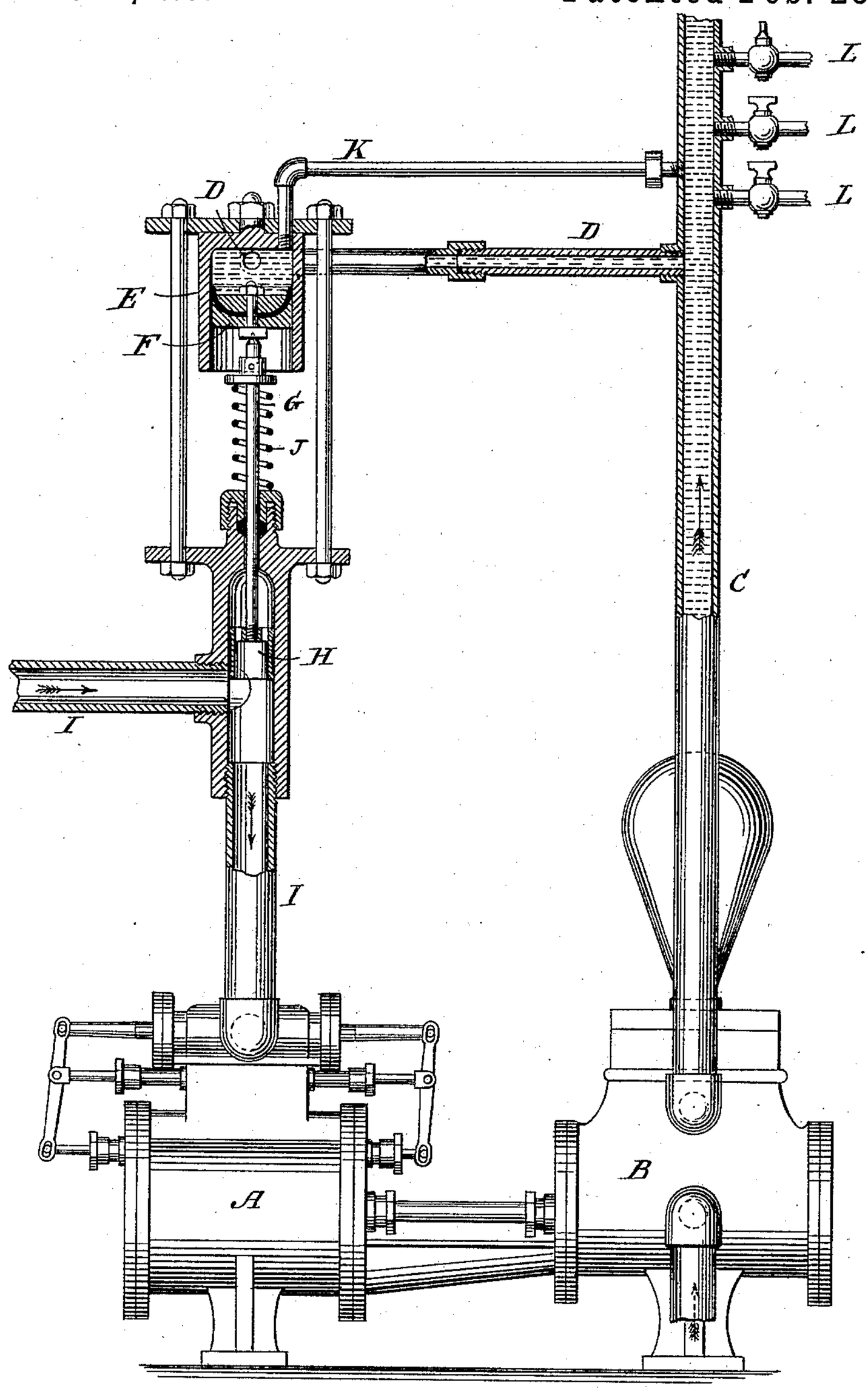
(No Model.)

P. SCHUFF.

PRESSURE REGULATOR FOR PUMPS.

No. 378,726. Patented Feb. 28, 1888.



WITNESSES:

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PHILIPP SCHUFF, OF NEW YORK, N. Y.

PRESSURE-REGULATOR FOR PUMPS.

SPECIFICATION forming part of Letters Patent No. 378,726, dated February 28, 1888.

Application filed September 8, 1887. Serial No. 249,140. (No model.)

To all whom it may concern:

Be it known that I, PHILIPP SCHUFF, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Pressure-Regulators for Pumps, of which the following is a specification.

This invention relates to improvements in pressure-regulators for pumps, as set forth in the following specification and claims, and illustrated in the accompanying drawing, which represents a side elevation, partly in section, of a pump having a pressure-regulator.

In the drawing, the letter A indicates the steam-cylinder, B is the pump-cylinder, and C is the delivery-pipe. A suitable passage or connecting pipe, D, connects the delivery-pipe C with a chamber, E, in which is fitted the piston or plunger F. This plunger connects with the stem G of a valve, H, which regulates the steam admitted through pipe I to the steam-cylinder A.

The piston F is loaded—that is, the action or resistance of a spring or weight, J, is made to exert a pressure upon said piston. From the upper part of the chamber E a branch pipe, K, leads to the delivery-pipe C. The delivery-pipe C is shown with a number of outlets, L. The connecting-pipe D communicates with the delivery-pipe C at a point intermediate the pump-cylinder and the outlets L.

The operation of the device is as follows: If all the outlets L are open, the water or fluid which is being pumped has a ready outflow from the delivery-pipe C, so that the fluid in said pipe is not exposed to great pressure. Upon some of the outlets L becoming closed the outflow is correspondingly checked, and the fluid which is being pumped through the delivery-pipe C is exposed to greater pressure. This increased pressure is communicated, through the connection-pipe D, to the piston F, so that said piston is moved against the resistance of the spring J to actuate the valve H and decrease the supply of steam which passes through the pipe I to the cylinder A, thereby decreasing the pumping action of the device. Upon a greater number of vents L being opened the pressure in the pipes C D is diminished, the spring J is free to move the piston F, so that the valve H will open a greater passage through the pipe I and the pumping action of the device is increased. A uniform discharge through each outlet L can thus be attained, whether a greater or less number of such outlets is open. The outlets L can be connected as desired. For example, in breweries each outlet L can connect with a tank or vat, so as to serve for washing such tank or vat.

At the top or upper part of the chamber E is a branch pipe, K, the object of which is to carry the warm water at the top of the chamber E into the pipe C, so that the water in the chamber E will not become too warm. By having the connecting-pipe D enter the delivery-pipe C at a point intermediate the pump-cylinder and the outlets L the upper or free end of the pipe C is left free to be used for attaching outlets L in any desired number and position.

It is obvious that my pressure-regulator can be used for air-pumps as well as for water-pumps.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a fluid-pressure regulator, the combination of the cylinder A, having inlet-pipe I, the pump B, having a delivery-pipe, C, provided with outlets L, the chamber E, the pipes D and K, connecting said delivery-pipe and chamber, the plunger F, the valve H, having a stem, G, connected with said plunger, and the spring J, substantially as described.

2. In a fluid-pressure regulator, the combination of the cylinder A, having inlet-pipe I, the pump B, having a delivery-pipe, C, the chamber E, the pipes D and K, connecting said delivery-pipe and chamber, the loaded plunger F, and the valve H, substantially as described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

PHILIPP SCHUFF. [L. S.]

Witnesses:
W. C. HAUFF,
E. F. KASTENHUBER.