

(No Model.)

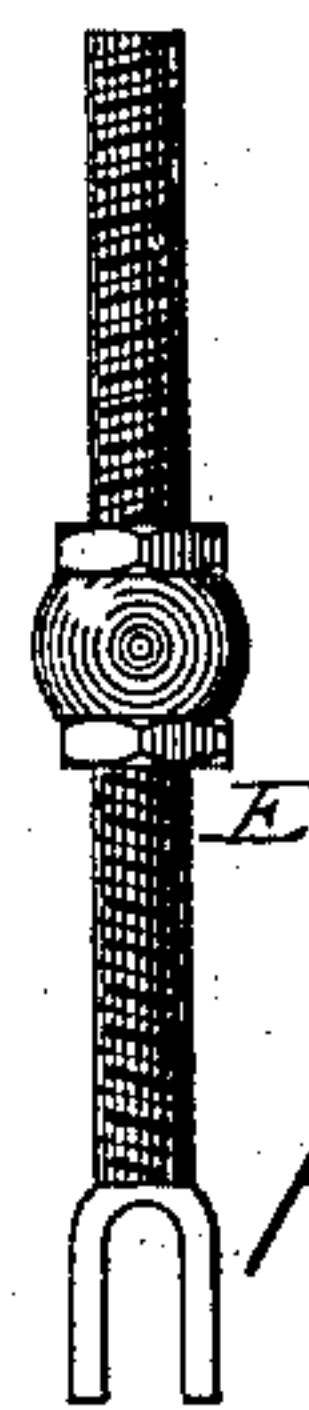
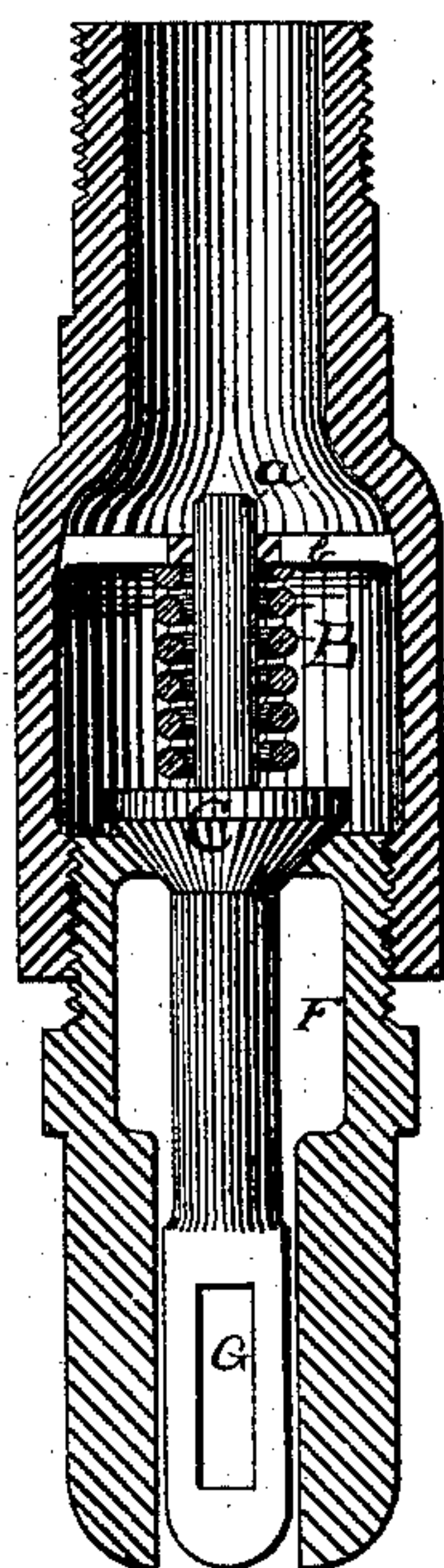
