a reservoir containing the lubricating liquid and the compartments *b* and *b'* are to be in communication through outlet openings *c c'* with opposite ends of the cylinder of the pump to be lubricated. The said openings *c c'* have provided around them the seats for two valves *d d'*, the stems of which are screw-threaded to fit nuts *e e'* which are screwed into the back of the box A. The said nuts contain stuffing-boxes for the valve stems which are provided with handles *f f'* at their outer ends by which to close or regulate the opening of the valves. In the partition which separates the compartment *a* from the compartments *b b'*, there are openings fitted with puppet valves *g g'* which are self-closing by their own weight or by any excess of pressure in the compartments *b b'* as compared with that in *a*, but either of which may be opened by a certain excess of pressure in the compartment *a* as compared with that in its respective compartment *b* or *b'*. Opposite the valves *g g'* there are removable bonnets *h h'* to provide for the removal or grinding of the said valves.

The box A is represented as made with flanges *i i* at its ends through which to connect it with the cylinder in such manner that its two compartments *b b'* may communicate respectively with the two ends of the cylinder.

In the example illustrated the lubricating device is applied to a well known kind of pump the cylinder C of which is surrounded by a jacket D in which is a diaphragm E which divides the said jacket into two parts one of which communicates only with one end and the other only with the other end of the cylinder, the induction to and the eduction from the cylinder taking place through the said jacket.

In adapting my invention to a pump of this kind the box A may be made very short as the communications of its compartments *b b'* with the cylinder may be made very near the diaphragm E, but for other kinds of pumps the box may be elongated to bring its compartments into communication with the cylinder close to the heads thereof, or instead of elongating the box pipes may be used to make communications between the valve openings *c c'* and the ends of the cylinder as may be well understood without special illustration.

For a vacuum or exhaust pump the reservoir which supplies the lubricating liquid through the pipe B may open to the atmosphere; but for a compression pump the said reservoir must be closed and the liquid be subjected to artificial pressure.

The valves *d d'* are always set open only so much as is necessary to supply at each stroke of the pump the quantity of water or oil required to make up for that which is unavoidably wasted or carried off at each stroke; and it may be here mentioned that when water is used, it will be used to fill the "clearance," and also to lubricate. The operation is then as follows: As the pump piston moves in either direction the valve *g* or *g'* forming communication with that end of the cylinder toward which the piston moves will close automatically and the valve *g'* or *g* forming communication with the other end will open automatically and allow the passage into the cylinder of as much of the lubricating liquid as is permitted by the valve *d'* or *d* according to the degree of opening of the latter valve. The

valves *d d'* may be closed to shut off communication with the cylinder by turning the handles *f f'* for the purpose of permitting examination, removal and replacement or grinding of the valves *g g'*, without interrupting the operation of the pump.

What I claim as my invention and desire to secure by Letters Patent is:

The lubricating device herein described consisting of a box having three compartments one of which has an inlet opening for lubricating liquid and the others of which have outlet openings for communication with

the ends of the pump cylinder, two valves for automatically opening and closing communication between the first mentioned compartment and the other two compartments respectively and two adjustable valves for closing and regulating the opening of the outlets of the said two compartments each independently of the other, substantially as and for the purpose herein set forth.

WILLIAM F. GARRISON.

Witnesses:

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