No. 635,138. Patented Oct. 17, 1899.

T. J. KIELEY.

STEAM TRAP.

(Application filed June 6, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

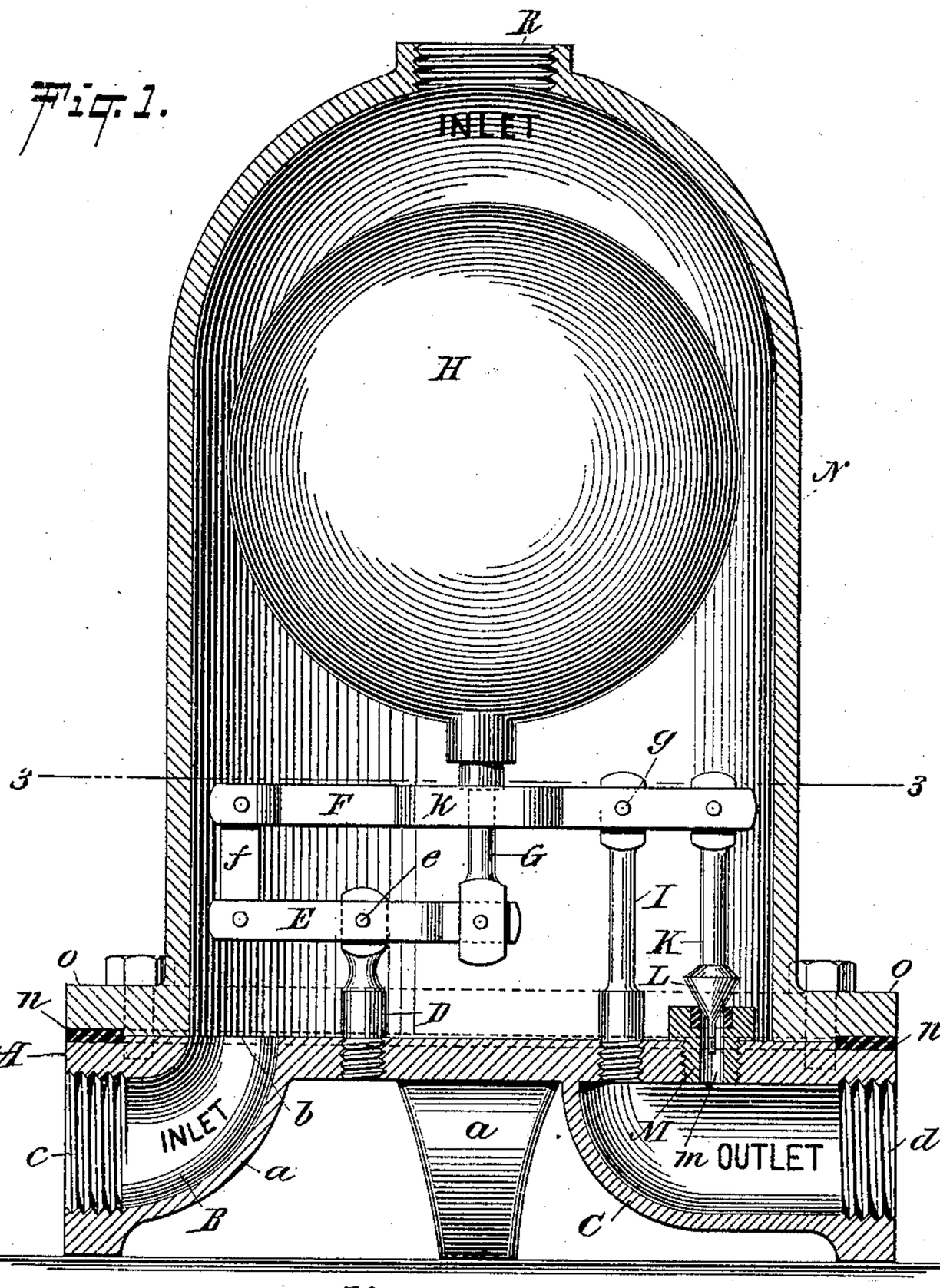

Fig. 3.

