(No Model.)

G. B. PRICE.

PRESSURE REGULATOR OR GOVERNOR.

No. 273,389. Patented Mar. 6, 1883.

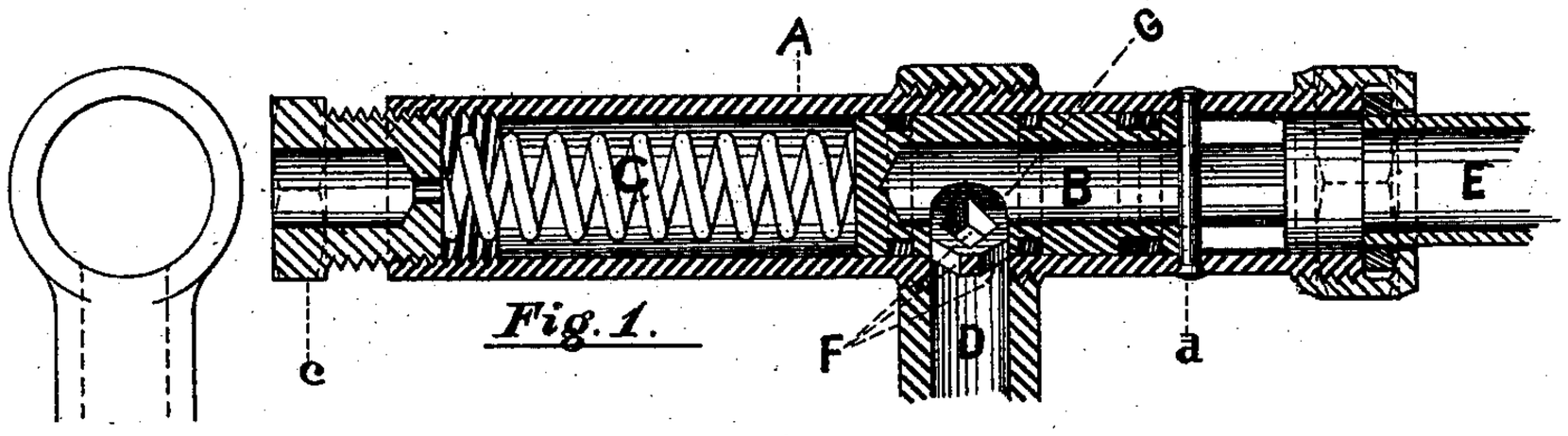

Fig. 1.

