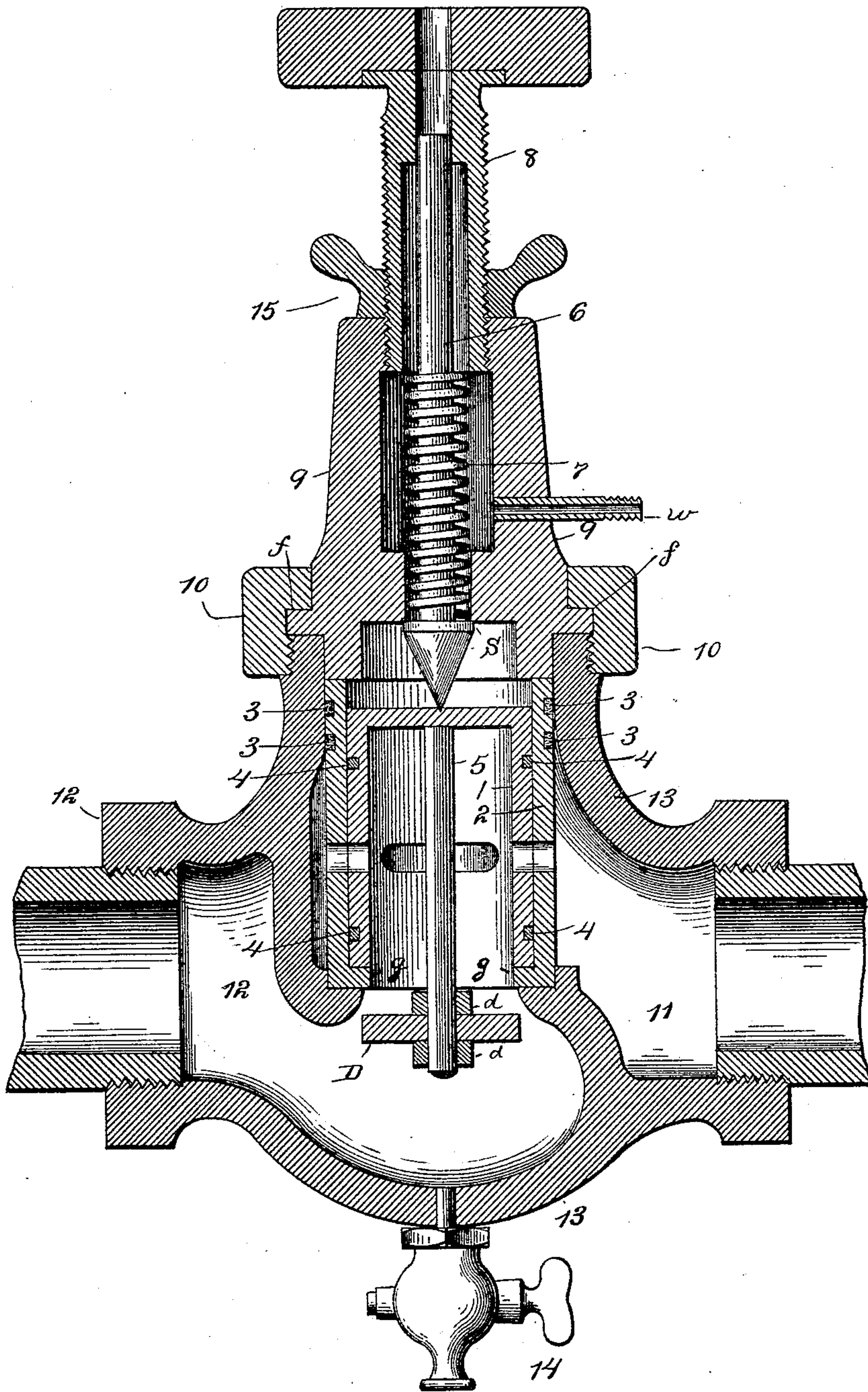


(No Model.)

A. N. LUCAS, B. ZINDEL & M. S. SCHMIT.
PRESSURE REGULATOR.

No. 500,145.

Patented June 27, 1893.



Witnesses.
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UNITED STATES PATENT OFFICE.

ABE N. LUCAS, BERNY ZINDEL, AND MATHIAS S. SCHMIT, OF FORT HOWARD,
WISCONSIN.

PRESSURE-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 500,145, dated June 27, 1893.

Application filed March 30, 1893. Serial No. 468,369. (No model.)

To all whom it may concern:

Be it known that we, ABE N. LUCAS, BERNY ZINDEL, and MATHIAS S. SCHMIT, citizens of the United States, residing at Fort Howard, in the county of Brown and State of Wisconsin, have invented certain new and useful Improvements in Pressure-Regulators; and we 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.

Our invention relates to pressure regulators, and it is our object to promote the efficiency and simplify the construction of the valve and valve-cage, and valve body.

It is also our object to provide a regulator, the component parts of which are readily adjusted or detached for purposes of inspection, repair or renewal.

The accompanying drawing forming a part of this specification shows a front elevation, in section of our pressure regulator, in which—

1 denotes a cup shaped valve closed at the top and having an open bottom and side ports, 2 the valve cage having an annular flange *g* at its lower end, 3 packing rings to the valve cage, 4 split metallic rings to the valve, 5 a rod rigidly secured at one end to the upper or closed end of the valve, the lower end of said rod projecting below the valve, and having a detachable disk *D* secured in position thereon, by nuts *d*. Said disk abuts against the lower part of the valve cage as shown in the drawing.

6 denotes a rod, having a shoulder *S* formed near its lower end said end terminating in a point, and bearing centrally upon the upper or closed end of the valve.

7 denotes a coil spring mounted upon the rod 6, its lower end bearing upon the shoulder *S*, and its upper end bearing against a gage screw.

8 denotes the gage-screw or regulator formed with a central bore to receive the upper end of the rod 6.

9 denotes a casting forming a spring box, for the regulating screw and spring, and is provided with a waste pipe *w* and annular flange *f* near its lower end, and a binding nut 10, which fits over said box and bears against said shoulder.

11 denotes the inlet and 12 the outlet passage ways formed in the valve body or main casting 13. The upper part of this casting fits over the lower end of the box 9 and bears against the flange *f* and is screw-threaded to receive the binding nut 10; said casting also forms a seat for the valve cage as shown. 14 denotes a drain pipe placed in the lower end of said casting.

15 denotes a jam nut or nut-lock.

The several parts are placed together in the following order: The valve is placed into the valve-cage, by compressing the split rings 4; the valve-cage is then placed into position through the upper opening in the casting 13; the box 9 is then secured in position by the binding nut 10; the rod and coil spring are then threaded through the opening in the box 9; the regulator screw containing the jam-nut or nut-lock is then threaded over the rod 6 and screwed down into the box, until the required tension upon the spring is obtained; the jam-nut is then turned to lock the same in position.

A suitable indicator may be used in connection with the regulating screw.

Having shown and described our invention, what we claim, and desire to secure by Letters Patent, is—

In a pressure-regulator the combination of the spring pressed rod, the spring box having the flange *f*, the casting 13, the binding nut uniting said spring box and casting, the cylindrical valve-cage seated in said casting and having side orifices and an annular flange *g*, the cup shaped valve normally resting on said flange and abutting against the spring pressed rod said valve being closed at the top and having side orifices which register with like orifices in the valve cage and a rod 5 provided at its lower end with a disk *D* which abuts against the valve cage substantially as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

ABE N. LUCAS.
BERNY ZINDEL.
MATHIAS S. SCHMIT.

Witnesses:

WM. CALLAGHAN,
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