

No. 661,283.

Patented Nov. 6, 1900.

C. W. BENEDICT.
PRESSURE REGULATOR.
(Application filed Mar. 20, 1900.)

(No Model.)

Fig. 1.

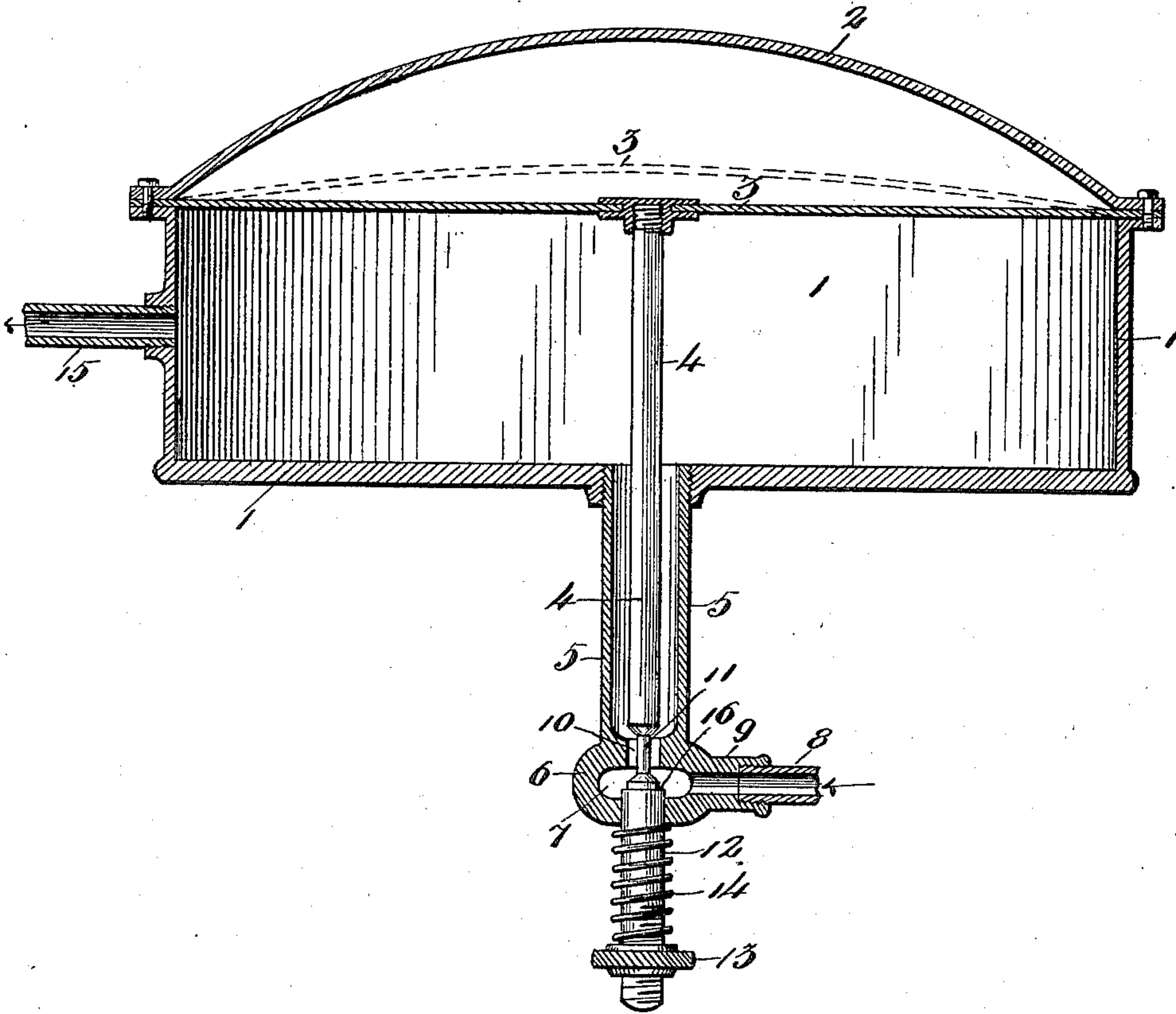