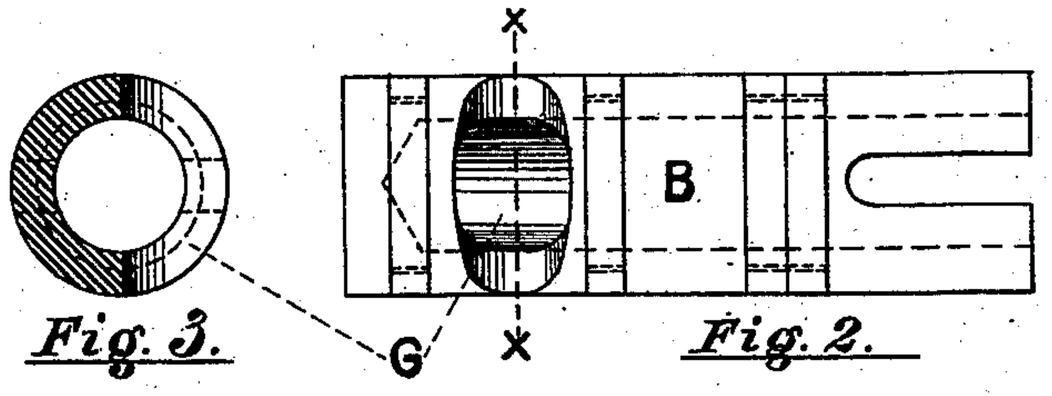

Fig. 3. *Fig. 2.*

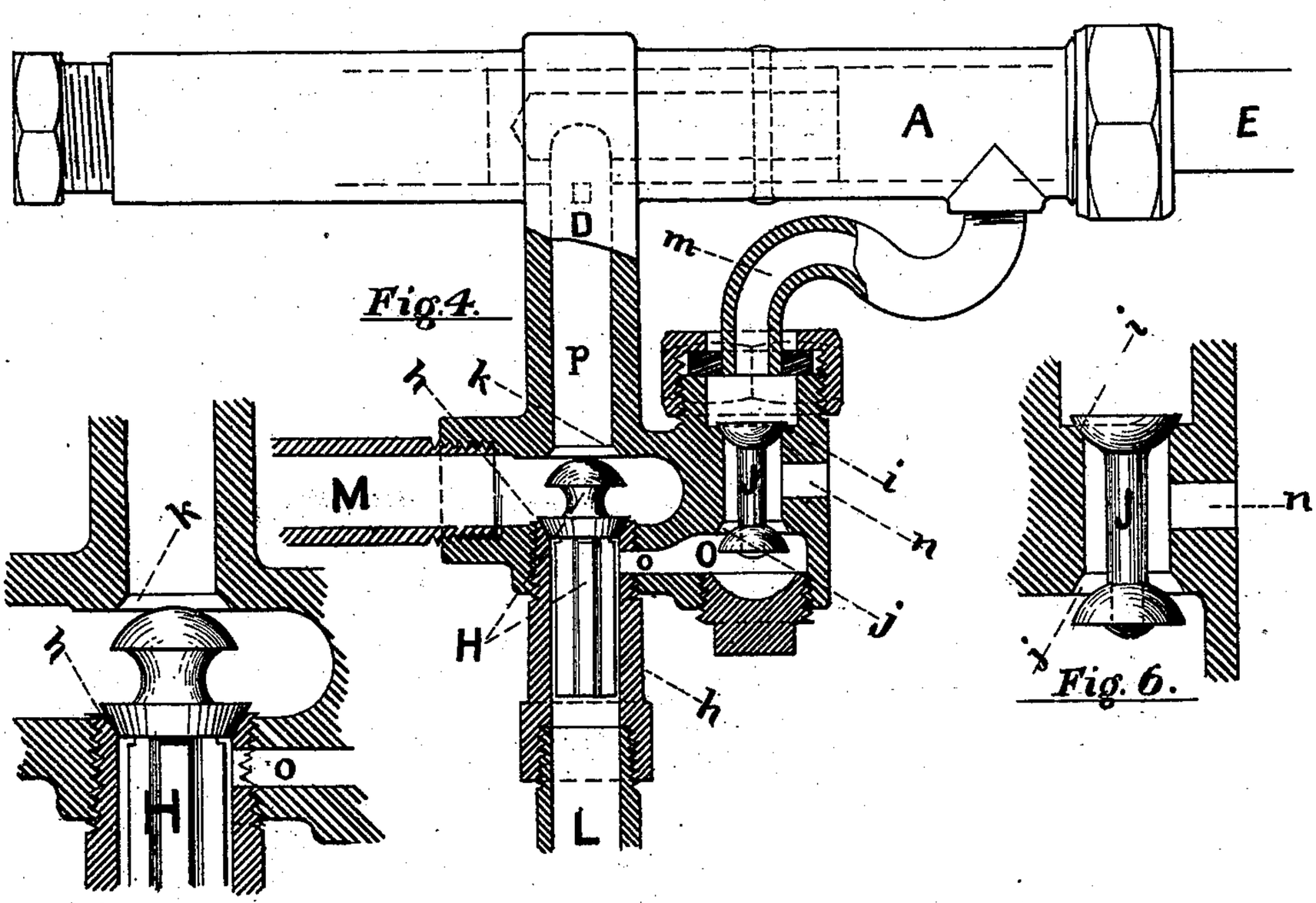

Fig. 4. *Fig. 6.*

Fig. 5.

WITNESSES

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GEORGE B. PRICE, OF PHILADELPHIA, PENNSYLVANIA.

PRESSURE REGULATOR OR GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 273,389, dated March 6, 1883.

Application filed December 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. PRICE, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Pressure Regulators or Governors, which improvement is fully set forth in the following specification and accompanying drawings, reference being had by letters, similar letters denoting similar parts.

I can here state that I have never before applied for a patent on the above in any country.

My invention relates to improvements in pressure regulators and governors; and it consists in certain valve mechanisms about to be described.

