

(No Model.)

C. H. PRÜSMANN.
REDUCING VALVE.

No. 558,839.

Patented Apr. 21, 1896.

Fig. 1.

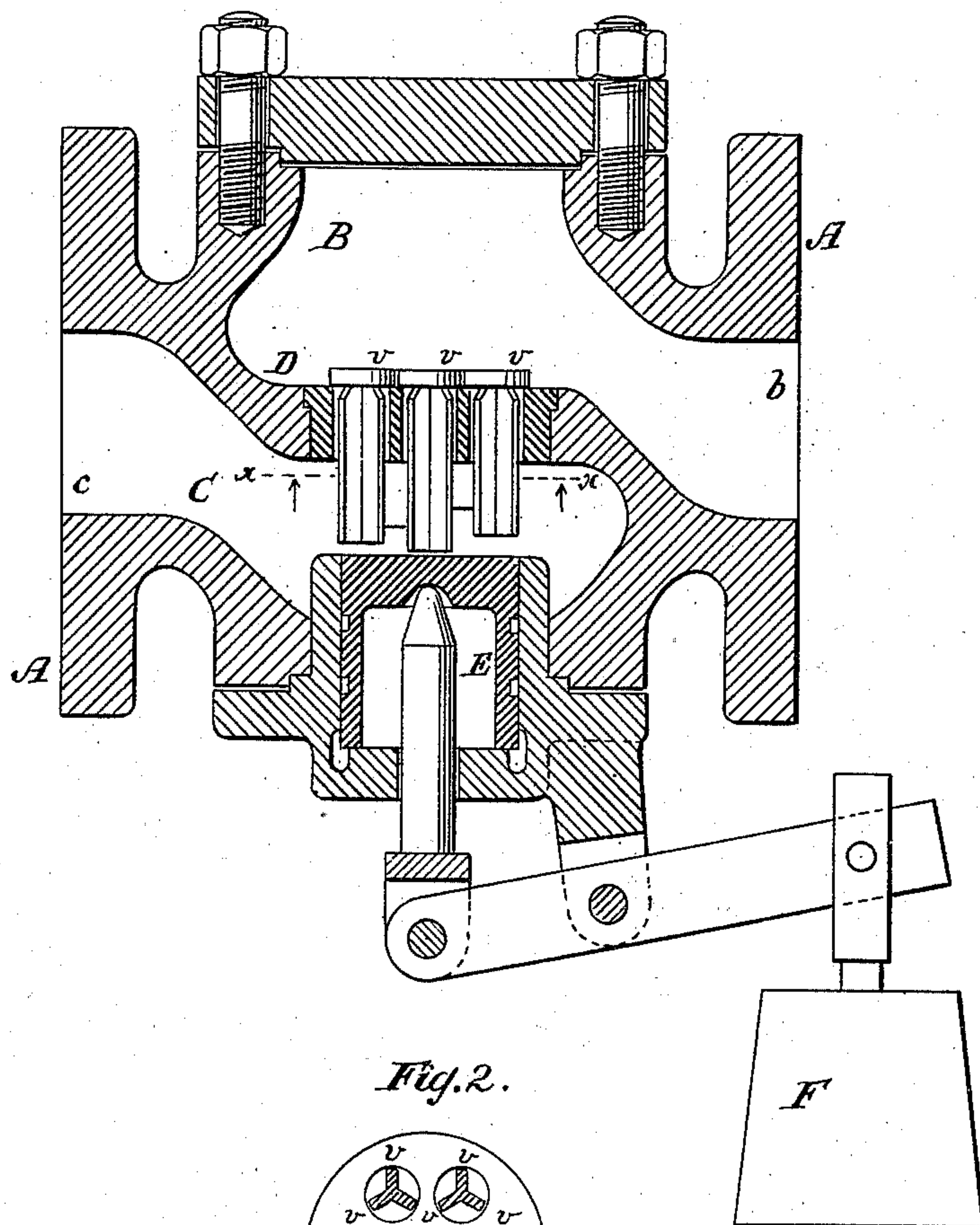


Fig. 2.

