

(No Model.)

G. B. BOOMER.

STEAM TRAP.

No. 253,670.

Patented Feb. 14, 1882.

Fig. 1.

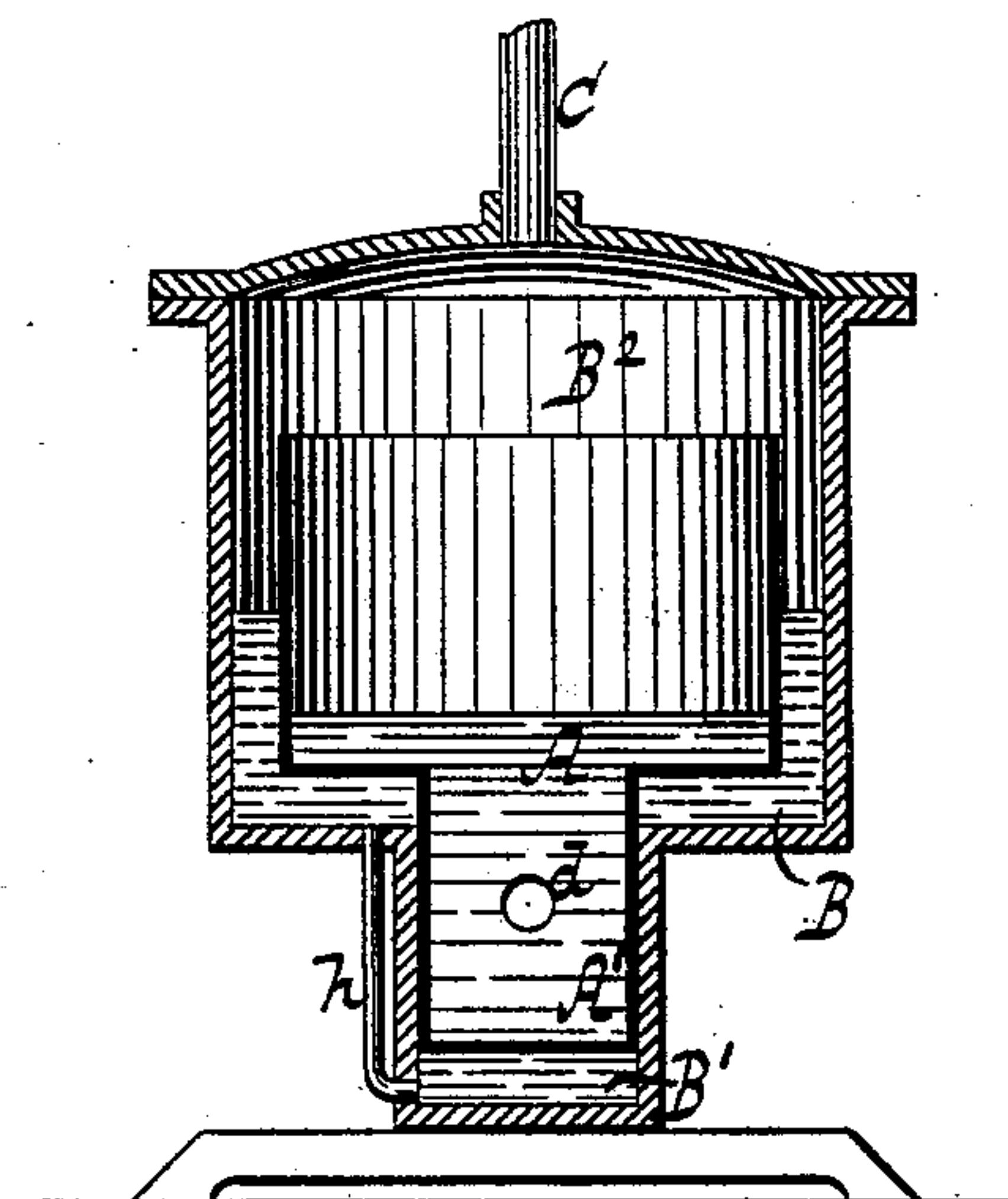


Fig. 2.

