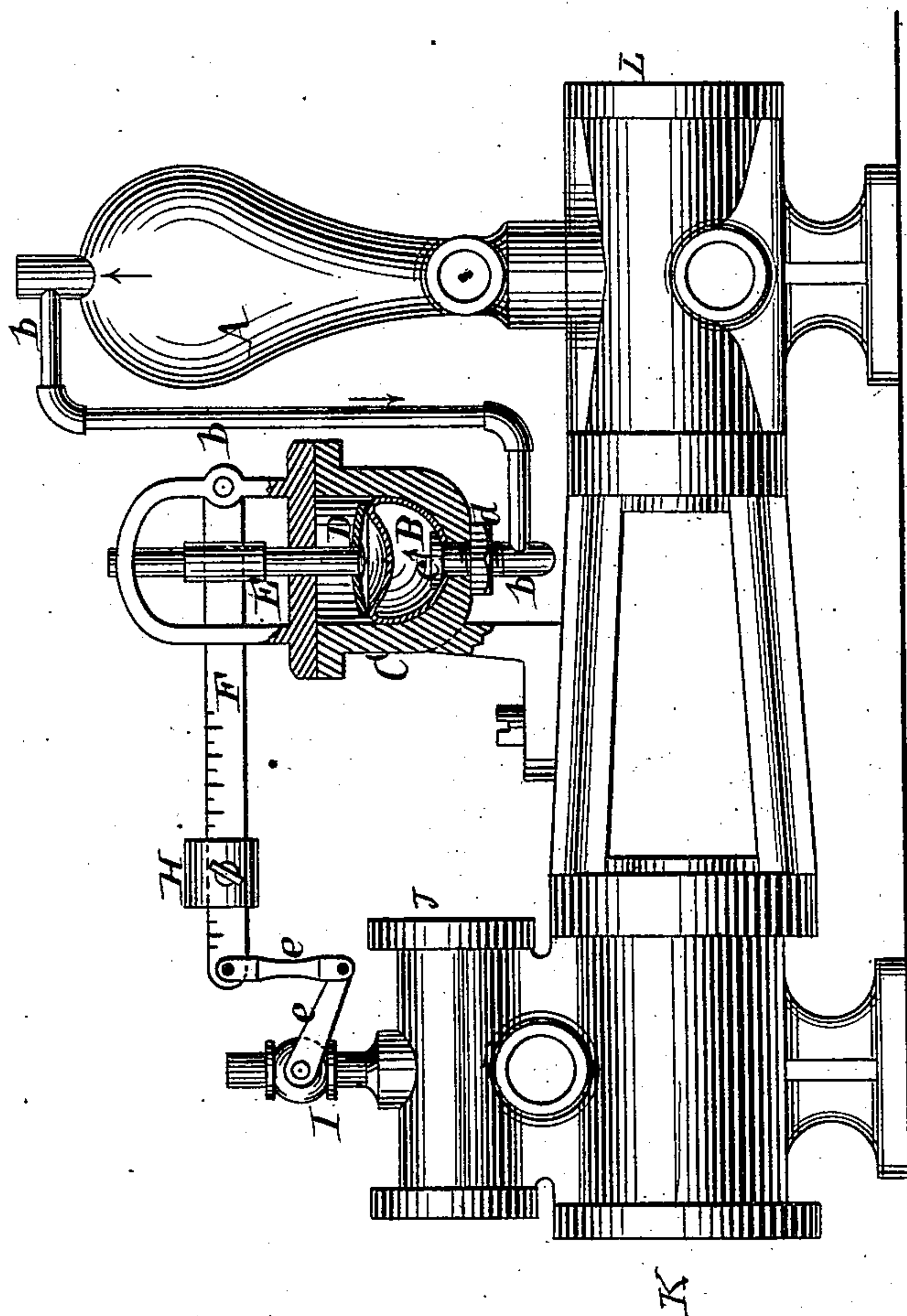


W. FOSTER.  
Pressure-Regulator.

No. 226,394.