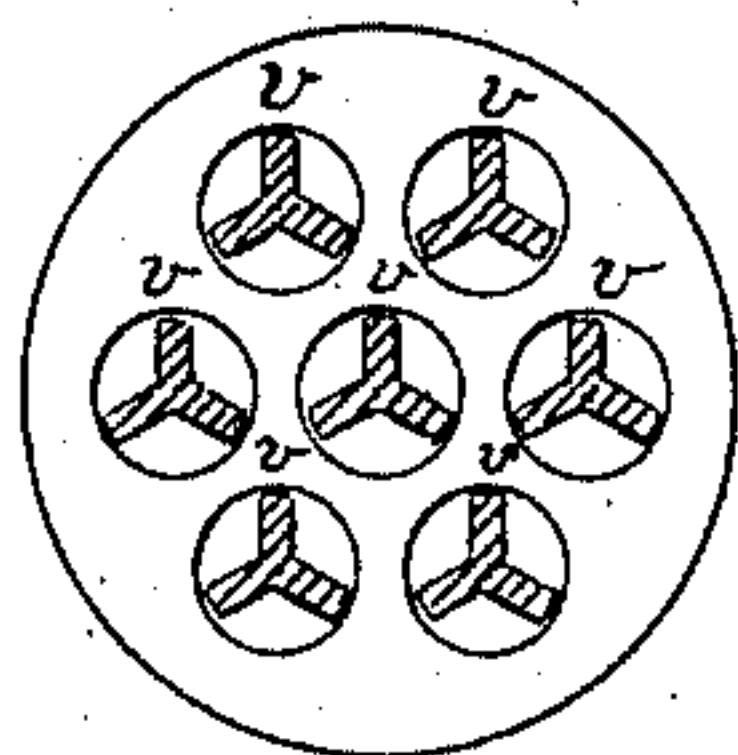
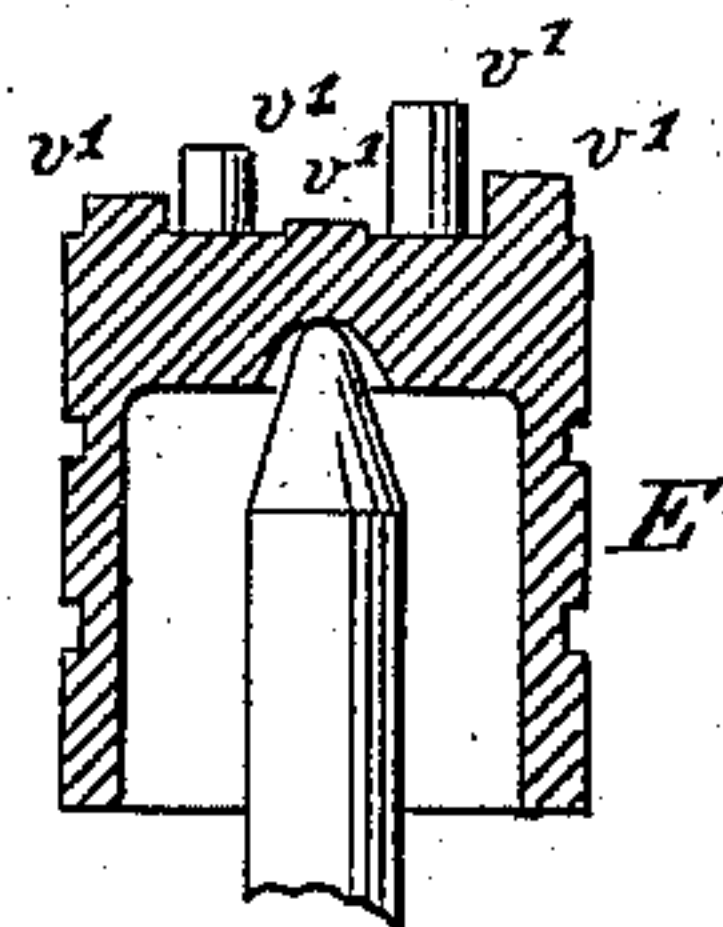


Fig. 3.



WITNESSES:

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INVENTOR

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BY

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UNITED STATES PATENT OFFICE.

CARL HEINRICH PRÜSMANN, OF MAGDEBURG, GERMANY, ASSIGNOR TO
SCHAEFFER & BUDENBERG, OF SAME PLACE.

REDUCING-VALVE.

SPECIFICATION forming part of Letters Patent No. 558,839, dated April 21, 1896.

Application filed February 20, 1896. Serial No. 580,055. (No model.) Patented in Germany January 14, 1896, No. 85,709.

To all whom it may concern:

Be it known that I, CARL HEINRICH PRÜSMANN, a subject of the King of Prussia, residing at Magdeburg, in the Kingdom of Prussia, German Empire, have invented new and useful Improvements in Reducing-Valves, (for which a patent has been obtained in Germany, No. 85,709, dated January 14, 1896,) of which the following is a specification.

10 This invention consists in a pressure-reducing valve provided with a series of small valves which are depressed upon their seats by the initial pressure and lifted up successively by the regulating piston or diaphragm, as fully explained in the following specification and claim and illustrated in the accompanying drawings, in which—

20 Figure 1 represents a longitudinal central section of my pressure-reducing valve. Fig. 2 is a horizontal section in the plane xx , Fig. 1. Fig. 3 is a modification of the regulating-piston in section.

In the drawings, the letter A designates the shell of my pressure-reducing valve, which is divided into two chambers B C, which are separated from each other by the partition D. The fluid under pressure enters the chamber B through the passage b , and it leaves the chamber C under a reduced pressure through the passage c . In the partition D are the seats for a number of small valves v , the stems of which are of different length (see Fig. 1) and extend through the partition D into the reducing-chamber C. In the bottom of this reducing-chamber is seated a piston E, which is exposed to the action of a weight F, that has a tendency to force the piston upward. In place of the weight I can use a spring, and an elastic diaphragm may be substituted for the piston.

By the action of the piston E the valves v are raised up and the fluid from the pressure-chamber B enters the reducing-chamber C and depresses the piston E, so that one or more of the valves v become closed and the pressure in the chamber C is reduced.

In view of the fact that the diameter of the piston E is very large as compared to the diameter of one of the valves v , it is obvious that a small diminution of the pressure in the chamber C causes the piston E to rise, and a small increase of the pressure in the chamber C causes the piston E to descend, and the pressure in the reducing-chamber C is automatically adjusted to the desired point.

It is obvious that the stems of the valves might be made of uniform length, and in that case the piston E would be provided with projections v' of different height, so as to open and close the valves v in succession. (See Fig. 3.) In place of such projections the piston may be provided with cavities of different depth without departing from my invention.

What I claim as new, and desire to secure by Letters Patent, is—

In a pressure-reducing valve the combination with the regulating-piston of a series of small valves which are depressed upon their seats by the initial pressure and means for actuating these valves successively by the action of the regulating-piston substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CARL HEINRICH PRÜSMANN.

Witnesses:

JULIUS MUTH,
M. C. MUTH.