

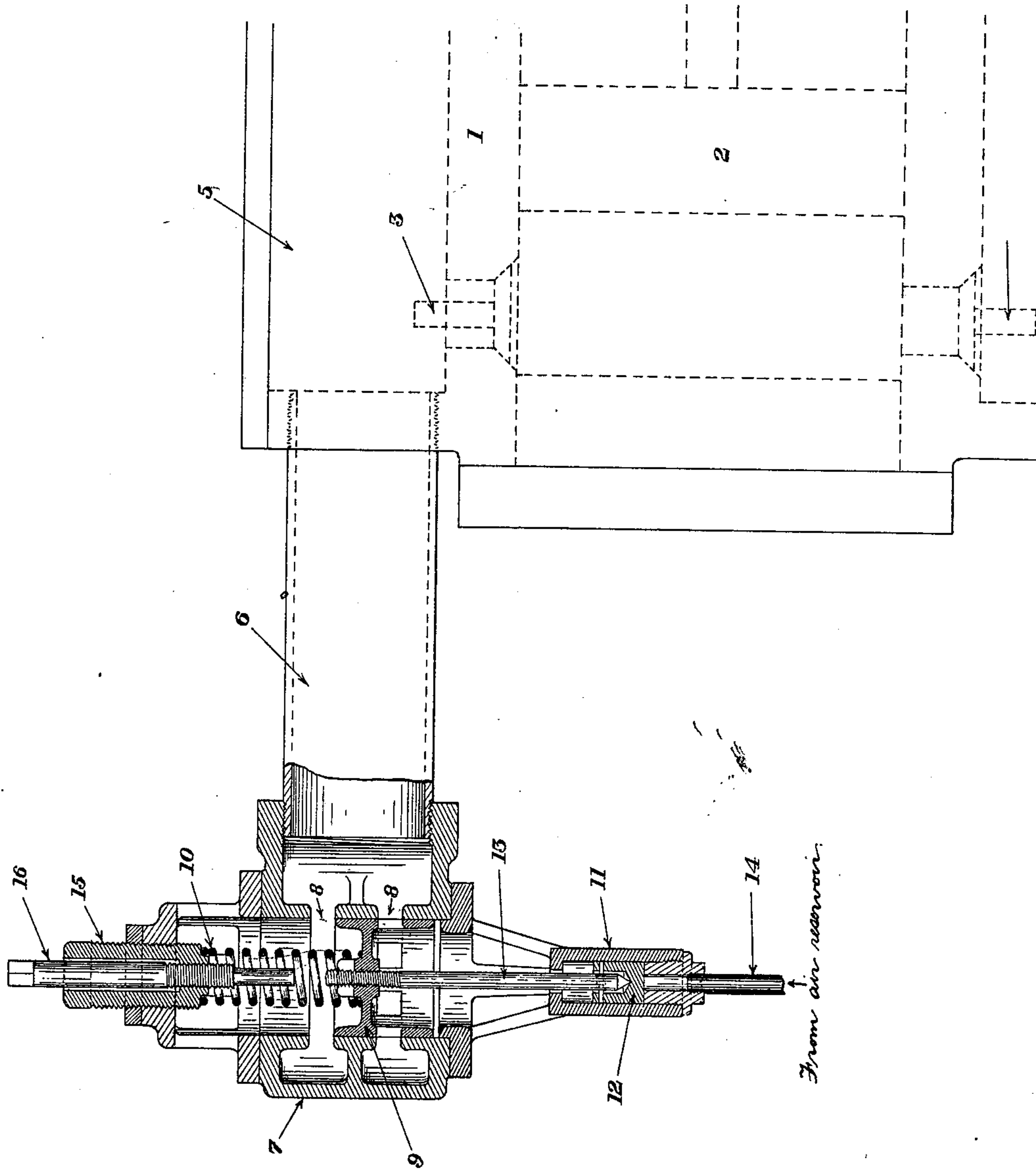
No. 675,340.

Patented May 28, 1901.

W. PRELLWITZ.
REGULATOR FOR AIR OR GAS COMPRESSORS.

(Application filed May 26, 1900.)

(No Model.)



WITNESSES:

J. H. Jewett.
Geo. T. Cousins

INVENTOR

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UNITED STATES PATENT OFFICE.

