

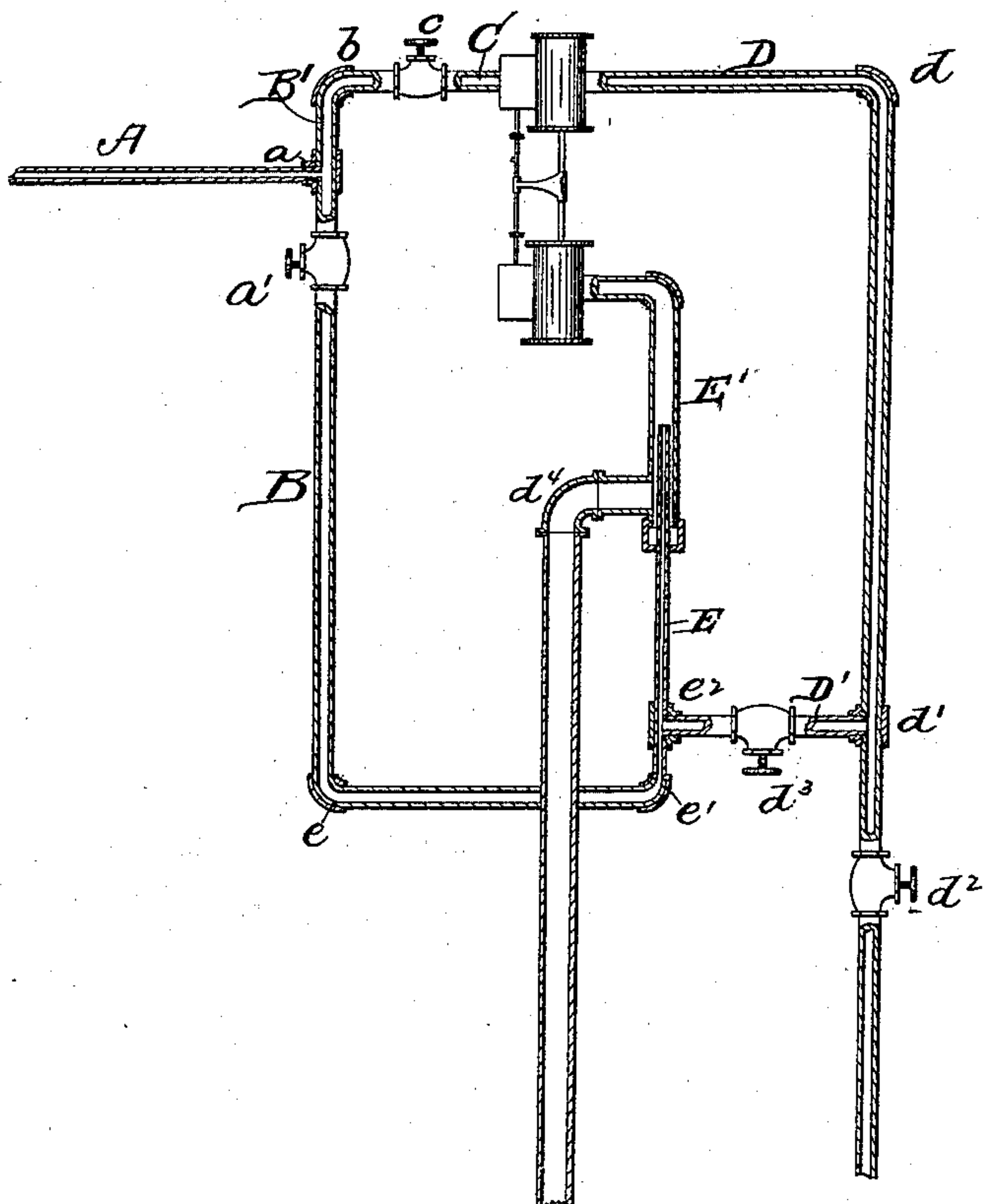
(No Model.)

P. BROWN, T. PARFERY & A. HEALY.

STEAM PUMP.

No. 264,134.

Patented Sept. 12, 1882.



Witnesses:

Fred F. Church.  
W. B. Hale.

Inventors:

Patrick Brown,  
Timothy Parfery,  
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# UNITED STATES PATENT OFFICE.

PATRICK BROWN, TIMOTHY PARFERY, AND ANTHONY HEALY, OF SCRANTON, PENNSYLVANIA.

## STEAM-PUMP.

SPECIFICATION forming part of Letters Patent No. 264,134, dated September 12, 1882.

Application filed July 10, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, PATRICK BROWN, TIMOTHY PARFERY, and ANTHONY HEALY, all of Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Pumps; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which the figure is a diagram view, showing the arrangement of our invention.

In steam-pumps used in mines it is often necessary to carry the steam in pipes a long distance before it enters the steam-chest of the pump, and the action of the cool air of the mines upon the conveying-pipes condenses the steam to a great extent. Also, in disposing of the exhaust-steam a great difficulty is encountered. By exhausting the steam directly into the air the atmosphere of the mines is much heated and dampened, to the great discomfort and serious injury to the health of the workmen. By the use of pipes conveying the exhaust to the open air the same trouble is found.

The object of our invention is to provide means for disposing of the drip from the induction-pipe before it enters the steam-chest of the pump by conducting it into the suction-pipe of the pump, and to dispose of the exhaust-steam by also conducting it into the suction-pipe of the pump.

Having stated the object of our invention, we will now proceed to describe the means for carrying it into effect.

A is the steam-conducting pipe, opening into the pipe B at the joint  $a$  below the level of the induction-port, one portion of the pipe B extending upward to the elbow  $b$  and serving as a continuation of the conducting-pipe and opening into the induction-pipe C, which pipe C is provided with a valve,  $c$ , the other portion of the pipe B extending downward and forming a drip-pipe, and is provided with a valve,  $a'$ , said pipe B being elbowed at the point  $e$  and again at the point  $e'$ , and opening at the point  $e^2$  into the pipe E.

D is the exhaust-pipe elbowed at the point  $d$ , and extending downward to the point  $d'$ , and there opening into the pipe D', and hav-

ing a portion opening into the air and provided with a valve,  $d^2$ , the pipe D' having a valve,  $d^3$ , and opening at the joint  $e^2$  into the pipe E, which pipe E extends upward into the suction-pipe E', said pipe E being about half the size of the suction-pipe of the pump and allowing the free passage of water around it, and opening into said suction-pipe E' at a point above the elbow  $d^4$  in said suction-pipe.

The operation of the pump is as follows: The water of condensation from the steam, coming through the steam-conducting pipe A, flows into the drip-pipe B, and is carried downward through the extensions of the pipe B, and is drawn by the action of the pump into the extension exhaust-pipe E, and from thence into the suction-pipe of the pump, the exhaust-steam being carried from the steam-chest through the exhaust-pipe D, and the extension D' into the farther extension E, and from thence into the suction-pipe of the pump, and thus preventing the escape of the exhaust-steam into the air of the mines, the valve  $d^2$  being only opened when it is desired to allow the steam to escape into the air.

Having thus described our invention, we claim as new—

1. The combination of the conducting-pipe A, opening into the drip-pipe B at a point below the level of the induction-port, with the upward extension pipe B', opening into the induction-pipe, substantially as described.

2. The combination of the exhaust-pipe D and extensions D' and E, provided with valves and opening into the suction-pipe of a pump, substantially as described.

3. The combination of the conducting-pipe A, the drip-pipe B, and extensions opening into the suction-pipe of the pump, and the exhaust-pipe D and extensions opening into the said suction-pipe, substantially as described.

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Witnesses:

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