

(No Model.)

T. BARBER.
STEAM CONDENSER.

No. 320,746.

Patented June 23, 1885.

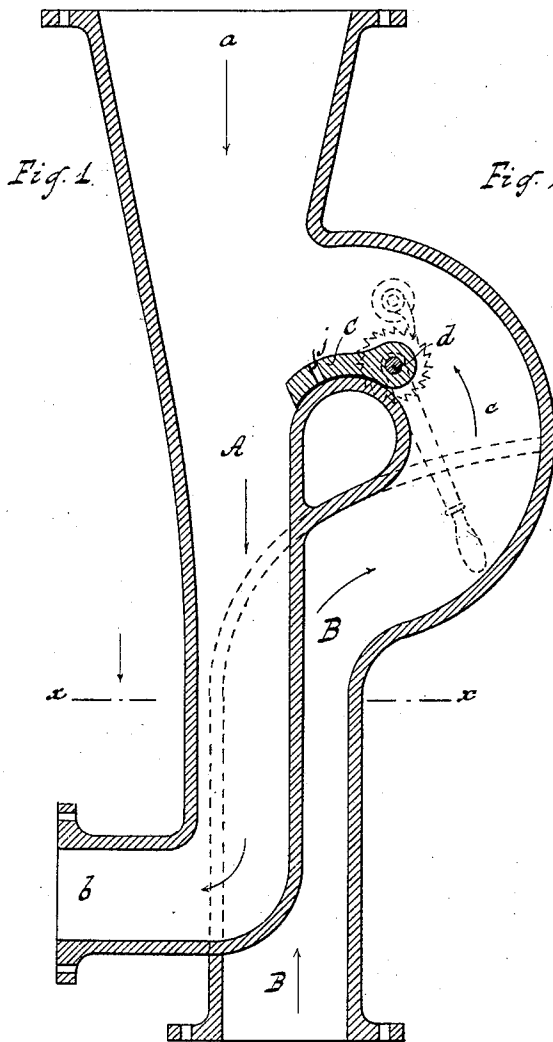
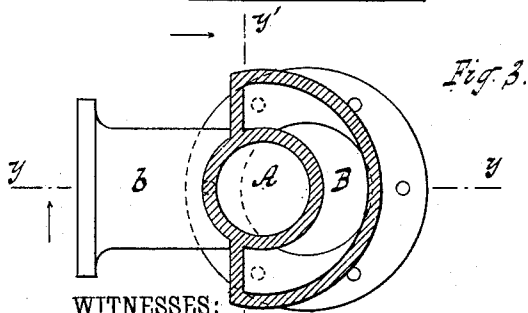
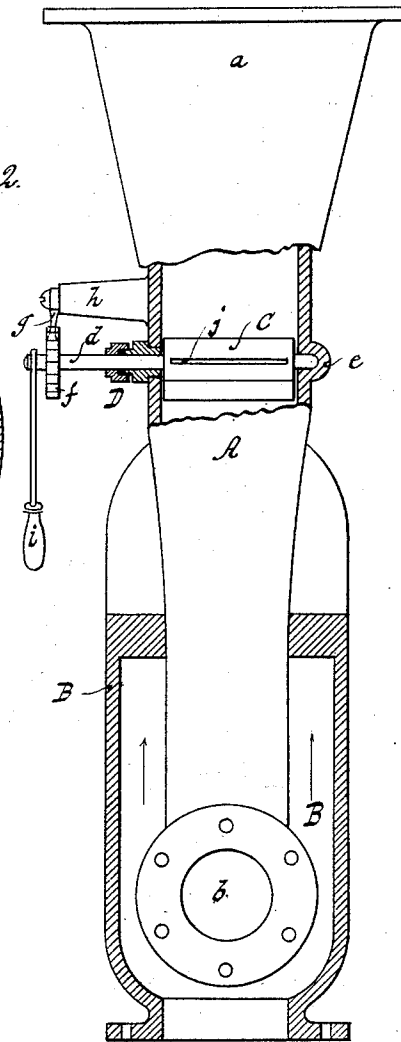


Fig. 2.



WITNESSES:

A. Faber du Faur, Jr.
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INVENTOR

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BY

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UNITED STATES PATENT OFFICE.

THOMAS BARBER, OF FLATBUSH, NEW YORK.

STEAM-CONDENSER.

