(No Model.)

F. FUNKE.

STEAM TRAP.

No. 452,128. Patented May 12, 1891.

Fig. 1.

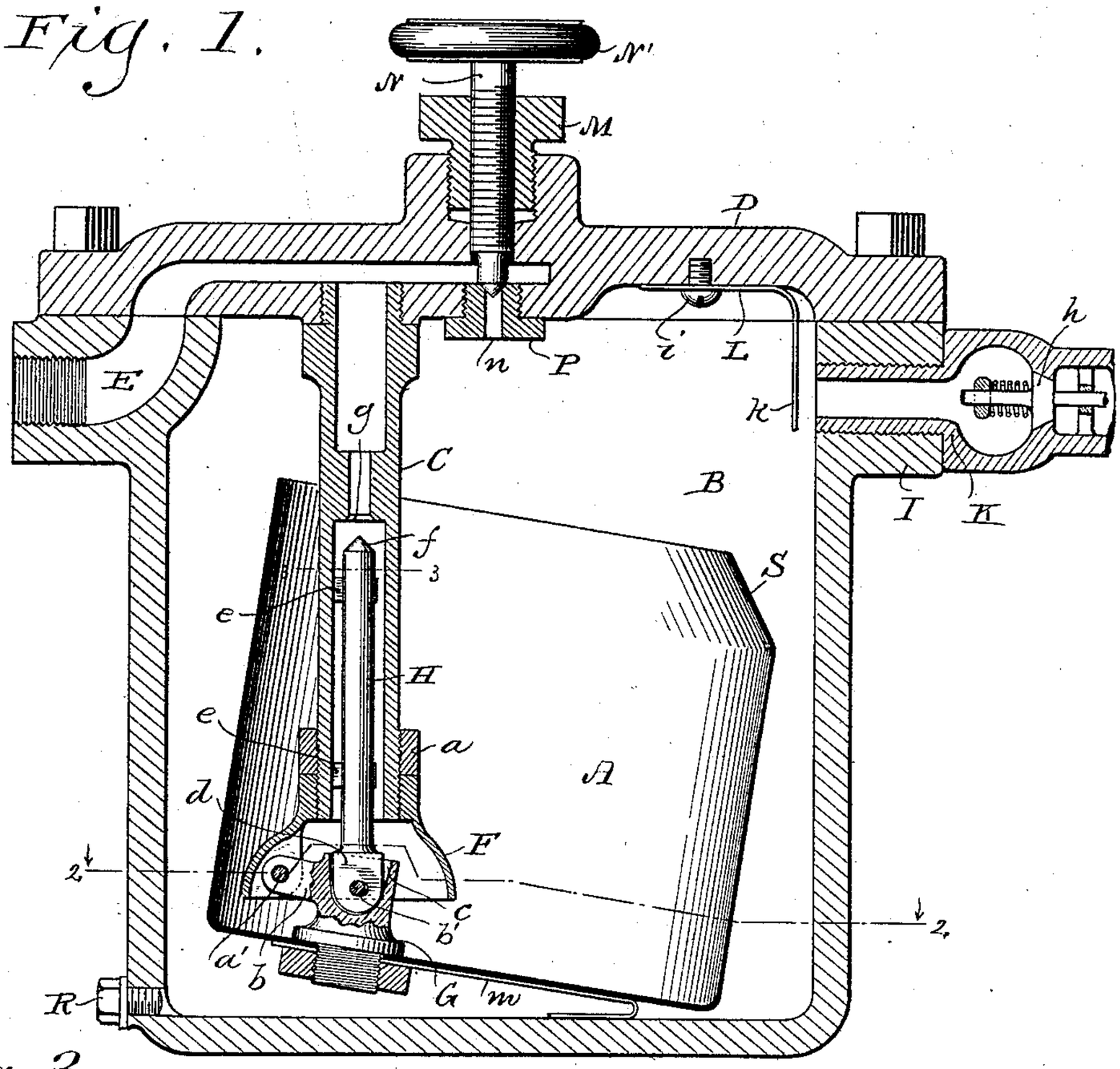


Fig. 3

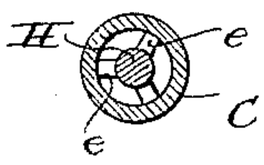
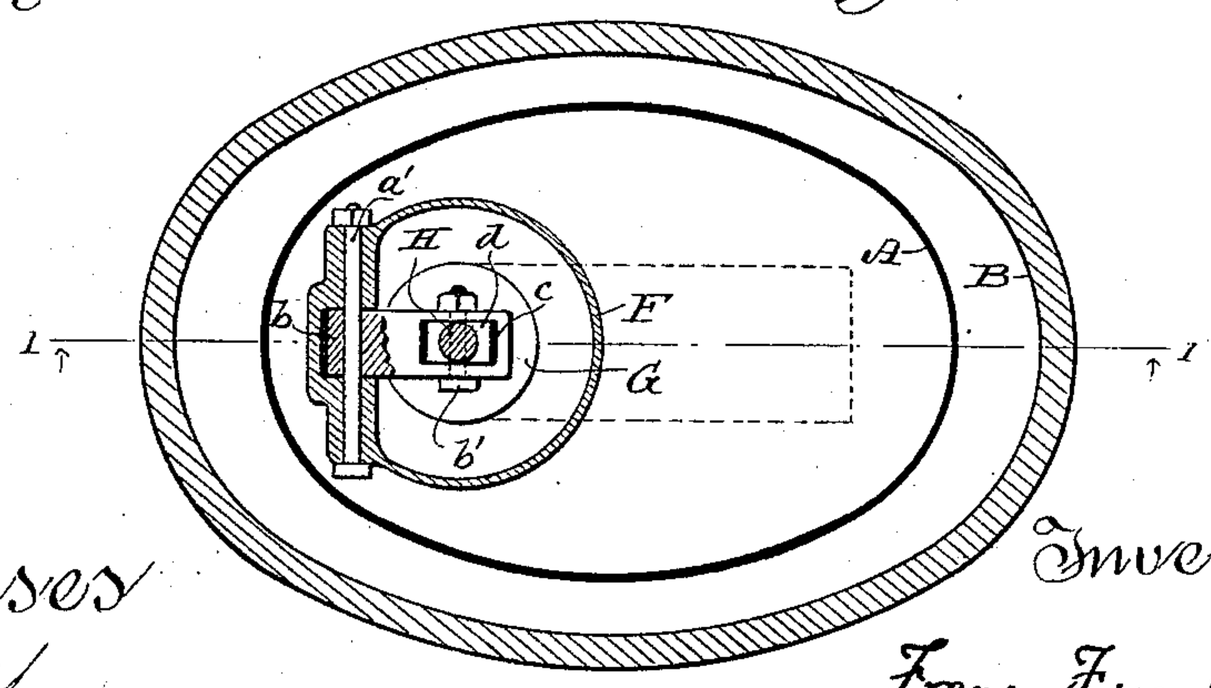


