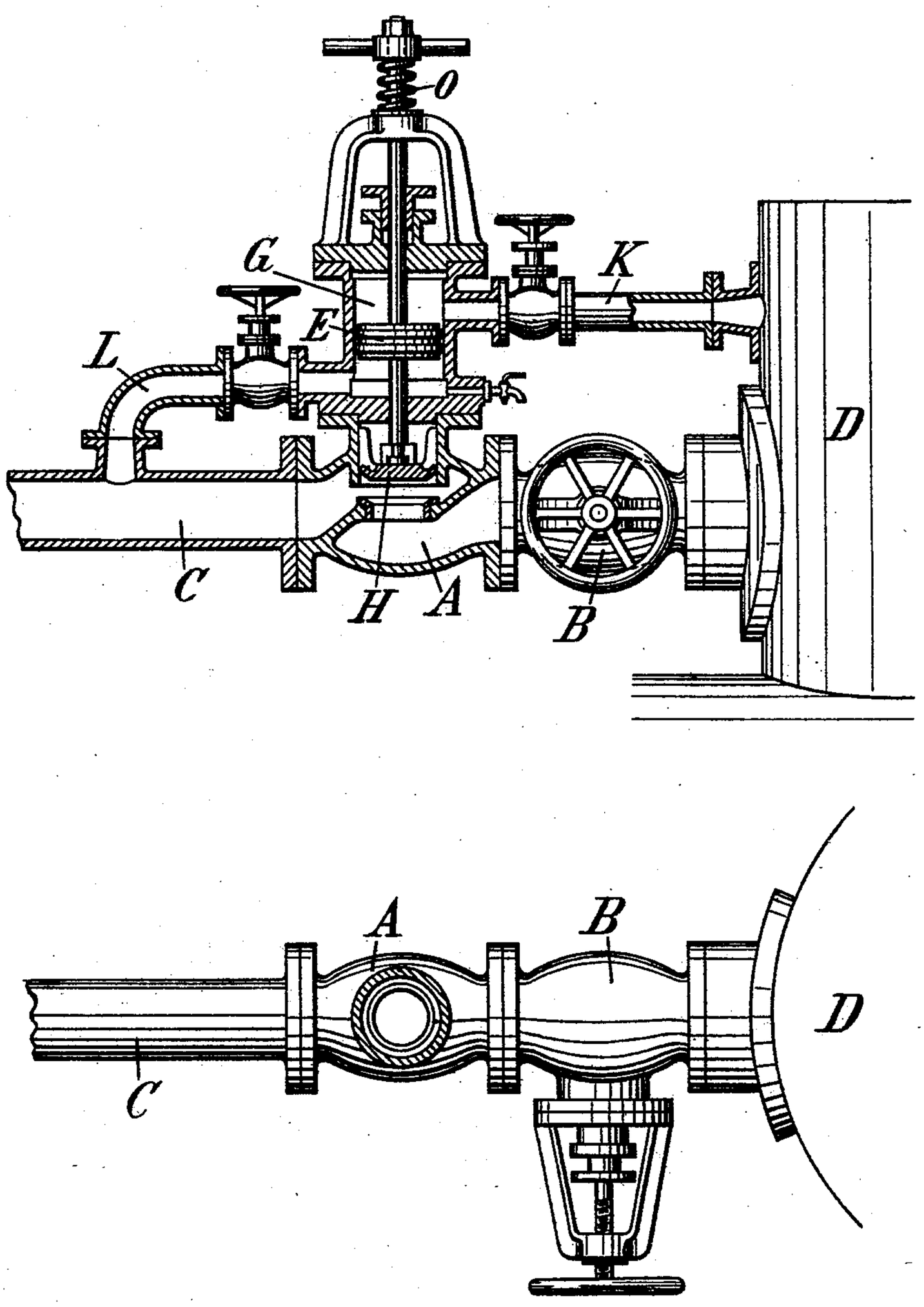
(No Model.)

H. GROSSMANN.

STEAM VALVE.

No. 500,492. Patented June 27, 1893.



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UNITED STATES PATENT OFFICE.

HEINRICH GROSSMANN, OF DORTMUND, GERMANY.

STEAM-VALVE.

SPECIFICATION forming part of Letters Patent No. 500,492, dated June 27, 1893.

Application filed August 29, 1892. Serial No. 444,490. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH GROSSMANN, a subject of the King of Prussia, residing at Dortmund, Westphalia, Prussia, German Empire, have invented certain new and useful Improvements in Self-Acting Closing Steam-Valves; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The present invention has for its object to automatically close a steam conduit between the boiler and the motor in stationary pumping engines, ships' engines or others, more especially in such engines located in inclosed spaces, so that the men and machinists are not exposed to be burned and scalded by the escaping steam, when the pipes burst, and also that the men working in spaces through which the conduits pass are protected in the same way against the effects of escaping steam.

The device more fully illustrated in the accompanying drawing by an elevation and a plan, is composed of a valve A arranged close to the ordinary stop valve B of the steam conduit C, which is in direct communication either with the dome D of a boiler, or with the steam collector of a battery of boilers. The valve A is provided with a cylindrical body G wherein a piston E can move up and down, fitting steam tight against the inner cylindrical surface and being connected by a rod with a valve plug H. The space above the piston E is set in communication with the boiler by means of a pipe K having a valve. From the space below the piston another pipe L with a valve is branched off leading into the conduit C. The opening of the pipe L in the cylindrical body G is so placed that the piston completely closes it up in its lowest position. When a breakage occurs in the steam conduit, the escaping steam will produce at once a reduction of the pressure. In the pipe C the tension will be lower than the pressure in the dome, steam collector or boiler D, so that the pressure of steam in pipe K, is higher than in pipe L. Consequently the piston E will move down in the cylindrical body G and the valve plug H of the valve A will be firmly pressed against its seat, so that no further steam can pass from the boiler into the conduit. It is evident that the piston E is made of a considerably larger section than the valve plug H so that the higher pressure in the pipe K is enabled to close the valve H, and to compress the spring O, serving to counterbalance the weight of the valve plug and rod and to keep it in this position, till the stop valve B has been closed.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

A valve in a steam conduit, governed by a piston working in a cylinder, one end of which communicates with the steam boiler, the other with the steam conduit in such a way that in case of rupture of the steam conduit the piston closes the valve.

In witness whereof I have hereunto set my hand, at Barmen, this 22d day of July, 1892.

HEINRICH GROSSMANN.

Witnesses:
WM. ESSENWEIN,
RUDOLPH FRICKE.