WILLIAM PRELLWITZ, OF EASTON, PENNSYLVANIA, ASSIGNOR TO THE
INGERSOLL-SARGEANT DRILL COMPANY, OF NEW YORK, N. Y.

REGULATOR FOR AIR OR GAS COMPRESSORS.

SPECIFICATION forming part of Letters Patent No. 675,340, dated May 28, 1901.

Application filed May 26, 1900. Serial No. 18,175. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PRELLWITZ, a citizen of the United States, and a resident of Easton, in the county of Northampton and State of Pennsylvania, have invented a new and useful Improvement in Regulators for Air and Gas Compressors, of which the following is a specification.

This invention relates to apparatus for the regulation of air and gas compressors by varying the area of the inlet or orifice through which the air or gas passes before reaching the compressor-cylinder; and it consists in the means hereinafter described and claimed for such regulation.

The accompanying drawing represents a side view of a portion of an air-compressor to which a regulator embodying my invention is applied and a vertical section of the regulator.

1 is the cylinder of the air-compressor, having the compressing-piston 2, inlet-valves 3, and discharge-valves 4. The chamber 5, from which the air passes into the cylinder 1, is closed, so that no air can come into it except through the inlet-pipe 6. On the outer end of pipe 6 is the inlet-regulating-valve casing 7, having ports 8. Within this valve-casing is the inlet-regulating valve 9, normally held down and open, as shown, by spring 10. To the bottom of the valve-casing is attached a cylinder 11, having therein the piston 12, connected to valve 9 by the stem 13. Cylinder 11 is connected by pipe 14 with the air receiver or system into which the compressor is delivering air.

On top of spring 10 is the adjusting-screw 15, by means of which the tension of the spring may be adjusted and varied for a purpose hereinafter described. Within screw 15 is the adjustable screw-stop 16, which may be set to limit the upward movement and closure of the valve at any predetermined point, for a reason which will be hereinafter explained.

The operation of the device is as follows: When the air-pressure in the system has reached a predetermined point, the pressure beneath the piston 12 becomes enough to overcome the spring 10, and it commences to move the valve 9 upward, thereby closing it

more or less. This reduces the amount of air supplied to the machine, and as the pressure rises still more the valve will completely close. The piston 2 being thus prevented from drawing any more air into the cylinder 1 will quickly expel the air already past valve 9. A partial vacuum will then be formed in both ends of the cylinder, and the piston having the same partial vacuum on both sides will reciprocate freely with the expenditure of a very small fraction of the power required to operate it when compressing. In case it is undesirable for the machine to cease compressing entirely the stop 16 may be so set as to stop the valve with a minimum opening, which will admit into the cylinder any proportion of the full volume required. By means of screw 15 the tension of spring 10 may be adjusted to allow the valve 9 to close when any predetermined air-pressure is reached.

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

1. In an air or gas compressor, the combination with a valve for closing or regulating the area of the inlet to the compressor, of a cylinder containing a piston upon which the pressure in the receiver to which the compressor delivers acts to close said valve, a spring for holding said valve open and an adjustable stop for controlling the point of closure of said valve, substantially as herein described.

2. The combination with a regulating-valve for producing the closure of the inlet to a compressor, of a cylinder containing a piston upon which the pressure in the receiver to which the compressor delivers acts to close said valve, a spring for holding said valve open, a tension-adjusting screw for said spring and an adjustable stop screwing through the tension-adjusting screw for controlling the point of closure of said valve, substantially as herein described.

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

WILLIAM PRELLWITZ.

Witnesses:

FRED RICHARDS,
HOWARD C. STEPHENS.

It is hereby certified that the assignee, in Letters Patent No. 675,340, granted May 28, 1901, upon the application of William Prellwitz, of Easton, Pennsylvania, for an improvement in "Regulators for Air or Gas Compressors," should have been described and specified as *The Ingersoll-Sergeant Drill Company* instead of "The Ingersoll-Sargeant Drill Company;" and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 11th day of June, A. D., 1901.

[SEAL.]

F. L. CAMPBELL,
Assistant Secretary of the Interior.

Countersigned:

F. I. ALLEN,
Commissioner of Patents.