J. L. CHAPMAN.

Steam-Trap.

No. 202,520. Patented April 16, 1878.

Fig. 1.

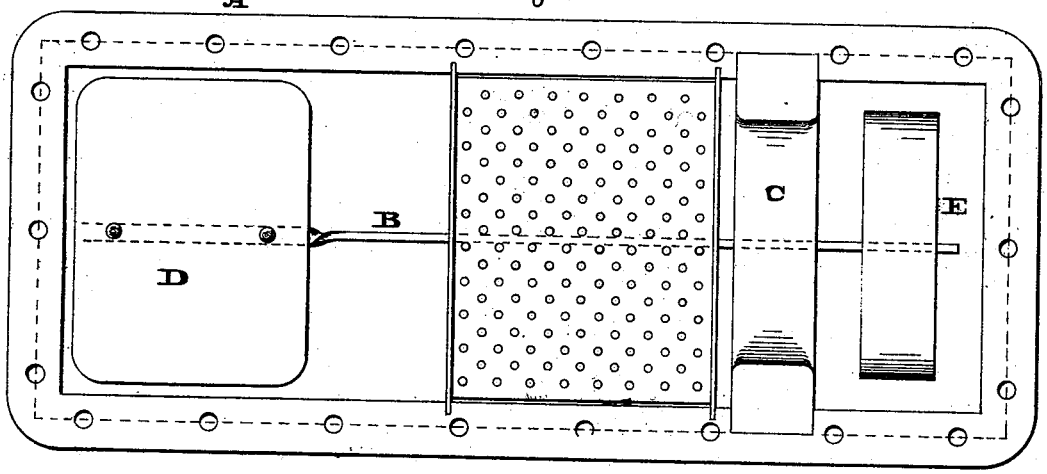


Fig. 2.

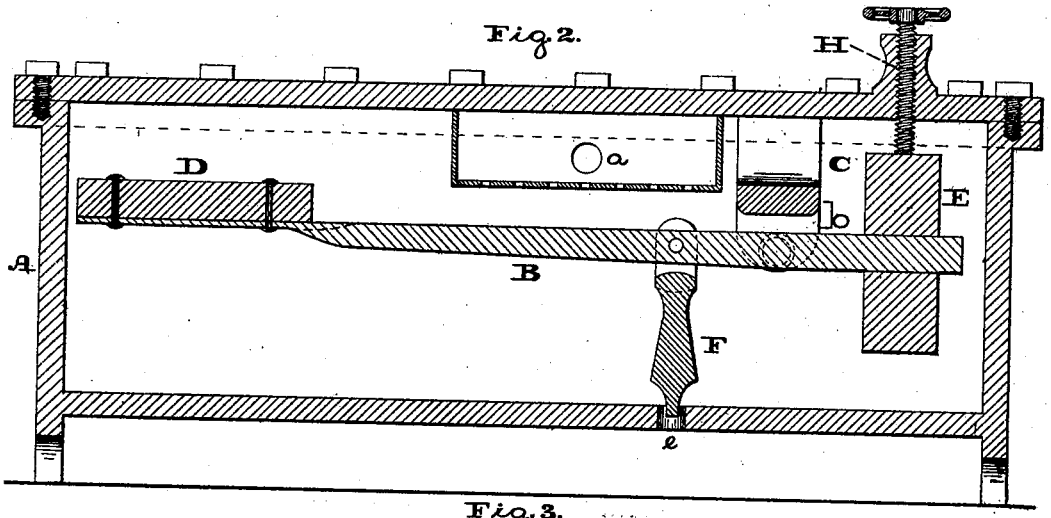
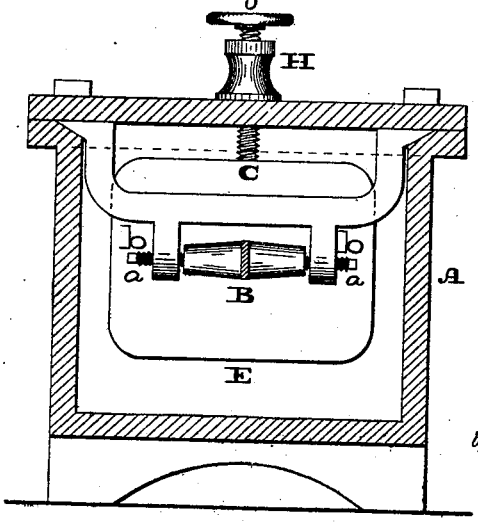


Fig. 3.