In the accompanying drawings, Figure 1 shows a longitudinal vertical section of that part of my invention which I shall term strictly the "pressure-governor." Fig. 2 shows a plan view of that portion of the same marked B, enlarged. Fig. 3 is a transverse section of Fig. 2 through the line *x x*. Fig. 4 shows a longitudinal vertical section of the remaining mechanism, in combination with that part called the "governor," and which is here shown in side elevation. Figs. 5 and 6 are enlarged views of the valves H and J.

My invention consists of—

First, a valve mechanism, operating in such a way and to the intent that one constant prescribed pressure may be maintained at the connection E, no matter how much in excess the pressure may be at D.

The parts are as follows:

A is a cylinder provided with connections as at D and E and openings at F.

B is a piston-valve sliding in A, made hollow from one end, and having an opening, G, in its circumference. For the purpose of preventing leakage, grooves are cut in its circumference, into which rings may be sprung, or any ordinary form of packing, as required.

C is a spring, one end of which operates against the solid end of the piston B, the other end being held in tension by the adjusting-cap *c*. The wire *d*, fitting between slots in the piston B, acts as a stop and prevents the piston B from turning.

The operation is as follows: Pressure in excess of that to be used is admitted at D, passing through the openings F and G and the hollow of the piston B to the outlet E; but as soon as the pressure in A equals the tension of the spring C it forces the piston B back over the ingress-openings F, so cutting off the supply until the pressure in A has decreased, when the spring C forces it forward and again opens the supply.

Secondly, the combination of the above-mentioned device with other valve arrangements, for the purpose of admitting, retaining, diverting, governing, discharging, and readmitting pressure from one set or series of pipes or reservoirs to others.

The parts (not already described) are as follows:

H is a double valve, (in which the area of the lower is in excess of the upper,) having one seat in the upper end of the guide *h* and one at *k*. J is a double pop-valve, having seats at *i* and *j*. L is a connection leading from the main supply. M is a connection with an auxiliary reservoir or supply. A is the pressure-governor; E, the connection with the consumer or power appliance, and the passages *m* and *n* the escape and final outlet.

In order to fully understand the operation of this combination, imagine it applied to and forming the intermediate valve of an automatic pressure air-brake. Its operation will be as follows: Pressure is admitted from the main supply through L. Passing up *h*, it lifts the valve H, holding it against the seat *k*, and passing into the auxiliary reservoir at M. It also passes through the opening *o* into the chamber O and lifts the pop-valve J, closing it against its seat *j*. This condition holds until the pressure is exhausted from the connection L, when the pressure confined in the auxiliary reservoir at M closes the valve H against its seat *h*, thus opening the port *p*, through which it escapes to the pressure-governor A, operating as before described, thence to the pressure appliance (as a brake-piston and cylinder) at E. At the same time, the pressure being exhausted from the chamber O, and being in excess in the passage *m*, the pop-valve J is closed against its seat *i*. Pressure being again forced from the main supply through L and *h*, the valve H is lifted as before, thus shutting off the port *p*, the pressure refilling the auxil-

iary reservoir at M and chamber O, lifting the pop-valve J, which it closes against its under seat, *j*, thus permitting the pressure confined in the pressure appliance at E, governor A, and passage *m* to escape through *n* into the atmosphere, thus relieving itself.

Having now described my invention, what I claim as new and original, and desire to secure by Letters Patent, is—

1. A pressure-governor consisting of a single piston-valve, B, hollow from one end, having an opening in its circumference, and sliding in a cylinder, A, provided with inlet and outlet connections, the said valve B being subjected to the steam or air pressure from one end only, and operating in such a manner that an excess of pressure in the outlet-connection shall cause the same to slide over and cover the inlet-ports, which ports are again uncovered by the reduction of the same pressure in the outlet, allowing the resisting force at C to force back the valve B until the pressure again overcomes the resistance, as before, thus maintaining one constant pressure at the outlet.

2. As an improvement in pressure-regulators, the double valve H, for the purpose of admitting and diverting pressure, in combination with the double pop-valve J, for the purpose of retaining and exhausting pressure, substantially as and for the purposes shown and described.

3. As an improvement in pressure-regulators, the valves H and J, of the general form, arrangement, and for the purposes mentioned, in combination with the pressure-governor A, substantially as and for the purpose shown and described.

GEORGE B. PRICE.

Witnesses:
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