Patented April 13, 1880.



Witnesses.  
Charles B. Loe  
Lorus M. Foster

Inventor.  
William Foster.

# UNITED STATES PATENT OFFICE.

WILLIAM FOSTER, OF BROOKLYN, NEW YORK.

## PRESSURE-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 226,394, dated April 13, 1880.

Application filed October 30, 1878.

*To all whom it may concern:*

Be it known that I, WILLIAM FOSTER, of the city of Brooklyn, county of Kings, and State of New York, have invented a new and  
5 useful Improvement in Pressure Regulators or Governors, of which the following is a full, clear, and exact description.

My invention is of great benefit and utility, and does away with disadvantages which be-  
10 long to the pressure regulators or governors in ordinary use.

My pressure regulator or governor, being elastic, has a larger range of travel than the disk or piston of the governor commonly used.  
15 It also requires no lubrication of any kind, and therefore there is no possibility of its not working, there being no corrosion or gum to make it stick fast and render it unreliable and dangerous.

20 The advantages of the ball B over the plain or flat diaphragm commonly used are, that there is no liability of cutting around the edges when clamped between flanges, as the flat diaphragm usually is secured. There is  
25 no possible chance of leakage between the flanges, these being dispensed with altogether. The action of the ball B itself is entirely different from the flat diaphragm, and the whole device is much simpler and not so liable to get  
30 out of order.

For convenience I have shown my invention as connected to a direct-acting steam-pump; but it is applicable to all purposes for regulating pressure.

35 The drawing represents my device applied to a steam-pump.

My invention is described as follows: The pressure of air, water, or other liquid passes from the chamber A, or other proper recepta-  
40 cle, through the pipe or pressure-tube *b*, into the inside of a ball, B, of rubber or other elastic substance, which ball is made spherical or elliptical in shape. The said ball B is confined in a hollow cylinder, C, of about the  
45 same diameter of hole as the outside of said ball B. One end of said cylinder C is curved to the circle of said ball B. This end of said cylinder C has a hole made in it of sufficient size to allow the pipe or tube *b* to pass through.  
50 The said tube *b* is provided with a flange, *c*,

which is passed through a small aperture made in the ball B. The ball B is then made fast to the cylinder C by means of the nut *d*, or other suitable means, so that there can be no escape of the air or water or other liquid  
55 from the ball B into the cylinder C.

A disk or piston, D, of metal or other suitable material, rests against the ball B, pressing said ball to about one-half its natural size. This disk or piston D is connected with a le-  
60 ver, F, by means of the guide-rod E, that operates any suitably-arranged steam-valve. To said lever F is attached, by set-screw or other suitable means, a weight, H, that can be  
65 slid back and forth on said lever F, to give the desired pressure. This lever F controls and operates the balanced steam-valve I, to which it is attached by means of the arm *e*.

Any pressure acting on the inside of the ball in excess of the regulated pressure fills  
70 out the ball B to its natural size, raising the lever F and weight H and closing the steam-valve.

I am aware of the patent of N. C. Lock, dated November 22, 1870, No. 109,526, and  
75 therefore lay no claim to the construction shown in that invention.

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

1. The ball B, inclosed in and secured to the  
80 cylinder C, and pressure-tube *b*, in combination with the disk or piston D and weighted lever F, connected with and operating a steam-valve, I, substantially as shown and described.

2. The combination, with the pump-cylinder  
85 L, air-chamber A, and bent tube *b*, connected with the air-chamber and the cylinder C, and having the flange *c* and nut *d*, of the hollow perforated ball B, cylinder C, piston D, weighted lever F, arms *e e*, and steam-valve I, sub-  
90 stantially as described, and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of October, 1878.

WILLIAM FOSTER.

In presence of—

CHARLES G. COE,  
LOUIS W. FROST.