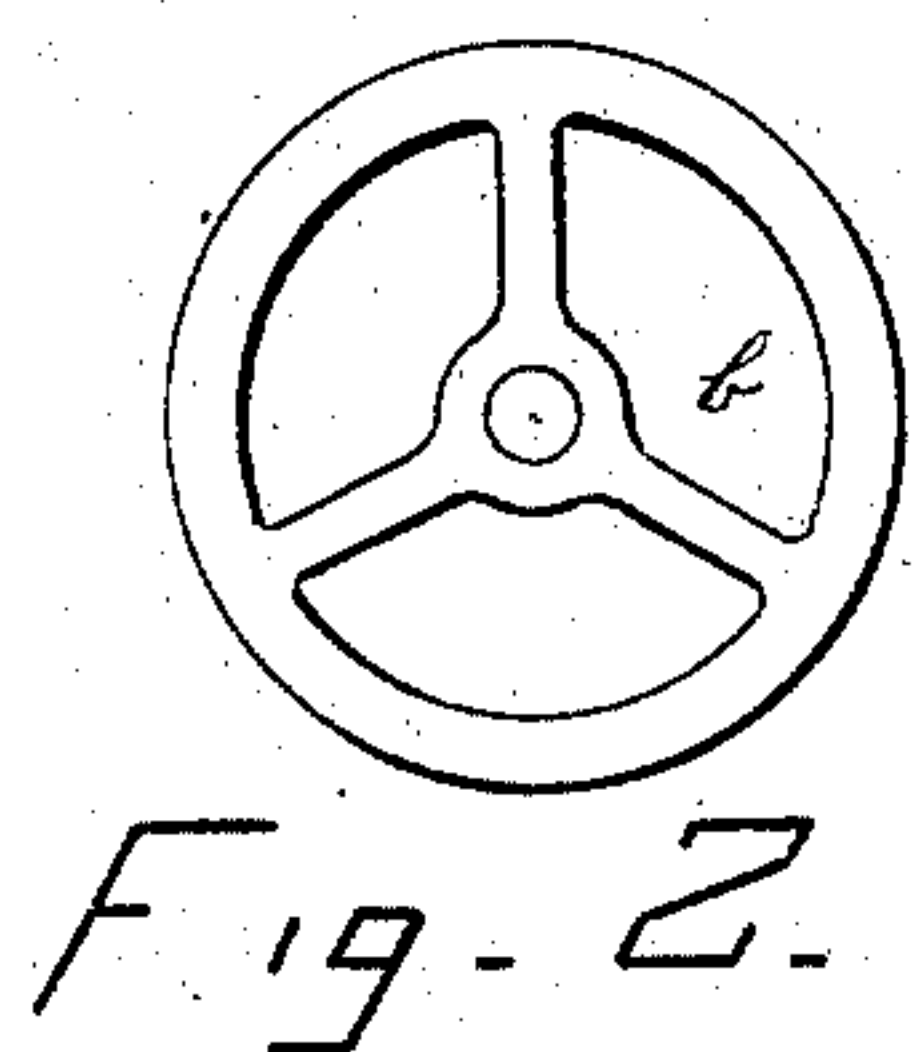
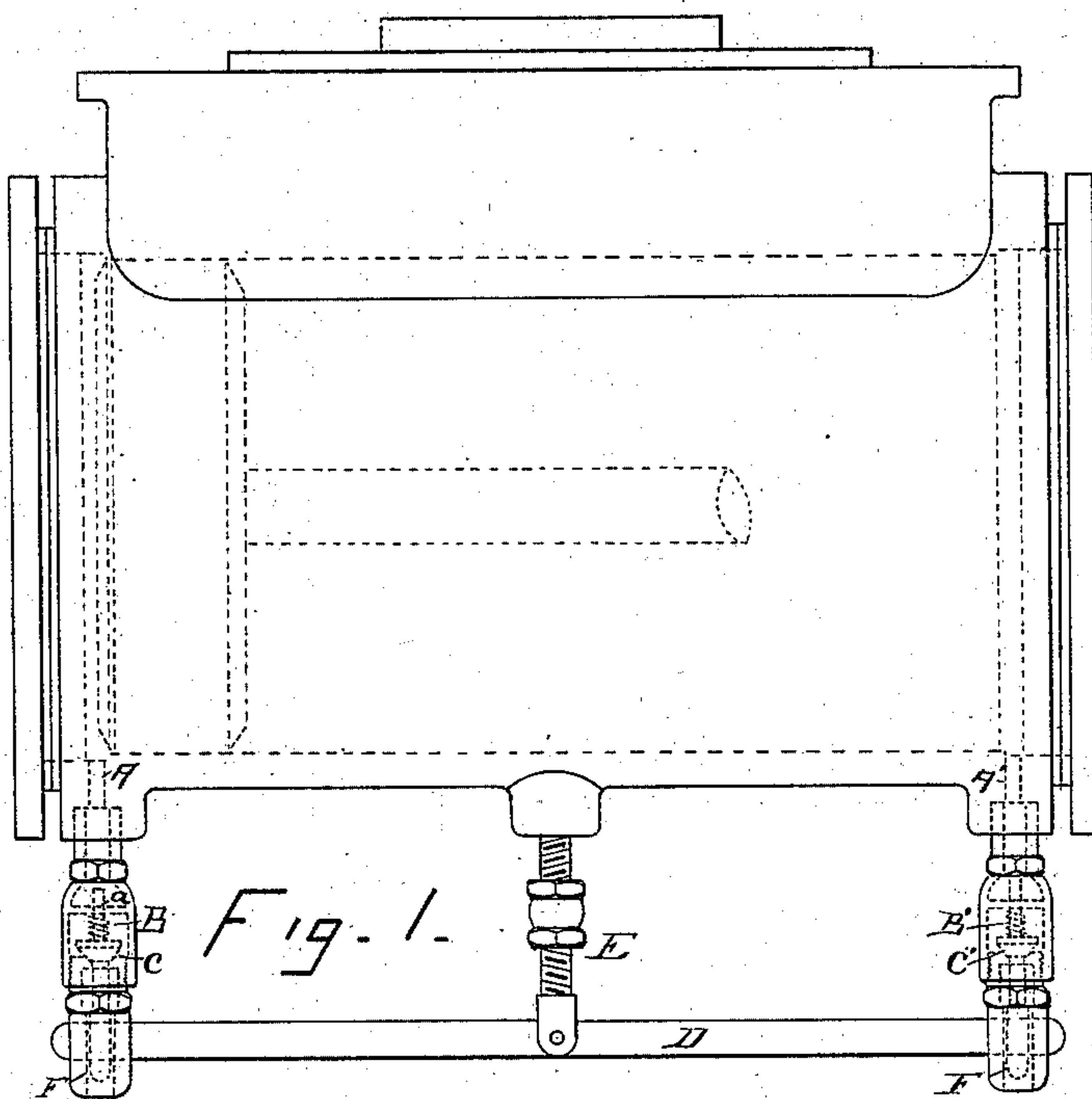
C. E. ULRICK & T. WILLIAMS.

