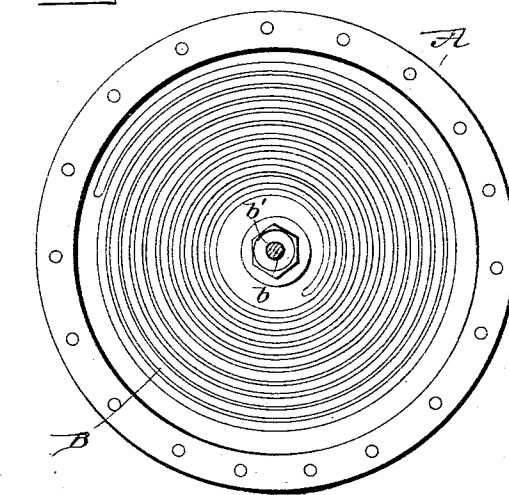
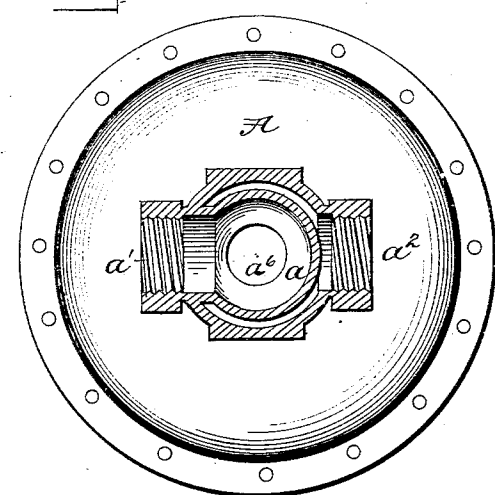
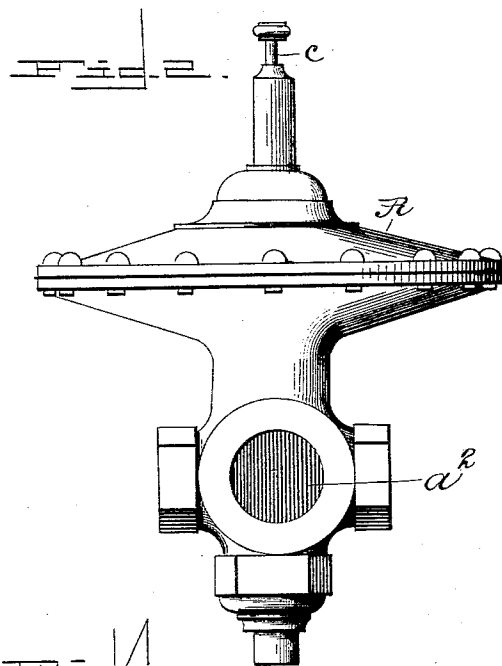
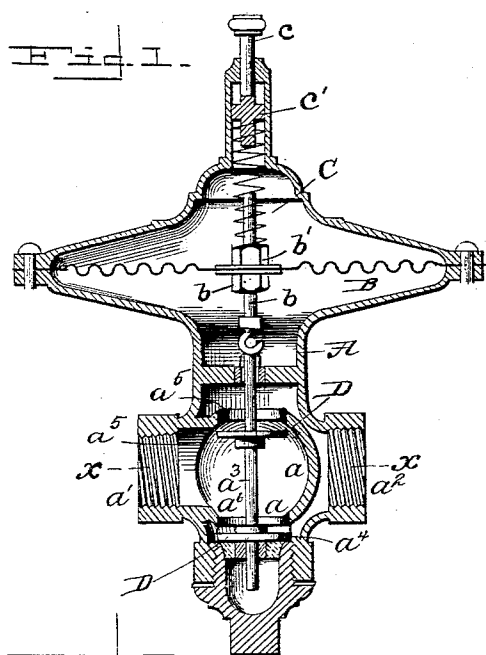


(No Model.)

R. H. PLASS.
GOVERNOR.

No. 476,408.

Patented June 7, 1892.



Witnesses

David St. Paul

J. B. Keefe

Inventor
Reuben H. Plass,

by *A. S. Dyke*
his Attorney.

UNITED STATES PATENT OFFICE.

REUBEN H. PLASS, OF BROOKLYN, NEW YORK.

GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 476,408, dated June 7, 1892.

Application filed September 6, 1889. Serial No. 323,229. (No model.)

To all whom it may concern:

Be it known that I, REUBEN H. PLASS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Governors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to governors, and particularly to that class designed to regulate the passage of gas, steam, air, or the like under pressure to a burner, place of storage, or the like. In governors of this kind in which the movement of a diaphragm acted upon by fluid is utilized to control the amount of the fluid allowed to pass great inconvenience has been experienced on account of the difficulty in securing a substance suitable for the purposes of a diaphragm, the difficulty being to obtain a diaphragm having the necessary flexibility which will be impervious to and not be injured by contact with gas, air, steam, or other fluid.

The object of the present invention is to produce a governor capable of use in regulating the flow of gas, steam, air, and any other fluid under pressure which shall have a regulating-diaphragm possessing the necessary flexibility and not liable to injury by contact with steam, gas, or the like.

With this object in view the invention resides in a regulator whereby the flow of fluids is controlled, comprising a diaphragm, preferably of thin metal, stamped or otherwise formed to produce a fluted or corrugated body, the indentation formed to produce the flutes or corrugations being of a continuous spiral form, presenting a flexible body to be acted upon by fluid under pressure, and a valve connected with the diaphragm and operated by its movements.

I have illustrated the invention in the accompanying drawings, in which—

Figure 1 is a central vertical section of a governor made in accordance with my invention. Fig. 2 is a side elevation of the governor. Fig. 3 is a section on the line xx of Fig. 1, and Fig. 4 is a detail view of the diaphragm.

In the drawings, A represents the casing of

the governor, preferably made in two parts, the lower part containing a globe-valve seat a , an inlet a' , and an outlet a'' and the upper part containing a spring and means for imposing tension upon the spring, whereby the pressure necessary to move the diaphragm is regulated.

The diaphragm B is secured to the interior of the regulator, preferably by clamping its edges between the parts of the shell A. The diaphragm is provided at its center with an opening, through which projects a screw-rod of bar b . This bar is adjusted and held in proper position relative to the diaphragm by jam-nuts b' , one of which is arranged on each side of the diaphragm.

In order that the amount of pressure necessary to move the diaphragm and consequently to operate the valve with which it is connected may be regulated, I provide a spring C, the lower end of which bears upon the upper jam-nut and the upper end of which encircles a screw-pin c and bears upon a collar c' of the pin. The pin is screw-threaded and enters through a corresponding opening in the top of the shell B, and it is provided at the extreme upper end with a thumb-nut, whereby it is moved up and down to impose more or less tension upon the spring C. In the lower portion of the shell is the globe-valve chamber a and the two puppet-valves D, adapted to be seated upon the globe-seat. The valve consists of the valve-stem a^3 and the valves proper a^4 . The upper one of these valves a^4 is designed to close the opening d^5 of the globe-seat a and the lower valve is designed to close the opening a^6 in the lower portion of the globe-valve seat. The lower end of the screw-rod b is connected by a swivel-joint or in any other suitable manner with the valve-rod b , so that as any fluid under pressure enters the inlet a' a portion of it passes upward and impinges against the lower face of the diaphragm. When this pressure is sufficient to overcome the spring C, the diaphragm will rise, carrying with it the valve-stem b and closing the passages from the globe-valve seat, thus shutting off the flow of fluid thereto.

It has been found that a diaphragm constructed as herein described will move upward and the valve operate without materially

distorting the diaphragm, the peculiar spiral form allowing a spiral swelling of the diaphragm, which in no way distorts the diaphragm or bends any part thereof unevenly.

5 It has also been found that as soon as pressure is removed the diaphragm will immediately return to its normal position, the natural resiliency of the metal and the spiral formation of the diaphragm accomplishing this end.

10 Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A regulator whereby the flow of liquids is

controlled, comprising a diaphragm, preferably of thin metal stamped or otherwise 15 formed to produce flutes or corrugations, the indentations producing the flutes or corrugations being of a continuous spiral form, substantially as described.

In testimony whereof I affix my signature in 20 presence of two witnesses.

REUBEN H. PLASS.

Witnesses:

R. G. DYRENFORTH,
DAVID H. MEAD.