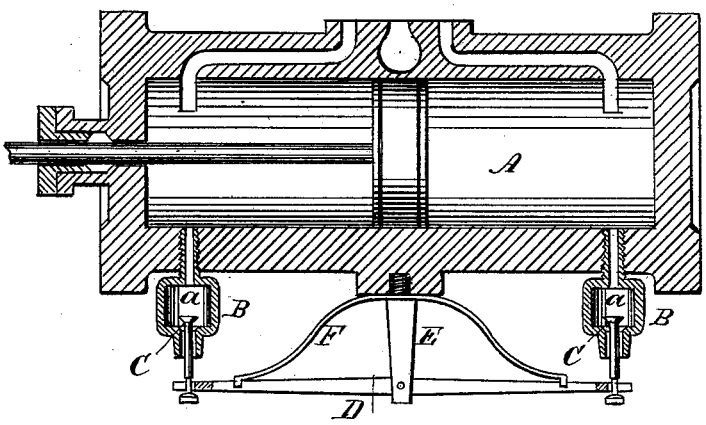
J. M. GRAHAM.

AUTOMATIC CYLINDER-COCKS.

No. 195,500. Patented Sept. 25, 1877.



WITNESSES:

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INVENTOR:

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BY

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UNITED STATES PATENT OFFICE.

JOSEPH M. GRAHAM, OF BLOOMFIELD, ASSIGNOR TO HIMSELF AND GEORGE ELLIOTT, OF BEDFORD, INDIANA.

IMPROVEMENT IN AUTOMATIC CYLINDER-COCKS.

Specification forming part of Letters Patent No. **195,500**, dated September 25, 1877; application filed May 12, 1877.

To all whom it may concern:

Be it known that I, JOSEPH M. GRAHAM, of Bloomfield, in the county of Greene and State of Indiana, have invented new and Improved Automatic Cylinder-Cocks, of which the following is a specification:

My invention relates to cocks for discharging the water of condensation from engine-cylinders; and it consists in the arrangement at each end of the cylinder of cups of sufficient capacity to contain water accumulating during one stroke, and in small valves placed in the said cups that open upward and are connected with a lever which is held by a spring, so that the valves are both open when the pressure is removed, but admits of the valves being alternately closed by the steam-pressure as it acts in the cylinder.

Referring to the drawing, which is a longitudinal section of an engine-cylinder having my improvement attached, A is the cylinder, and B B are cups screwed into the lower side of the cylinder near its ends. The cavity *a* of the cups B is of sufficient size to contain water accumulating during a single stroke of the piston. At the bottom of the cavity *a* a valve-seat is formed to which is fitted a valve, C, the stem of which extends downward through the discharge-opening of the cup. The stems of the valves C are connected with a lever, D, that is pivoted to a stud, E, that projects downward from the cylinder. A light spring, F, is secured to the under surface of the cylinder, and presses equally on both ends of the lever D, holding both of the valves C open when there is no pressure in the cylinder.

As steam is admitted to the cylinder it closes one of the valves while the other remains open, and when steam is admitted to the opposite end of the cylinder, the valve which before was open is closed by steam-pressure, and by virtue of the connection of the two valves with the lever D, the valve which was closed is now opened, permitting the escape of the water from the cavity *a*.

It will be seen that the valves are automatic in their action, and that the water escapes when the pressure is removed, so that the noise of escaping steam common to other devices for relieving engine-cylinders of water is by our improvement entirely avoided, and valves need no attention.

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

The combination, with the cups B, connected with cylinder A, of the lever D, connected valves C C, and the spring F, arranged to press at both ends of the lever D, as and for the purpose specified.

J. M. GRAHAM.

Witnesses:
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