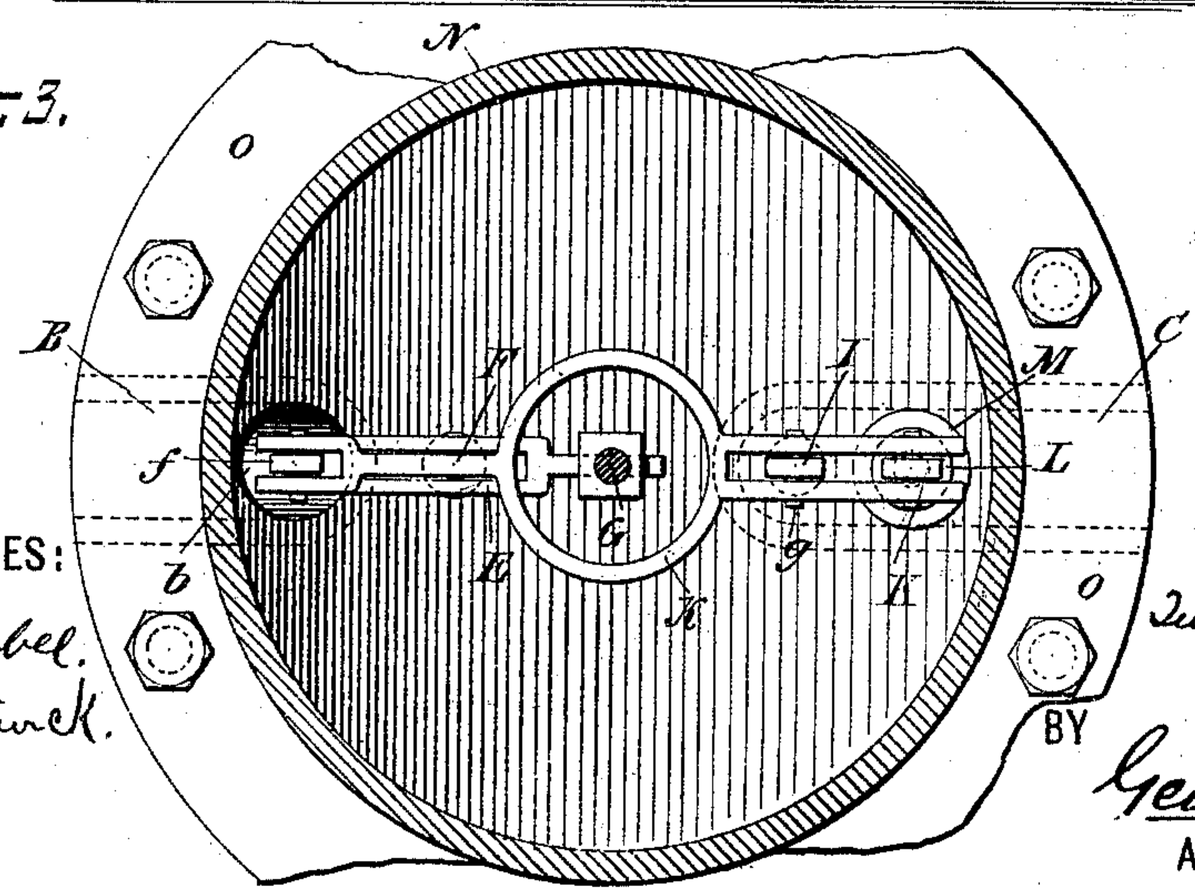

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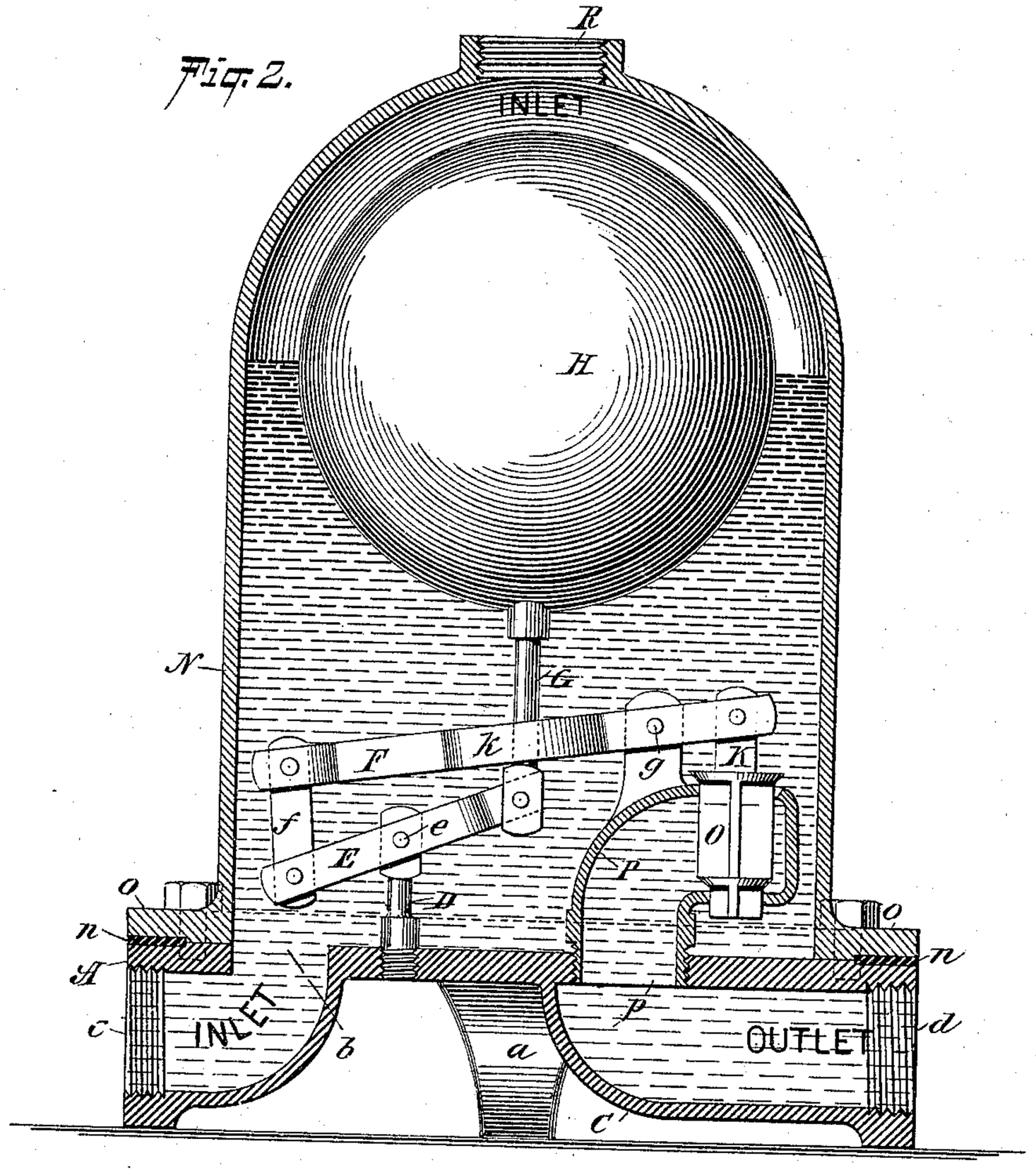
Fig. 2.



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UNITED STATES PATENT OFFICE.

TIMOTHY J. KIELEY, OF NEW YORK, N. Y.

STEAM-TRAP.

SPECIFICATION forming part of Letters Patent No. 635,138, dated October 17, 1899.

Application filed June 6, 1898. Serial No. 682,627. (No model.)

To all whom it may concern:

Be it known that I, TIMOTHY J. KIELEY, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have made and invented certain new and useful Improvements in Steam-Traps, of which the following is a specification.

My invention relates to an improvement in steam-traps, the object being to provide a device of this kind or character which shall be simple in construction, efficient in use, and economical to manufacture.

With these and other ends in view my invention consists in certain novel features of construction and combinations of parts, as will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view, partly in section and partly in elevation, of my improved steam-trap, the valve being closed. Fig. 2 is a similar view of a modified form thereof, showing the valve open. Fig. 3 is a view taken on the line 3 3 of Fig. 1.

Referring to the drawings, A represents a disk or plate provided with standards or legs *a* and formed with an opening *b* leading into the inlet-pipe B, preferably cast or formed integral with the plate A and threaded, as at *c*, to receive the threaded end of the pipe leading to the trap, said inlet B also serving as a leg or standard to support said plate A. On the opposite side of the plate A is also cast or formed the outlet-pipe C, the end *d* thereof being threaded to receive the end of the discharge-pipe, said outlet-pipe C also serving as a leg or standard for supporting said plate or disk A.