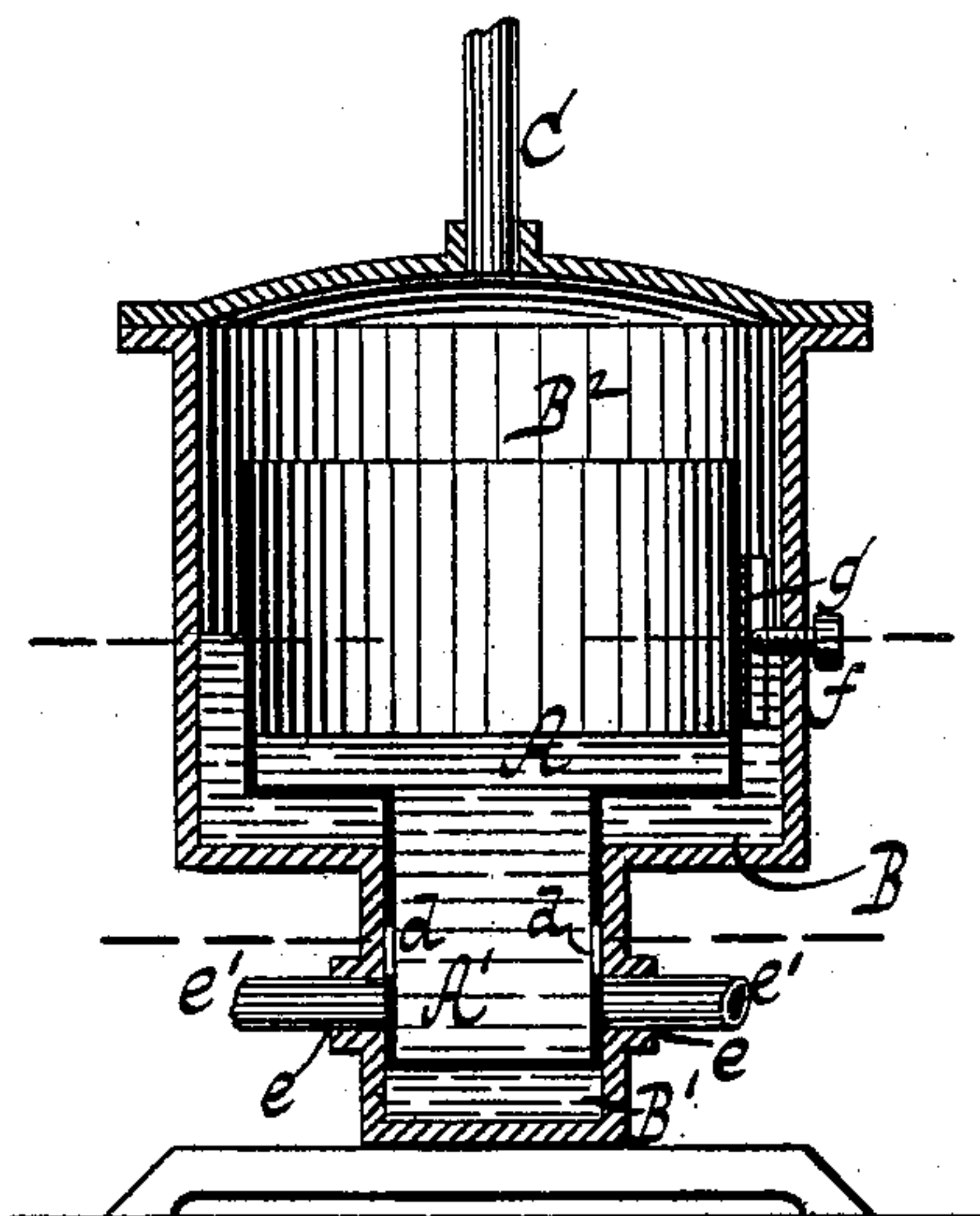


Fig. 3.

