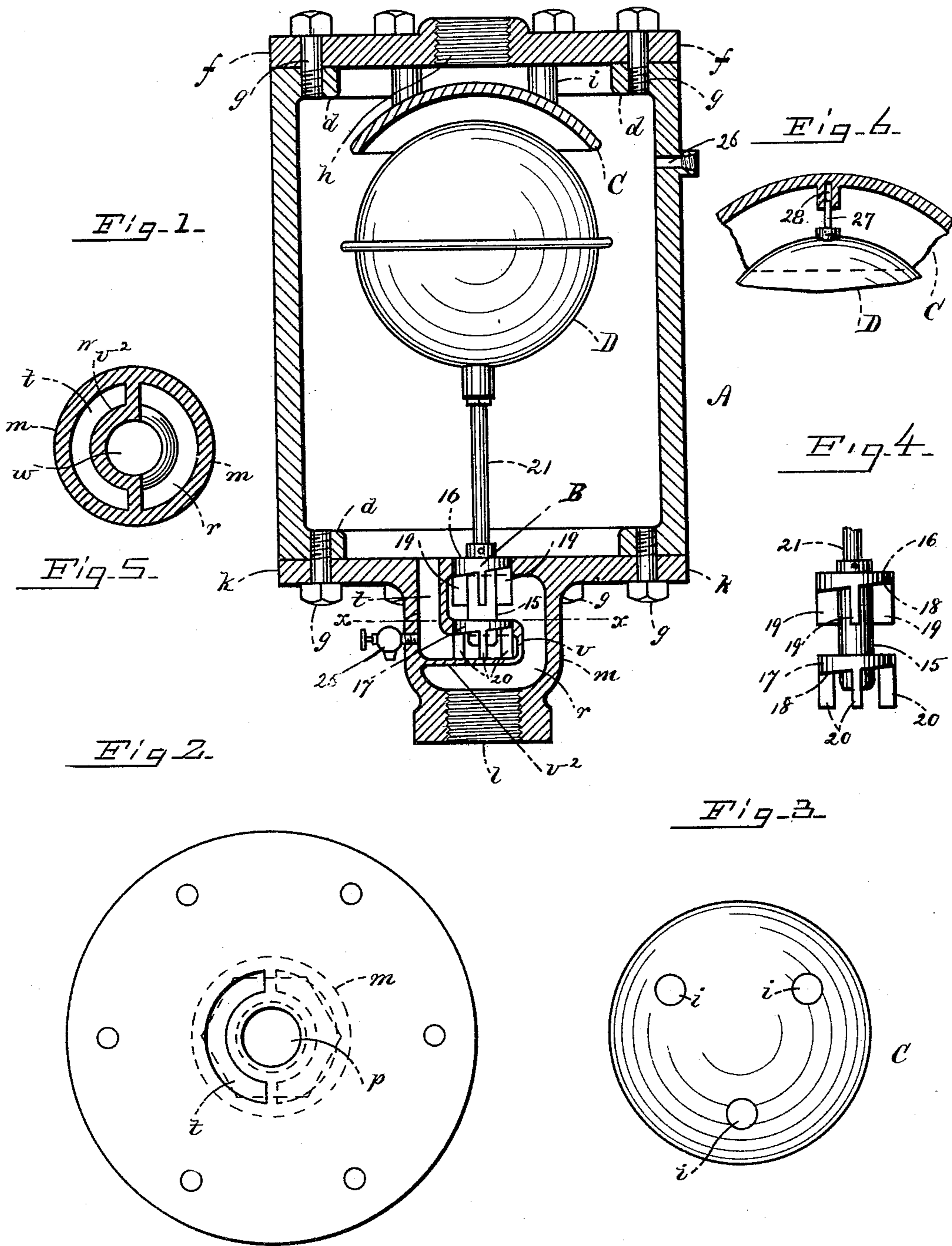


(No Model.)

C. A. CARLETON.
STEAM TRAP.

No. 406,875.

Patented July 16, 1889.



WITNESSES:
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STEAM-TRAP.

SPECIFICATION forming part of Letters Patent No. 406,875, dated July 16, 1889.