In the plate or base A is secured the lower end of the post D, to the upper end of which is fulcrumed at *e* a lever E, the latter in turn being connected at one end by means of a link *f* to one end of the lever F, the opposite end of said lever E being pivoted to a post G, extending vertically downward, and to the upper end of which is secured a hollow ball or sphere H, constructed, preferably, of thin sheet metal to act as a float. The lever F is fulcrumed at *g* near one end to the post I, the lower end of the latter being threaded in or otherwise secured to the base-plate A, the extreme end of said lever F being connected with the valve-rod K, on the lower end of which is formed or has secured thereto a valve L, adapted to seat or rest upon a valve-seat M, threaded into the base-plate and through which is formed an opening *m*, communicating with the outlet C. As shown in Fig. 3 of the drawings, the lever F is formed at about the center of its length with the ring *k* in order to allow of the passage and vertical movement of the post G, carrying the float H.

To the base-plate A is bolted or otherwise tightly secured the dome or cover N, a packing *n* being inserted between the flange *o* of said dome and the base-plate A, if desired, for the purpose of preventing the leakage or escape of water from the trap at such joint. The dome N forms a chamber, reservoir, or trap for receiving and containing water entering the same through the inlet B.

It will be understood from the foregoing that as water enters the inlet B it will continue to rise in the dome N until the latter becomes about half full, whereupon the float H will rise and by means of the post G will depress the outer end of the lever E, which, being connected with the lever F by means of the link *f*, will raise the opposite end of said lever F, and thereby raise the valve-rod K and valve L, allowing the water in the trap to escape therefrom through the passage *m* and outlet C.

In Fig. 2 I have shown the trap constructed substantially the same as illustrated in Fig. 1, the same system of levers being used, but shown in their raised position. In this figure, however, I have shown a balance-valve O, seating at its upper and lower ends in openings formed in a curved pipe P, one end of which is closed and the opposite end of which is threaded or otherwise secured in an opening *p*, leading into the outlet-pipe C. As in the former case, when the dome N becomes partially filled with water the float H will rise, the several levers assuming the positions as indicated, and thereby raising the valve O, allowing the water in said dome N to escape therefrom into the pipe P and out through the outlet-pipe C.

In some instances it is possible that it will be more convenient to connect the inlet-pipe to the dome through the top instead of at the

bottom, and therefore I prefer to form an inlet-opening R in the top of the dome. In the event that the inlet-pipe is thus threaded into the top of the trap it will be understood that the lower inlet B will be plugged or closed up, and in the event that the lower inlet B is used the upper inlet R will be closed.

From the foregoing it will be understood that my improved trap is exceedingly simple in construction, consisting of but few parts, cheaply made, and readily and easily assembled or put together.

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

1. The steam-trap herein described, comprising a dome-shaped casing, a base-plate formed with legs one of which is provided with an upwardly-curved passage opening through the floor of the base and another with a downward-curved passage opening from the floor of the base, constituting the inlet and outlet pipes for the trap, a post D secured in the floor of the base, a lever E fulcrumed to said post, another support secured in the floor of the base, a lever F fulcrumed to said post and formed with an open middle portion, a link *f* connecting the adjacent ends of said levers, a valve-rod K pivotally connected to the free end of the lever F and formed with a valve on its lower end, a valve-seat in the floor of the base and opening into the outlet-pipe in the leg of the base, and a float H, provided with a depending post G, having its lower end pivotally connected to the free end of the lever E.

2. The steam-trap herein described, comprising a casing N, a base-plate secured thereto, and formed with legs one of which is provided with an upward-curved passage opening through the floor of the base, and another with a downward-curved passage opening from the floor of the base, constituting the inlet and outlet pipes for the trap, a post D secured in the floor of the base, a lever E fulcrumed to said post, a curved pipe P secured in the floor of the base and opening into the outlet-passage in the leg of the base and formed with valve-seats in its upper free end, a lever F fulcrumed on the said curved pipe, a link *f* connecting the adjacent ends of said levers, a valve O pivotally connected to the free end of the lever F to open and close the valve-ports in the curved pipe P, and a float provided with a depending stem having its lower end connected to the free end of the lever E.

Signed at New York, in the county of New York and State of New York, this 28th day of May, A. D. 1898.

TIMOTHY J. KIELEY.

Witnesses:

GEORGE COOK,

FREDERICK T. MUELLER.