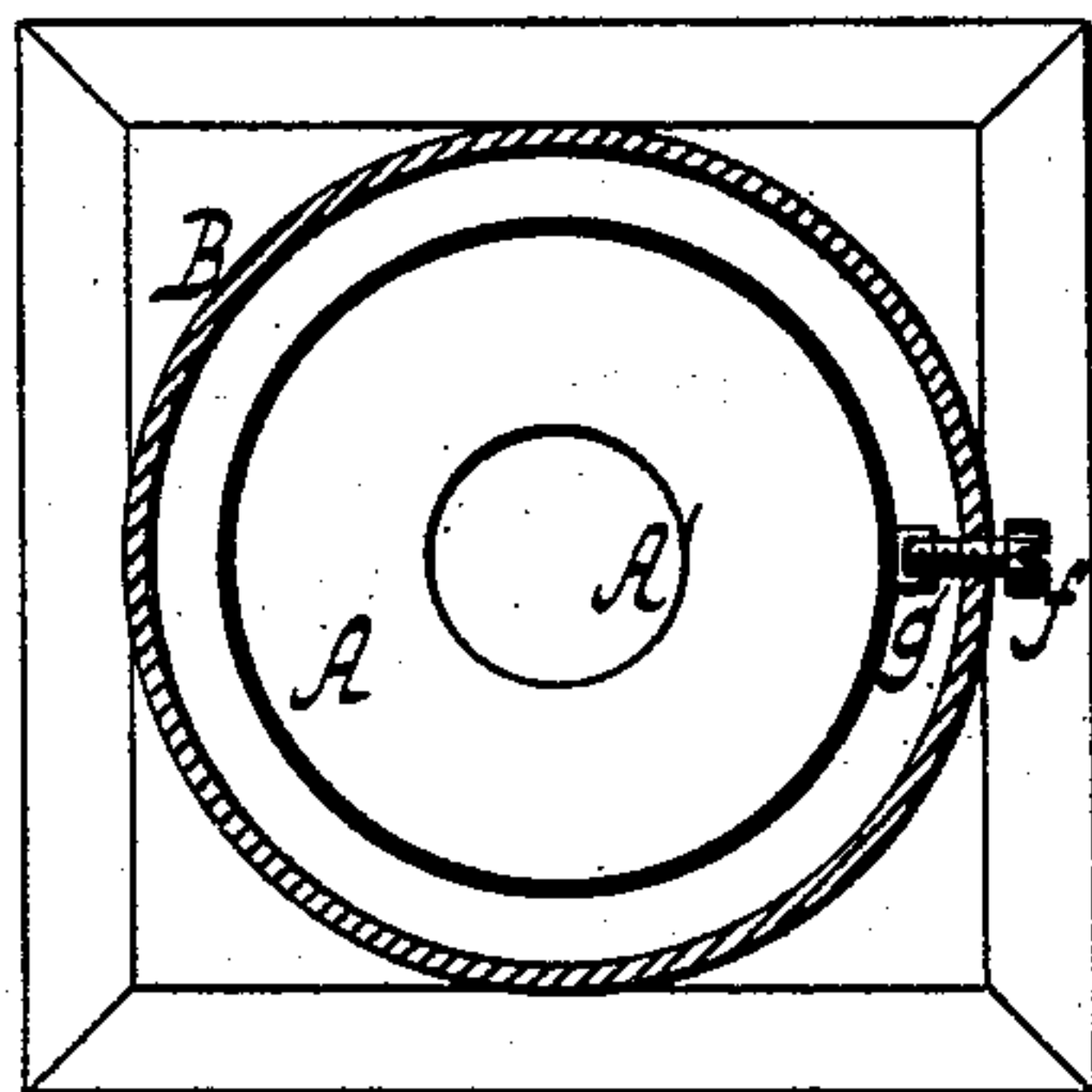
