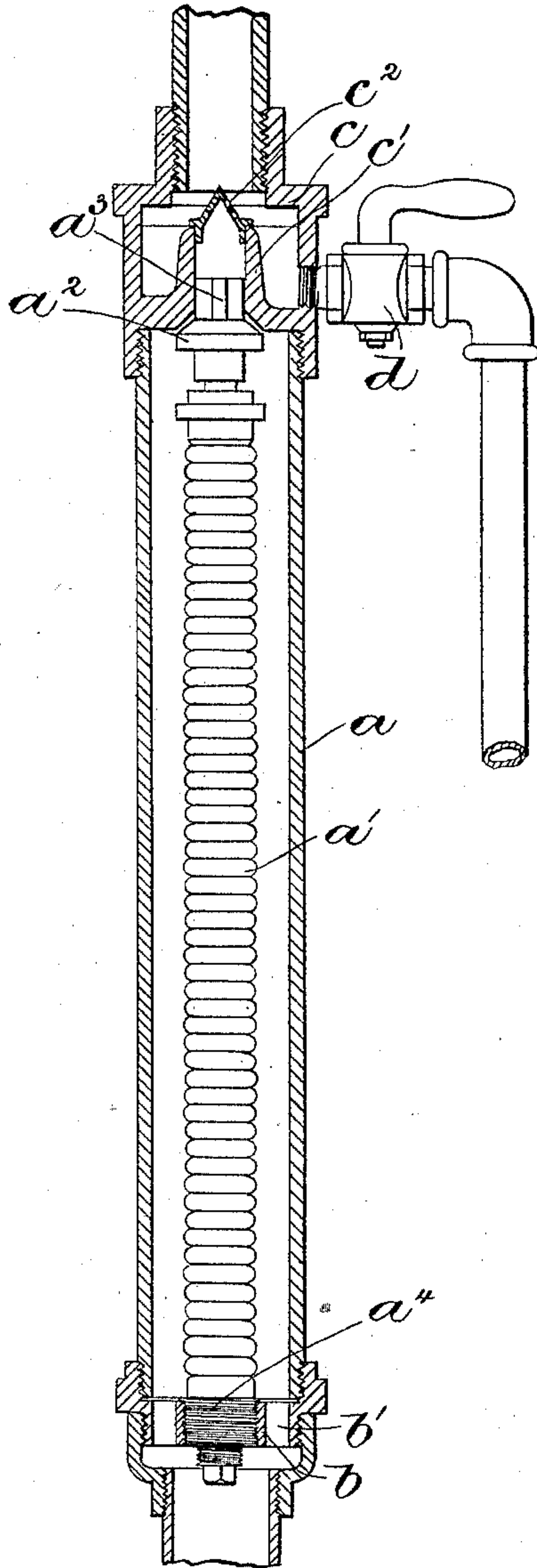


(No Model.)

C. F. BRIGHAM.  
STEAM TRAP.

No. 467,634.

Patented Jan. 26, 1892.



Witnesses:

Edward F. Allen.  
John W. Daley.

Inventor:

Charles F. Brigham,  
by Leroy & Gregory Attys.

# UNITED STATES PATENT OFFICE.

CHARLES F. BRIGHAM, OF BOSTON, MASSACHUSETTS.

## STEAM-TRAP.

SPECIFICATION forming part of Letters Patent No. 467,634, dated January 26, 1892.

Application filed December 5, 1890. Serial No. 373,639. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES F. BRIGHAM, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Steam-Traps, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve the construction of steam-traps. In accordance with this invention a thermostatic valve is contained in a shell or case of suitable length to receive it, said thermostatic valve consisting of a longitudinally-expansible tube, preferably corrugated and adapted to be filled or not, as desired, with expansible liquid. A chambered block, which may be a casting, is secured to said shell or case, which has formed in it, and projecting centrally into the chamber thereof, a nipple having a passage through it communicating with the interior of the shell or case. On the under side of the chambered block opposite the nipple a valve-seat is formed for the thermostatic valve, and said valve is provided with a suitable guide or leg which enters the passage through the nipple. A strainer, preferably conical in shape, may be secured to the nipple within the chambered block. That portion of the chambered block around the nipple serves as a sediment-receiver for scale and the like, and to this part of the block a blow-off cock is secured.

The drawing shows in vertical section a steam-trap embodying this invention: The shell or case *a* is made of any suitable length, and for this purpose I preferably utilize a piece of pipe. A thermostatic valve is placed within the shell or case *a*, it consisting, as herein shown, of a longitudinally-expansible tube *a'*, preferably corrugated, and adapted to be filled or not, as desired, with expansible liquid, and having at one end a valve *a<sup>2</sup>* provided with a guide or leg *a<sup>3</sup>* and having at its opposite end a screw-threaded portion *a<sup>4</sup>*. The thermostatic valve is adjustably held in position at one end by its screw-threaded portion *a<sup>4</sup>* entering a screw-threaded plate or cap *b*, which is secured to one end of the shell or case *a*. The plate or cap *b* has several ports, as *b'*, through it. A chambered block *c* is secured to the opposite end of the shell or case *a*, it having formed within it and projecting centrally into it a nipple *c'*, having a passage

through it. The under side of the chambered block *c* opposite the nipple *c'* is formed to serve as a seat for the valve *a<sup>2</sup>*, and the guide or leg *a<sup>3</sup>* of said valve enters the passage through the nipple *c'*. The nipple *c'* is directly opposite the entrance to the steam-trap, and it has secured to it a conical strainer *c<sup>2</sup>*. The annular chamber surrounding the nipple *c'* is quite deep, as shown, and serves as a sediment chamber or receiver for scale, dirt, and the like. At the lower end of this annular sediment-chamber a blow-off cock *d* is secured. The steam entering the chamber *c* may pass through the nipple *c'* and, if the valve is open, into the shell or case *a* and out through the ports *b'*. As the tube *a'* expands, the valve *a<sup>2</sup>* closes against its seat and the progress of the steam is checked. As the water of condensation gradually rises in the chamber *c*, it flows over the top of the nipple *c'* and passes into the shell or case *a* on a very slight opening of the valve. By opening the blow-off cock *d* any sediment or water may be immediately removed. By making the tube *a'* corrugated it may be slightly compressed if overheated.

I claim—

In a steam-trap, the combination of the following instrumentalities, viz: the shell or case *a*, a thermostatic valve contained therein, composed of a longitudinally-expansible tube preferably corrugated and having at one end the valve *a<sup>2</sup>* and at the opposite end the portion *a<sup>4</sup>*, by which said thermostatic valve is adjustably supported in the shell or case *a*, the chambered-block *c* at the entrance to said trap, the nipple *c'*, having a passage through it and projecting into the chamber of said block to thereby form an annular sediment-chamber, a blow-off cock at the lower end of said sediment-chamber, and a valve-seat formed on the under side of said chambered block *c* opposite said nipple *c'* to serve as a seat for the valve *a<sup>2</sup>*, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES F. BRIGHAM.

Witnesses:

BERNICE J. NOYES,  
EMMA J. BENNETT.