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JOSEPH L. CHAPMAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JAMES WATSON, OF SAME PLACE.

IMPROVEMENT IN STEAM-TRAPS.

Specification forming part of Letters Patent No. **202,520**, dated April 16, 1878; application filed March 21, 1878.

To all whom it may concern:

Be it known that I, JOSEPH L. CHAPMAN, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Steam-Traps, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a top or plan view of the interior of the trap embodying my invention. Fig. 2 is a central vertical longitudinal section thereof. Fig. 3 is a transverse vertical section in line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a steam-trap in which the valve may be readily operated, and its lever and connected parts easily removed from the box or chamber for the purpose of cleansing and repairs.

It also consists of a screw, passing through the top plate of the box, and adapted to depress one end of the valve-lever for opening said valve.

It also consists of a float with a counterbalance arranged within the box, so that the float is always on top of the water, and a collapsible hollow float is avoided, the lever which carries said float and counterbalance being suspended from a saddle by means of screw-pivots, whereby the lever may be readily removed and applied, and, as it is held by the points of the pivots, the expansion of parts will but slightly increase the friction of the fulcrum of said lever.

Referring to the drawings, A represents the steam-box or condensing-chamber, into which steam is admitted through a pipe entering at *a*. B represents a lever, which is hung on screw-pivots *b*, which are fitted to ears *d*, on a saddle, C, removably suspended within the box from near the upper ends of the sides thereof. To one end of the lever is attached a float, D, of stone, iron, or other solid material, and to the other end a counterpoise, E. From the lever, at a point between its fulcrum and float, there is hung a valve, F, whose seat *e* constitutes an outlet at the bottom of the box.

It will be seen that the lever, with its connected float, counterpoise, and valve, is suspended from the saddle C, whereby the latter and the several parts just enumerated may be readily removed from the box.

G represents a strainer, which is secured to the interior of the box at a point below the steam-inlet *a*, and it is readily removable therefrom, said strainer collecting packing, sediment, &c., from the engine.

When the condensed steam enters the box, the water of condensation lifts the float and thus opens the valve, whereby the water may escape until the float lowers sufficiently to again close the valve, a quantity of water remaining in the box to prevent the blowing off of steam through the valve-seat.

The float is made of stone, iron, or other solid material. The counterpoise or counterbalance is applied to the lever. By this construction of the float, I dispense with a hollow float, which is liable to leak and collapse.

When it is desirable to open the valve, when the float is at its lowest point, for the purpose of draining the box—say, in cold weather—I employ a screw, H, which is fitted to the top plate of the box, and adapted to bear against the counterpoise E, or adjacent portion of the lever B, without being connected thereto. By properly rotating said screw the counterpoise end of the lever is depressed, thus raising the valve, and permitting the escape of the water through the uncovered outlet *e*. By rotating the screw in the reverse direction, the lever is no longer controlled thereby, and the float is again operative by the action of the water.

It will also be noticed that the parts attached to the valve-lever and saddle are placed within the box, whereby they are not liable to fracture during transportation and use, and the trap is made cheap and compact.

The lever, being held by the pivots *b*, may be readily removed from and applied to the saddle, and the points of said pivots permit the lever to turn with great ease, the friction at the fulcrum not materially increasing on the expansion of parts.

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

1. The lever B, with the valve F and float

D, in combination with the removably suspended saddle C, substantially as and for the purpose set forth.

2. The valve-lever B, with float D and counterpoise E, in combination with the valve-operating screw H, passing through the top plate of the box A, and disconnected from the valve-lever, substantially as and for the purpose set forth.

3. The solid float D and counterpoise E, in combination with the lever B, carrying said float and counterpoise at opposite ends, and the valve F intermediate thereof, the lever being suspended from the saddle C by means of the screw-pivots *b*, substantially as and for the purpose set forth.

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Witnesses:
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