SPECIFICATION forming part of Letters Patent No. 320,746, dated June 23, 1885.

Application filed January 29, 1885. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BARBER, a citizen of the United States, residing at Flatbush, in the county of Kings and State of New York, have invented new and useful Improvements in Steam-Condensers, of which the following is a specification.

The invention consists in a steam-condenser composed of condensing and cold-water pipes constructed and arranged as hereinafter described and claimed, and also in a condenser consisting of a condensing-pipe which receives the exhaust steam at one end, while the other end is adapted to be connected with the suction-pump, a cold-water pipe which partially surrounds said condensing-pipe and opens into the same near its receiving end, a valve situated in the cold-water pipe, and a slot or slots formed in said valve.

In the accompanying drawings, Figure 1 represents a longitudinal vertical section in the plane $y y$, Fig. 3, of my improved condenser. Fig. 2 is a vertical section of the same in the plane $y' y'$, Fig. 3. Fig. 3 is a horizontal transverse section in the plane $x x$, Fig. 1.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the condensing-pipe, which is provided with a conical receiving end, a , which end is adapted to be connected with the engine in a suitable manner to receive the exhaust steam thereof. The other end, b , of the condensing-pipe A is provided with a turn, and is adapted to be connected with a suitable suction-pump.

B is the cold-water pipe, which partially surrounds the condensing-pipe A and opens into the same near its receiving end. Before opening into the condensing-pipe A the cold-water pipe forms an approximate semicircular bend, c , in order that it may open into the condensing-pipe at about a right angle. The exhaust-steam from the engine passes along the condensing-pipe A in the direction of the arrows shown in said pipe, and is met at the point where the cold-water pipe opens into the said pipe by the cold injection-water forced or drawn through the cold-water pipe B in the direction of the arrows shown in said pipe. The water of condensation, together with the water injected, then passes down the pipe A and out of the condenser, and, since the said

condensing-pipe is partially surrounded by the cold-water pipe, any steam which was not condensed by the spray will be condensed by coming into contact with the cold walls of the condensing-pipe.

In order to regulate the supply of water, I place a valve, C, in the cold-water pipe B at or near the junction of said pipe with the condensing-pipe A. This valve C is mounted on a shaft, d , one end of which extends through the walls of the cold-water pipe, passing through a suitable stuffing-box, D, and the other end has suitable bearings, e , in the opposite wall.

On the end of the shaft which extends through the walls of the cold-water pipe is secured a ratchet-wheel, f , which is engaged by a pawl, g , swung from a pivot, h , secured to the cold-water pipe, and on this same end is secured a handle or lever, i , for turning the shaft. The teeth of the ratchet-wheel face in such a direction that when the handle is turned the valve will be held in any desired position. In order to obtain a good distribution of the water, the valve is provided with a slot or slots, j , extending across the same.

By arranging condensing and cold-water pipes as above described a condenser is obtained which acts to a certain extent as an injection-condenser and a surface-condenser, the result being that less injection-water is required for the condensation of the exhaust, and at the same time the construction is very simple, as the cold-water and condensing pipe can be cast integral, as shown in the drawings.

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

1. A steam-condenser consisting of a condensing-pipe, A, having an open end, a , for connecting with an engine, and provided at its other end with a lateral bend, b , for connecting with a suction-pump, and a cold-water pipe partially surrounding the condensing-pipe and having an approximately semicircular bend, c , so that the cold-water pipe opens into the condensing-pipe laterally at or near right angles thereto, substantially as described.

2. A steam-condenser consisting of a condensing-pipe, A, having one end, a , for connecting with an engine, and the other end, b ,

for connecting with a suction-pump, a cold-water pipe partially surrounding the condensing-pipe and opening thereinto at or near right angles thereto, and a pivoted swinging valve, C, arranged at the point of communication between the condensing and cold-water pipes for controlling the distribution of water into the condensing-pipe, substantially as described.

3. A steam-condenser consisting of a condensing-pipe, A, which receives the exhaust steam at one end, while its other end is adapted to be connected with the suction-pump, a cold-

water pipe, B, which partially surrounds said condensing-pipe and opens into the same near its receiving end, a valve, C, situated in the cold-water pipe, and a slot or slots formed in said valve, substantially as and for the purpose described.

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

THOMAS BARBER. [L. S.]

Witnesses:

W. HAUFF,

A. FABER DU FAUR.