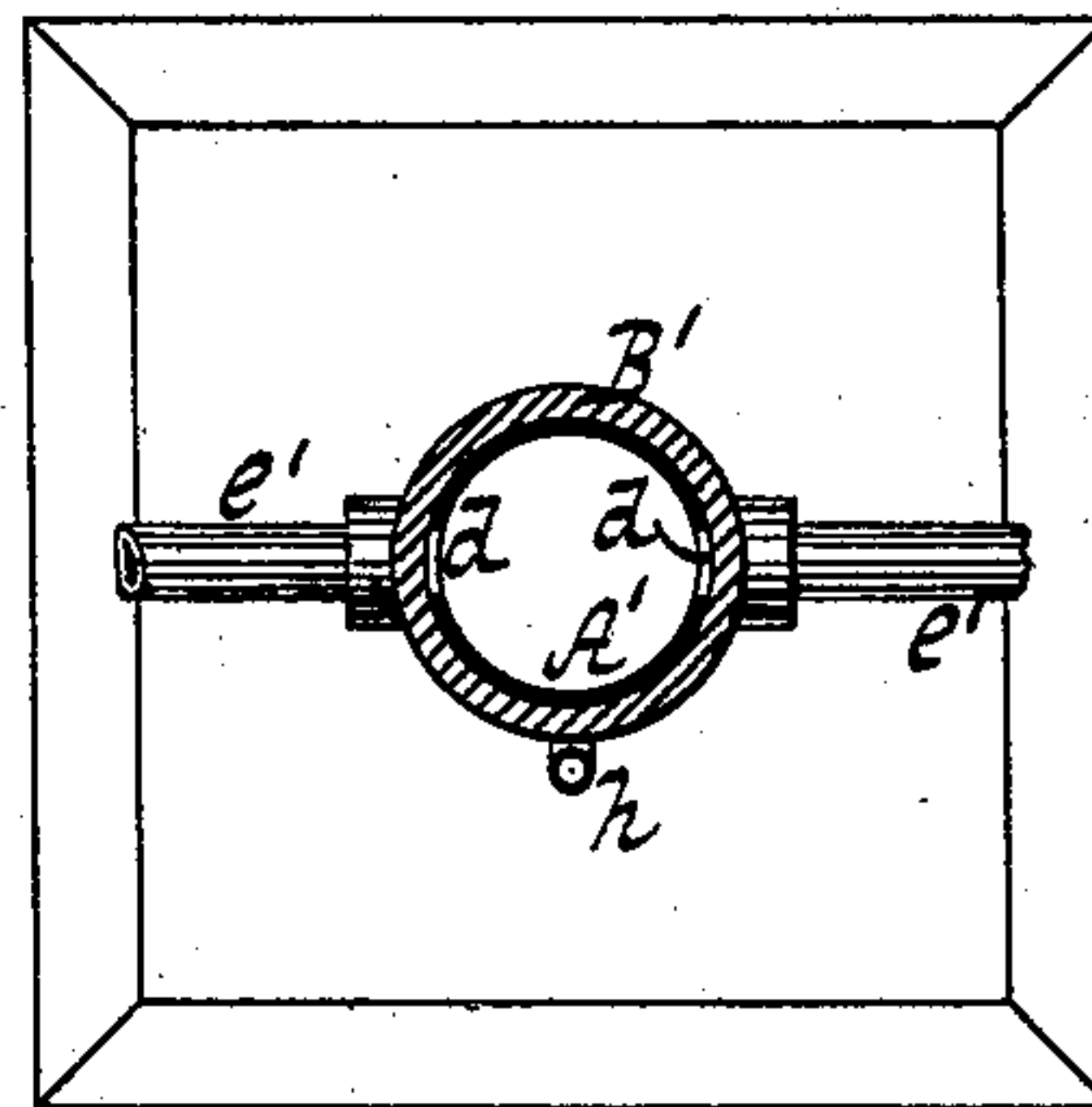