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANZ FUNKE, OF MILWAUKEE, WISCONSIN.

STEAM-TRAP.

SPECIFICATION forming part of Letters Patent No. 452,128, dated May 12, 1891.

Application filed December 2, 1890. Serial No. 373,280. (No model.)

To all whom it may concern:

Be it known that I, FRANZ FUNKE, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Steam-Condensers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to improvements in steam-traps; and it consists in certain peculiarities in construction and combination of parts to be hereinafter fully described with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 is a transverse section of my device on line 1 1 of Fig. 2; Fig. 2, a horizontal section of the same on line 2 2 of Fig. 1, and Fig. 3 a detail section on line 3 3 of Fig. 1.

Referring by letter to the drawings, my device comprises a steam-trap having a cup A, located in the condenser-chamber B, and a tube C, screwed into the top wall D of the condenser-chamber B and communicating with the escape-opening E. This tube C extends downward from the top wall D of the condenser-chamber and is provided on its lower portion with a cap F, screw-threaded thereto. A jam-nut *a* prevents the cap F from turning or becoming loose.

Secured to the bottom of the cup A is a standard G, having a laterally-extending arm *b*, which is pivoted in the cap F, as shown at *a'*. In said standard G is a socket *c*, having the lower end *d* of a valve-rod H pivoted therein, as shown at *b'*, forming with the pivoted arm *b* an elbow-joint, for the purpose to be hereinafter set forth. Said valve-rod H extends upward through the tube C, being centered by means of lugs *e e* on said rod, the upper end of the valve-rod H being pointed, as shown at *f*, and having its seat at *g* in the tube C. Screw-threaded in a boss I in the upper part of the vertical wall of the condenser-chamber is a steam-pipe K, located in which is a spring-controlled check-valve *h*. A spring L is secured, as at *i*, to the top wall D of the condenser-chamber, and has a bent portion *k* extending downwardly in front of the opening of the steam-pipe K.

Secured to the bottom of the cup A is a spring *m* to prevent the violent contact of the aforesaid cup with the bottom of the condenser-chamber when the water overflows into the former, as hereinafter described.

A stuffing-box M is located in the upper part of the top wall D of the aforesaid chamber, having a screw-threaded opening therein for the reception of the screw-rod N, having a hand-wheel N', and which extends downward to and closes the opening *n* in the cap P, which is screwed into the top wall D of the condenser-chamber, and when it is desired to admit air into said condenser-chamber B (through the escape-opening E) the hand-wheel N' is turned and the point of the screw-rod N raised from its seat in the opening *n* in the cap P.

The plug R (shown in Fig. 1) is provided for the purpose of draining the condenser-chamber when it may become necessary, this being facilitated by the admission of air in the manner just described.

Steam is forced through the pipe K at a high pressure, thereby forcing and keeping open the check-valve *h*. Upon entering the condenser-chamber it is intercepted by the arm *k* of the spring L, which deflects it and causes it to spray downward, thereby preventing the steam from entering the cup A and being condensed therein. To the same end the wall of the cup A presents on this side a beveled surface, as shown at S. As the steam condenses the water gradually rises in the bottom of the condenser-chamber and floats the cup A, thereby forcing upward the valve-rod H by means of the elbow-joint mechanism hereinbefore described. This movement of the valve-rod H causes its valve portion *f* to fit into its seat *g* and prevents the escape of steam. The cup A being prevented from rising any farther by the closing of the valve in the tube C, the water gradually rising, presently overflows into the aforesaid cup, when the latter by its own gravity sinks to the bottom of the condenser-chamber, withdrawing the valve portion *f* of the valve-rod H from its seat *g*. The pressure of the steam in the condenser-chamber then forces the water in the cup A through the tube C and out through the escape-opening E.

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

The combination of the chamber B, having the valve-controlled steam-inlet K, and the air-passage *n*, communicating with the escape-opening and governed by the screw-rod N, the said escape-opening E, and the therewith-connecting tube C, the rod H, secured in a socket in the standard, and the cap A, secured to the tube C, as described, and provided at bottom with the spring *m*, all substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

FRANZ FUNKE.

Witnesses:
H. G. UNDERWOOD,
WM. KLUG.