(No Model.)

J. R. BARRY.

STEAM TRAP.

No. 343,690. Patented June 15, 1886.

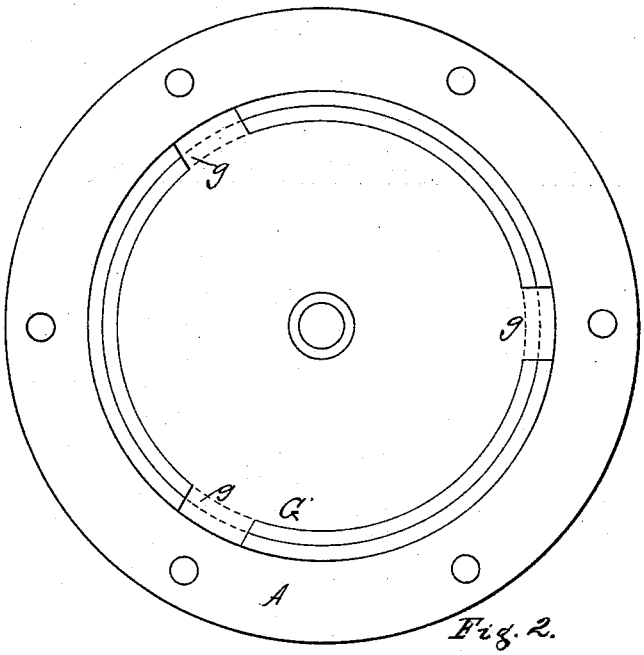

Fig. 2.

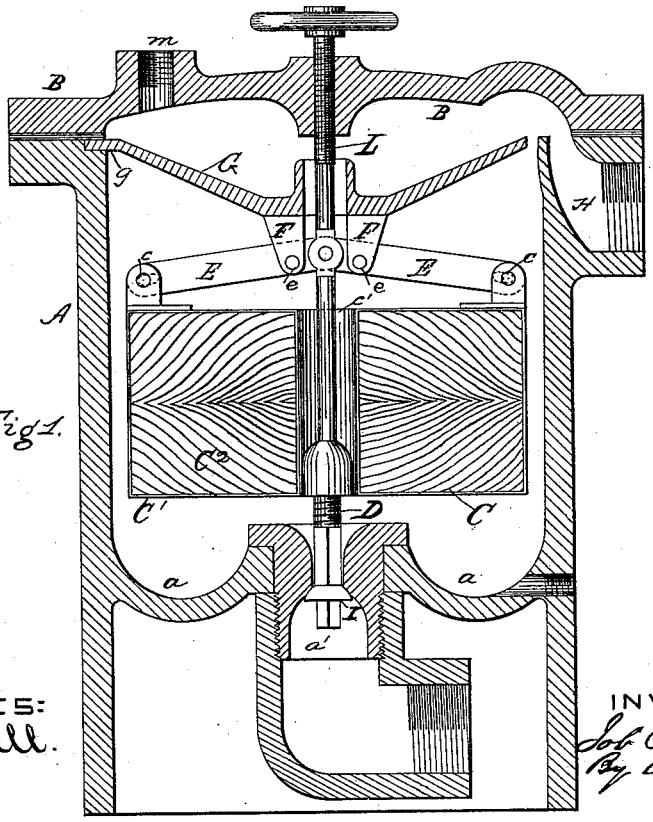

Fig. 1.

WITNESSES:
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JOB R. BARRY, OF PHILADELPHIA, PENNSYLVANIA.

STEAM-TRAP.

SPECIFICATION forming part of Letters Patent No. 343,690, dated June 15, 1886.

Application filed November 13, 1885. Serial No. 182,738. (No model.)

To all whom it may concern:

Be it known that I, JOB R. BARRY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Traps; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specifiaction, in which—

Figure 1 is a vertical section, and Fig. 2 a plan, of the trap with the top thereof removed.

My invention has for its object to improve the efficiency and lessen the cost of the manufacture of steam-traps.

My improvements consist in the peculiar construction and combination of parts hereinafter fully described and specifically claimed, having reference particularly to the combination, with the valve of the trap, of a counterpoise of peculiar construction connected to the stem of said valve by means of levers, as hereinafter fully set forth.

Referring to the accompanying drawings, A represents the shell of the trap, which is a casting preferably cylindrical in form, having a bottom, *a*, formed integral therewith, and a top, B, which is flange-bolted to the body. Said body has an inlet-opening, H, below its rim, said inlet ascending or trending upwardly, and the bottom *a* has an outlet, *a'*, in which the valve I has a seat, said valve opening downwardly, as shown.

D is the valve-rod, to which is pivotally connected at its upper end the inner ends of levers E E. Said levers have their fulcra at *e e* in lugs F F, which are cast integral with and depend from the under side of a dish-shaped casting, G, formed with the peripheral lugs *g g*, which rest upon the upper edge of the body A, the outer ends of the said levers being pivotally connected at *e e* to a counterpoise, C. Said counterpoise is a block of wood thoroughly incased in copper or other metallic integument C', having a vertical central passsage, *c'*, for the valve-rod D. Said block before being incased is thoroughly saturated with linseed-oil, to prevent the possibility of the heat of the water creating a pressure in the counterpoise that would rupture the copper casing or increase the size or bulk of the block C', and thereby alter its specific gravity. The specific gravity of the counterpoise incased is slightly greater than that of water, so that it will barely sink in the latter. The tendency of the counterpoise, therefore, is to descend, and thereby to draw up the valve-rod and hold the valve firmly against its seat, and its weight is such that it will operate to keep the valve closed against a pressure of a hundred pounds to the square inch (or a greater pressure, if desired) if there be no water in the trap above the bottom of the counterpoise; but as the water, which enters at H with the steam, rises in the trap around the counterpoise, the tendency of the latter to keep the valve to its seat is lessened in proportion to the depth of water in the trap, and when the water reaches the top of the counterpoise the tendency of the latter to keep the valve closed is completely neutralized. Then, if there be any pressure at all in the trap, or but a few inches of water above the top of the counterpoise, the valve will open and allow the water in the trap to escape until the level of the water in the trap falls to a point at which the pressure balances the counterpoise, when the water will continue to flow out of the trap in a continuous stream as rapidly as it flows in. As there is always a body of water in the bottom of the trap under ordinary conditions of use, the steam cannot escape.

L represents a screw, which fits in a threaded opening in the center of top B and enters an opening in the center of the casting G. By turning down the screw the valve may be opened or depressed from its seat for cleaning or "blow-out" purposes. An opening in the top B, for the reception of an air-valve, is shown at *m*.

What I claim as my invention is as follows:

1. In a steam-trap, the combination, with a valve, I, having a rod, D, of a counterpoise for said valve, such counterpoise consisting of a wooden block having a metal casing, substantially as shown and described.

2. In a steam-trap, the combination, with the valve I and its rod D, of counterpoise C,

consisting of an incased wooden block, levers E E, and support G, having lugs F F, for sustaining said levers, said several parts being constructed and arranged for operation substantially as shown and described, and operating in the manner set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of June, 1885.

JOB R. BARRY.

Witnesses:
R. DALE SPARHAWK,
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