Application filed March 11, 1889. Serial No. 302,869. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. CARLETON, of Westbrook, in the county of Cumberland, State of Maine, have invented a certain new and useful Improvement in Steam-Traps, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical transverse section of my improved trap; Fig. 2, a plan view of the bottom of the trap removed; Fig. 3, a top plan view of the dome detached; Fig. 4, an elevation of the valve removed; Fig. 5, a section taken on line $x x$ in Fig. 1; and Fig. 6 a sectional view illustrating means for guiding the float.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of traps which are automatic in their action; and it consists in certain novel features, as hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body of the trap, and B the valve. The body of the trap consists of a cylindrical box having an inwardly-projecting annular flange d at each end. A cap-plate f is secured by bolts g to the flange d at the top of the trap, said plate having a central screw-threaded opening h , for receiving a steam-pipe.

On the inner face of the plate f are three downwardly-projecting lugs i , to the lower ends of which a circular dome C is secured, said dome being disposed directly under the inlet h . A threaded opening 26 is formed in the body A, to which an air-valve may be attached.

A plate k is secured by bolts g to the oppo-

site flange d , and is extended downward centrally at m , said extension being provided with a threaded outlet-opening l . The body B, top plate f , and bottom plate k constitute the steam-trap chamber.

A circular valve-opening p , Fig. 2, is formed in the plate k and opens into a semicircular valve-chamber r , formed in the extension m and connecting the valve-opening with the outlet l . A semicircular valve-chamber t is formed in the extension m , its upper end opening through the plate k into the body of the trap around the valve-opening p . The chamber t is extended horizontally in its lower portion between the upper and lower portions of the chamber r , being separated therefrom by a partition v . A valve-opening w (see Fig. 5) is formed in the partition v , in alignment with the opening p in the plate k , and connects the chamber t with the chamber r . An ordinary drip-cock 25 is disposed in the extension m and leads into the chamber t .

The valve B consists of a circular body portion 15, provided on its upper end and near its lower end with annular flanges 16 and 17, said flanges being respectively fitted to work tightly in the valve-openings $p w$. The lower surfaces 18 of the flanges 16 and 17 are constructed slanting or diagonal, as best seen in Fig. 4, so that said surfaces will be on planes inclined to the planes of the plate k and partition v , whereby said valves will open and close gradually and with greater ease.

From the edge 18 of the flange 16 parallel guides or flanges 19 project at intervals, said guides being arranged longitudinally on the body 15. Similar guides 20 project from the corresponding edge of the flange 17 and form legs which rest upon the horizontal portion v^2 of the partition v and support the valve when seated, as shown in Fig. 1. A vertical valve-stem 21 is secured to the upper end of the valve B and projects into the body of the trap. A ball or float D is secured to the top of the stem 21 and is disposed directly under the dome C.

In the use of my improvement the trap is connected with the steam-pipes by the inlet h in the usual manner. The water from the

condensed steam in the pipes entering the body of the trap through the inlet *h* strikes the top of the dome C and is deflected thereby from the float D. When sufficient water has
5 collected in the trap, it causes the float to rise, carrying with it the valve B, and permitting the water to flow through the valve-openings *p w* and chambers *r t* into the outlet *l*. Sufficient water having thus been drawn off so
10 that the ball D will not float, the valve will reseal itself and close the valve-openings. The dome C acts as a stop to prevent the ball from rising too high and thus withdraw the valve too far from the openings *p w*.

15 In Fig. 6 the float D is represented as provided at its top with a pin 27, which works vertically in a socket 28, formed centrally in the dome C, the purpose of said pin being to guide the float and prevent the stem 21 from
20 breaking or bending during transportation.

Having thus explained my invention, what I claim is—

In a steam-trap, the combination of a steam-trap chamber provided with an inlet in its top, a dome secured within said steam- 25 trap chamber opposite said inlet, two semi-annular valve-chambers in the bottom of said body connected by a circular valve-opening, one of said valve-chambers opening directly into the trap-chamber and the other being 30 connected therewith by a circular valve-opening, said valve-openings being in alignment, a valve provided with annular flanges fitted to work in said valve-openings, the lower surfaces of said flanges being on inclined planes 35 so as to open and close gradually, and a ball-float on the stem of said valve disposed beneath said dome, substantially as described.

CHARLES A. CARLETON.

Witnesses:

BENJ. THOMPSON,
JOHN T. FAGAN.