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE B. BOOMER, OF NEW YORK, N. Y.

STEAM-TRAP.

SPECIFICATION forming part of Letters Patent No. 253,670, dated February 14, 1882.

Application filed December 1, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. BOOMER, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Steam-Traps, of which the following is a specification.

This invention relates to that class of steam-traps embodying an open-mouthed float, receiving the water of condensation from the steam-pipe and acting as a valve to open and close the water-escape orifices according to its position.

This invention consists in a float constructed with a neck having lateral water-escape orifices which are diametrically opposite to each other, in combination with a casing constructed with a neck receiving the neck of the float, and having lateral water-escape orifices which are diametrically opposite to each other and in corresponding vertical planes to the orifices of the float, and a means for guiding the float in a vertical plane, so that in a certain position of the float its orifices register with those of the casing, and the water in the float is allowed to escape.

It also consists in making the casing T-shaped and connecting the lower part of its neck with the upper part or head thereof by a water-way, as hereinafter more fully set forth.

This invention is illustrated in the accompanying drawings, in which Figure 1 represents a vertical central section. Fig. 2 is a similar section taken at a right angle to Fig. 1. Fig. 3 is a horizontal section on the line $x x$, Fig. 2. Fig. 4 is a like section on the line $y y$ of Fig. 2.

Similar letters indicate corresponding parts.

The letter A designates the open-mouthed float, and B the casing, both constructed with a neck, A' or B', and in the example shown in Figs. 1 to 4, inclusive, the neck of the float is fitted or ground into that of the casing. The casing B is placed on a suitable base, and to the top thereof is connected a steam-pipe, C, leading from the apparatus which is to be cleared of the water of condensation.

The letter d indicates the orifices of the float, and e those of the casing, these orifices being formed in the lateral portions of the neck A' or B' diametrically opposite to each other, and those of the casing being in corresponding vertical planes to those of the float.

In the example shown in Figs. 1 to 4, pipes e' are connected to the orifices of the casing for conducting the water to the desired place, and, if desired, these pipes may be joined together, so as to have a common outlet.

The float-guide is composed of a screw-stem, f , passing through the side of the casing, and engaging a U-shaped strip, g , attached vertically to the side of the float; but the guide can also be formed in other ways, which will readily suggest themselves to a skilled mechanic. In applying the trap to use, water is poured into the casing A in sufficient quantity to raise the float B to such a position as to bring its orifices d above the casing-orifices e , thus closing up the latter, a suitable stop being used, if desirable, for determining the upper position of the float. The water of condensation issuing from the steam-pipe C drops into the float A through its open mouth, thus gradually increasing the weight of the float, and when its weight reaches such a point as to overcome the buoyant power of the water in the casing the float sinks down until its orifices d meet or register with the casing-orifices e , whereupon the water escapes from the float and the latter is permitted to rise, again closing the casing-orifices. If by the condensation of the steam entering the casing the level of the water supporting the float B therein rises to the top of the float, it simply overflows into the latter and escapes with its other or remaining water. When the neck A' of the float is fitted into the neck B' of the casing, as shown in Figs. 1 to 4, the casing is formed with a head, B², imparting thereto an approximately T shape, and a water-way, h , is used to connect the lower part of the neck with the head of the casing. In the example shown this way h is formed of a pipe exterior of the casing; but it can also be formed in the wall of the casing.

A trap has heretofore been formed of a casing having a central neck with water-escape orifices, and of an open-mouthed float fitted on such neck by means of a central imperforated collar, which slides above or below the orifices of the casing to open them. As will be seen, such trap differs in construction from mine; and the advantages of my trap are that by the arrangement of the water-escape orifices in the neck of both the float and the casing the neck

of the float can be made of sufficient length to afford a good bearing thereto.

What I claim as new, and desire to secure by Letters Patent, is—

5 1. The combination, in a steam-trap, of the T-shaped casing having its neck provided with lateral water-escape orifices which are diametrically opposite to each other, and also provided with the steam-pipe opening into the
10 upper portion of said casing, the open-mouthed T-shaped float, arranged to receive the water of condensation from the steam-pipe, and constructed with a neck, A', fitted in the neck B of the casing, and provided with lateral water-
15 escape orifices d, substantially as shown and described.

2. The combination, substantially as hereinbefore set forth, of the T-shaped casing having its neck provided with lateral water-escape

orifices which are diametrically opposite to each other, and provided in its upper portion with a steam-pipe, the open-mouthed float, arranged to receive the water of condensation from the said steam-pipe, and constructed with a neck fitted into the neck of the casing, and provided
25 with lateral water-escape orifices which are diametrically opposite to each other and in corresponding vertical planes to the orifices of the casing, the water-way connecting the lower portion of the neck with the head of the casing,
30 and the float-guide, for the purpose specified.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

GEORGE B. BOOMER. [L. S.]

Witnesses:

J. HERMANN WAHLERS,
E. F. KASTENHUBER.