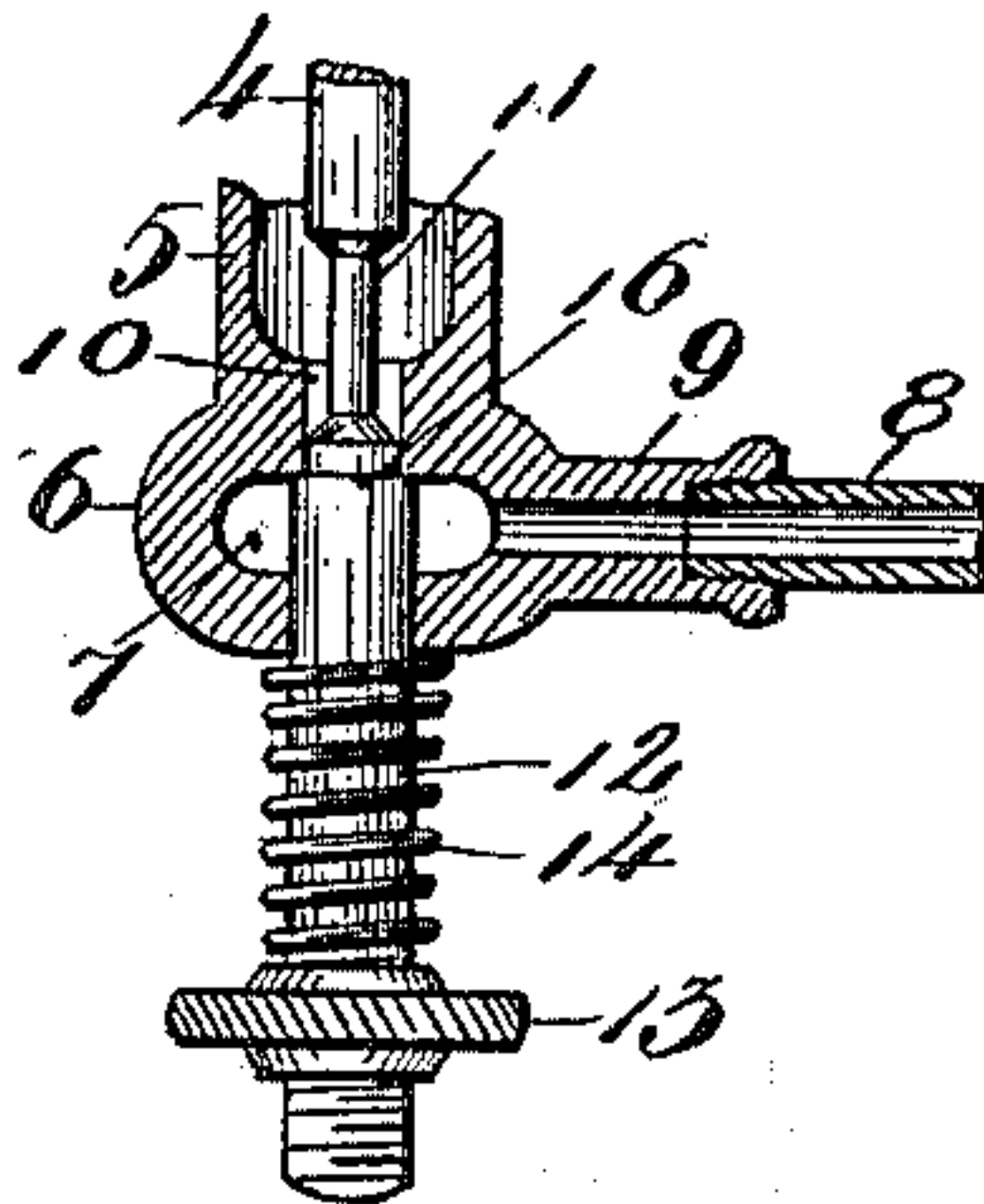


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES W. BENEDICT, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF
TO CHARLES J. JOHNSON, OF SAME PLACE.

