(No Model.)

A. FLETCHER.

CONDENSER.

No. 336,306. Patented Feb. 16, 1886.

Fig. 1.

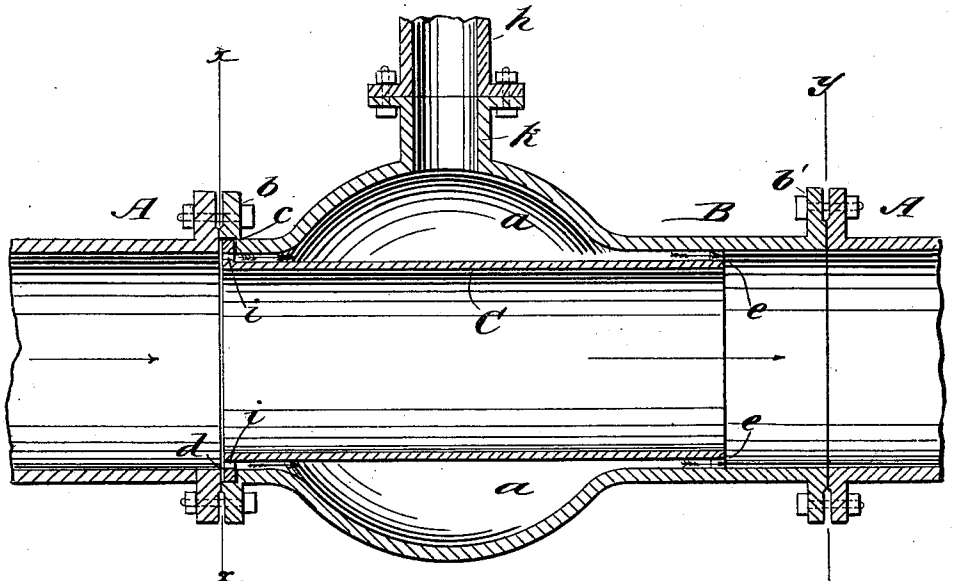


Fig. 2.

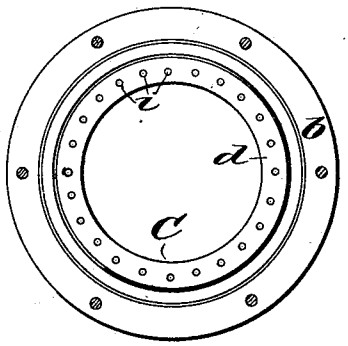
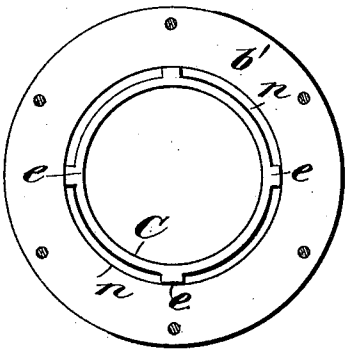


Fig. 3.



WITNESSES:

F. McArdle

C. Sedgwick

INVENTOR:

A. Fletcher

BY Munn & Co

ATTORNEYS.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

AUGUSTUS FLETCHER, OF HAZLETON, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND ROBERT E. CARTER, JR., OF SAME PLACE.

CONDENSER.

SPECIFICATION forming part of Letters Patent No. 336,306, dated February 16, 1886.

Application filed October 22, 1885. Serial No. 180,593. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS FLETCHER, of Hazleton, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Condenser, of which the following is a full, clear, and exact description.

My invention relates to the construction of a steam-condenser; and it consists of certain novel features of construction, as will be hereinafter explained, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal view of my improved condenser, representing the same in vertical section. Fig. 2 is a view taken on line *x x* of Fig. 1, and Fig. 3 is a view taken on line *y y* of Fig. 1.

My improved condenser may be placed at any desired point in the suction-pipe, which suction-pipe is shown at A A in the drawings. The condenser B consists of a section of pipe with a globe-shaped enlargement, as *a*, each end of the section being provided with a coupling-flange, as *b* or *b'*, wherewith the condenser is connected to the suction-pipe A A, as clearly shown. The flange *b* is formed with an annular recess, *c*, within which there is fitted the flange *d* of a cylinder, C, which extends through the globe-shaped enlargement *a*, and is supported at its projecting end by lugs *e e*. The flange *d* is formed with a number of induction ports or apertures, *i i*, the combined area of said ports being, however, much less than that of the eduction-ports *n n*, which are, as shown, formed between the lugs *e e*. The exhaust-steam is led into the enlargement *a* by a tube, *k*, which connects with the exhaust-steam pipe *h*.

The operation is as follows: When the pump is started, the cold water will be drawn through the pipes A and the condenser B in the direction of the arrow, and a portion of said water will find its way into the chamber *a* through the ports *i i;* but as the ports *i i* are of less combined area than the ports *e e* the chamber *a* will never be entirely filled. The steam from the cylinder striking against the flowing cold water in the chamber *a* will be condensed, and the water of condensation will be carried off with the regular flow through the chamber, the water in the chamber being kept cool by the flow in the main channel.

With such a condenser as has been described there is no jarring or other trouble to disturb the working of the pump, and I find a great saving is due to the use of the condenser by reason of the vacuum-pressure brought to bear upon the piston.

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

1. An improved condenser, consisting of a section of pipe formed with a globe-shaped enlargement, *a*, and a central imperforate cylindrical tube fitting within said pipe, and provided with induction and eduction ports at its ends, the area of the induction-ports being less than that of the eduction-ports, substantially as shown and described.

2. The herein-described condenser, consisting of a section of pipe formed with a chamber, *a*, into which the exhaust-steam is led, and through which a cylinder, C, is passed, said cylinder being formed with a flange, *d*, having ports *i i*, and with lugs *e e*, between which there are ports *n n*, the combined area of the ports *n* being in excess of that of the ports *i i*, substantially as described.

AUGUSTUS FLETCHER.

Witnesses:
C. W. KLINE,
FRED ZULLICK.