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AUTOMATIC CYLINDER COCK.

No. 270,266.

Patented Jan. 9, 1883.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES E. ULRICK AND THOMAS WILLIAMS, OF PHILADELPHIA, PA.

AUTOMATIC CYLINDER-COCK.

SPECIFICATION forming part of Letters Patent No. 270,266, dated January 9, 1883.

Application filed May 18, 1882. (No model.)

To all whom it may concern:

Be it known that we, CHARLES E. ULRICK and THOMAS WILLIAMS, citizens of the United States, and residents of the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Cylinder-Cocks, of which the following is a specification.

The objects of our invention are to provide an automatic cylinder-cock which will receive and discharge the condensed water which accumulates in the cylinder after and during each stroke of the piston; and our invention consists of the combination of parts and devices hereinafter more fully set forth in the specification and claim.

In the accompanying drawings, forming part of this specification, and in which similar letters of reference indicate like parts throughout the several views, Figure 1 represents a side view of a cylinder with our invention attached; Fig. 2, a top view of the guide for the valve-spindle; Fig. 3, a side view of the adjustable fulcrum, and Fig. 4 an enlarged sectional elevation of the cylinder-cock.

As is usual in devices for discharging the water of condensation from engine-cylinders, we attach to each end of the cylinder cocks, which are alternately opened and closed by the action of the steam, the live steam entering the cylinder, closing the cock at that end and opening, through the medium of a connecting-lever, the cock at the other end, and allowing the condensed water to escape.

In our device the cocks are screwed into the openings A A' in the cylinder ends, and are provided with valves C C' and spiral springs B B', and they are coupled together by means of the rod or lever D, which is centered upon the adjustable fulcrum F. Fig. 4 shows a sectional elevation of our cylinder-cock. Its upper end is threaded, so as to screw into the cylinder, and it is furnished inside with a valve, C, having stems *a* and F, and a spiral spring B, so arranged as to always tend to close the valve. The lower valve-stem, F, is provided with a slot, G, which is adapted to receive an end of the lever D, through which motion is imparted from one valve to the other. The interior of the cock is further provided with

a guide, *b*, for the valve-spindle *a*, this guide also serving for the support against which the spring B presses in order to close the valve.

The lever D, which transmits motion from one valve to the other, may be of any convenient material and shape, and it is supported at its middle by the adjustable fulcrum F, which is bifurcated at its lower end, so as to securely hold the lever, which is secured to it by a pivot. By means of this fulcrum the valves may be set so that they will open very much or very little.

The operation of our device is as follows: The piston being in the position shown in Fig. 1, steam is admitted and drives the piston toward the other ends of the cylinder, and at the same time passes through the opening A into the cylinder-cock, tightly closing the valve C and throwing down the end of D, which is secured to the valve-stem F. This action opens wide the cock at the other end of the cylinder and allows the condensed water, which is being driven before the piston, to escape through the opening A' and the cock which connects with this opening into the air. On the return-stroke of the piston the action is reversed, and the first cock is opened and the second closed.

The spiral springs B B' assist in closing the valves C C', and we have no loss of steam by using our device.

We are aware that devices similar in many respects to the one that we have described have been used before, and therefore we do not claim such a device, broadly; but

What we do claim as our invention is—

In automatic cocks for discharging the condensed water from steam-engine cylinders, the combination of the valves C, having a valve-spindle, *a*, surrounded by a spiral spring, B, and a valve-stem, F, slotted so as to receive the ends of the lever D, with the lever D, and adjustable right and left handed screw E, substantially as and for the purposes described.

CHAS. E. ULRICK.
THOS. WILLIAMS.

Witnesses:

WM. H. EYRE,
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