PRESSURE-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 661,283, dated November 6, 1900.

Application filed March 20, 1900. Serial No. 9,412. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. BENEDICT, a citizen of the United States, residing at St. Louis, State of Missouri, have invented new and useful Improvements in Pressure-Regulators, of which the following is a specification.

My invention relates to improvements in pressure-regulators; and it consists in the novel combination and arrangement of parts, as will be hereinafter more particularly described and claimed.

In the drawings, Figure 1 is a vertical longitudinal section of my complete invention, showing the valve in an open position; and Fig. 2 is a similar section of the lower end of the pressure-regulator, showing the valve in a closed position.

The object of my invention is to construct a simple, practical, and durable pressure-regulator, or one in which the air, gas, or other fluid passing from the same for any purpose or service is automatically delivered at an even pressure notwithstanding the variable pressure of the liquid or fluid contained in a suitable reservoir to which the regulator is attached; and it consists in the specific construction of the device for accomplishing the above results, as hereinafter described.

Referring to the drawings, 1 represents a cylindrical chamber having a removable top 2, a diaphragm 3 being secured between the latter and the upper edge of said chamber, whereby the said diaphragm is securely held in position and secured to the medial portion of the diaphragm, and depending therefrom is a rod 4, which passes freely through an enlarged tubular extension 5, which is screwed into the bottom of the chamber 1 and depends therefrom, the upper end of said tubular extension opening into the interior of said chamber, and forming the lower end of the tubular extension is an enlarged portion 6, within which is formed a circular chamber 7, within which the air, gas, or other fluid first enters from the supply-pipe 8, leading from any suitable reservoir, the said pipe being screwed into a nipple 9, forming a continuation of the enlarged portion 6. The chamber 7, formed in the enlarged portion 6 of the tubular extension 5, is in communication with the lat-

ter by a port 10, within which the reduced portion 11 of the rod 4 is located when the valve is in an open position, whereby the fluid is free to pass through said port. The lower end 12 of the rod 4 is enlarged and is free to slide through an opening formed for its reception in the lower wall of the enlarged portion 6, but prevents the escape of any fluid, the lower end of the said rod or enlarged portion 12 extending downwardly a suitable distance beyond the enlarged portion 6 of the tubular extension and being provided with screw-threads upon which is movable a nut 13, and encircling that portion of the rod and interposed between the nut 13 and the lower wall of the enlarged portion 6 of the tubular extension 5 is a coil-spring 14, whereby the proper amount of fluid and at a given pressure is accurately adjusted to be fed through the pipe 15, connected to the chamber 1. By enlarging the lower end of the rod 4 an annular shoulder or seat 16 is formed, which is adapted to come in contact with the upper wall of the chamber 6 when the valve is in a closed position, thereby entirely cutting off the supply of fluid to the chamber 1, the said result being accomplished, should the pressure of the fluid become excessive, by forcing the diaphragm 3 upwardly or in the position as shown in dotted lines in Fig. 1, a slighter excessive pressure being overcome in the same manner by slight movement of the diaphragm, which would only partially close the valve.

Having fully described my invention, what I claim is—

A pressure-regulator, comprising a suitable chamber, a diaphragm secured within the same, a supply-pipe leading from said chamber, a tubular extension depending from the latter, and in communication with the same, a chamber formed in the lower end of said extension, and in communication with said tubular extension by a suitable port, a supply-pipe leading from a suitable reservoir, attached to the lower end of the tubular extension, and in communication with the chamber formed therein, a rod attached to the said diaphragm and depending therefrom, and passing through the said tubular extension, the lower end of said rod being enlarged and

passing through the lower wall of the extension, and projecting downwardly therefrom, said rod having a reduced portion passing through the port formed in the cylindrical extension, and a seat cooperating with the upper wall of the chamber about said port, a nut, screwed on the enlarged portion of the stem, and a coil-spring encircling the enlarged portion of the stem, and interposed

between said nut and lower end of the extension, as and for the purpose described.

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

CHARLES W. BENEDICT.

Witnesses:

C. J. ANDERSON,

C. F. KELLER.