

(No Model.)

T. BURKHARD, Jr.
TRAP FOR EXHAUST STEAM PIPES.

No. 401,248.

Patented Apr. 9, 1889.

Fig. 1.

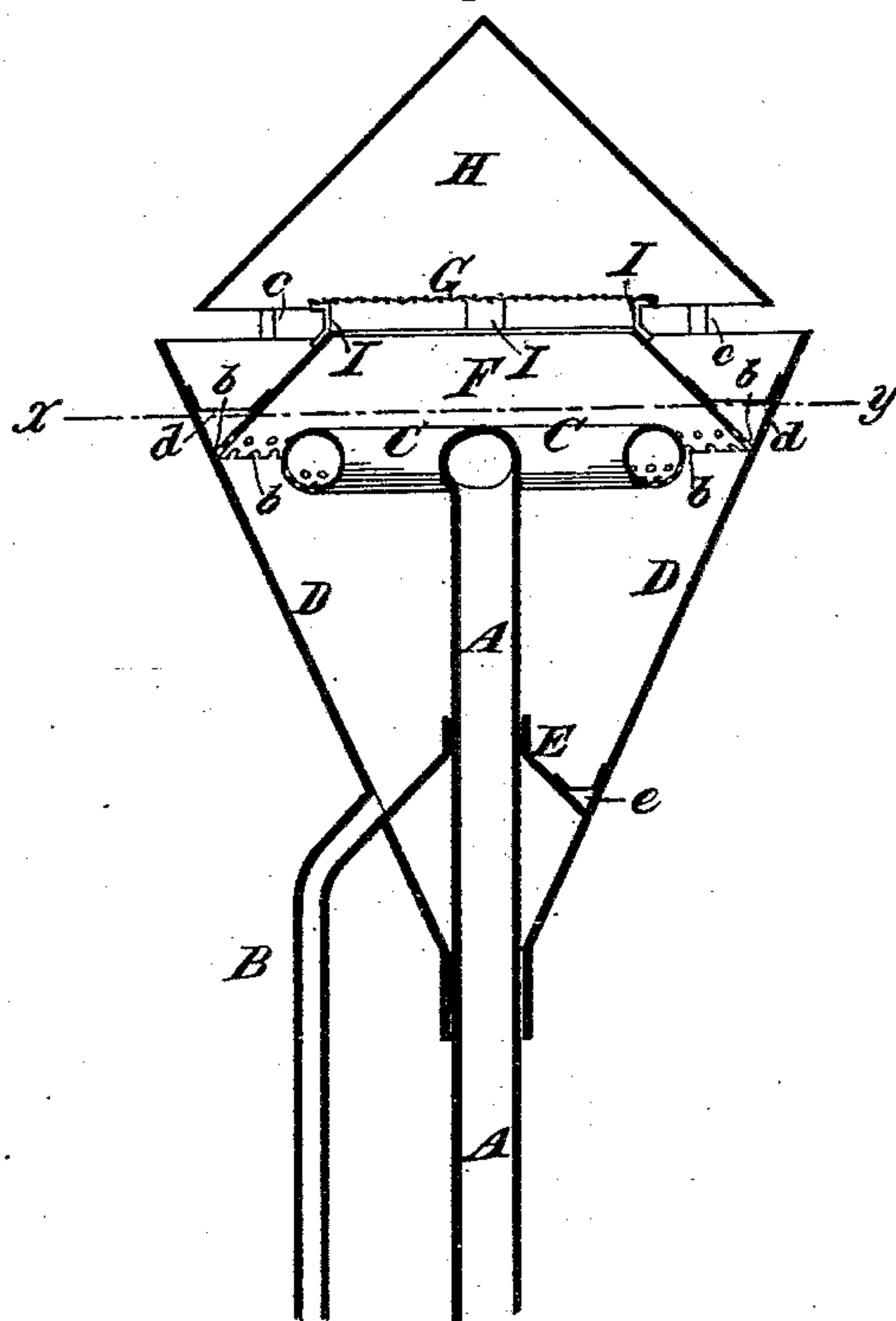
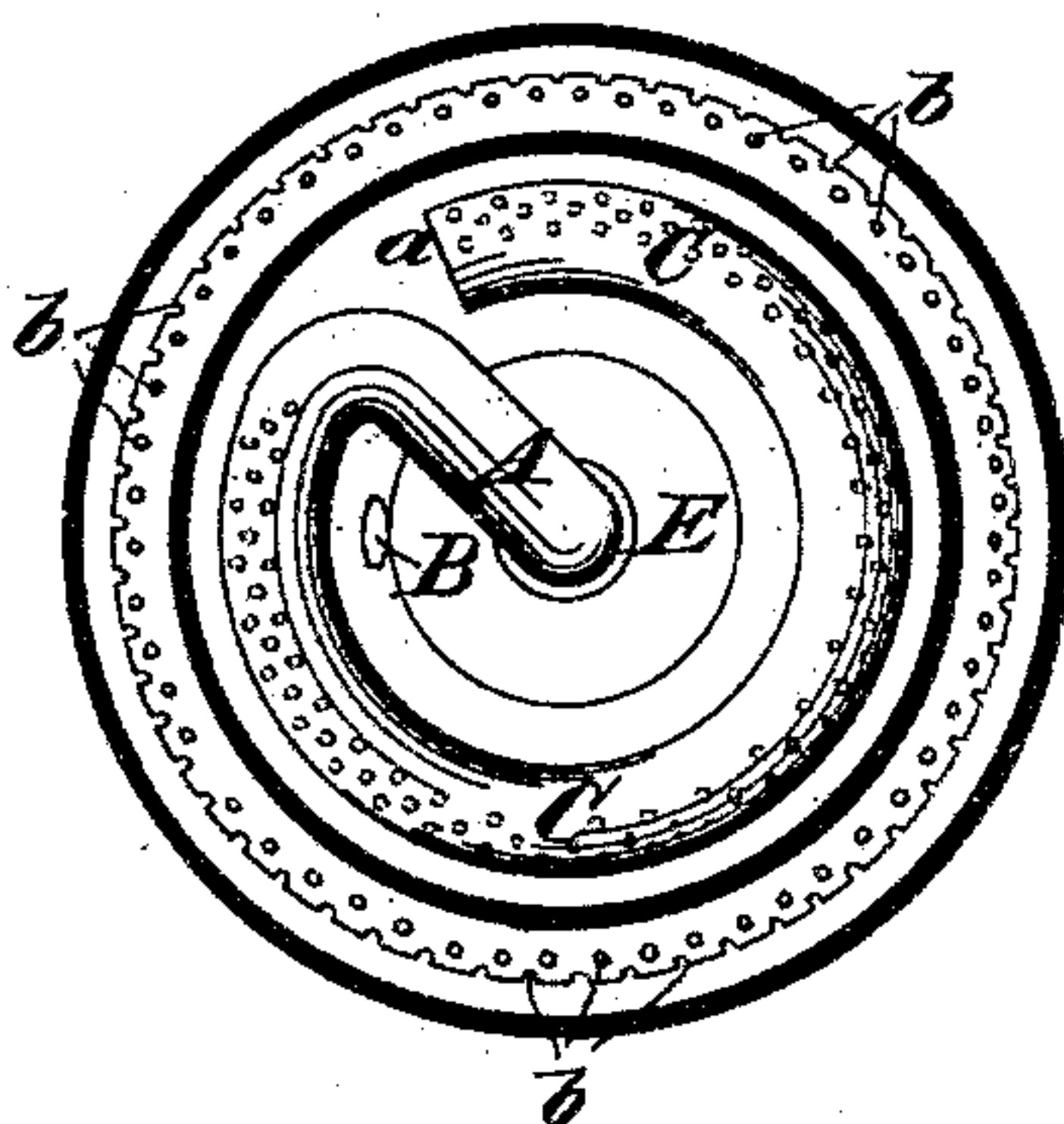


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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TRAP FOR EXHAUST-STEAM PIPES.

SPECIFICATION forming part of Letters Patent No. 401,248, dated April 9, 1889.

Application filed May 22, 1888. Serial No. 274,717. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BURKHARD, Jr., of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Traps for Exhaust-Steam Pipes, of which the following is a specification.

My invention relates to devices for condensing the steam at the end of the exhaust-pipe and for collecting and discharging the waters of condensation.

My invention consists of certain details of construction, which I shall now proceed to describe, whereby the escaping steam is suddenly checked by coming in contact with metallic plates, and is discharged in jets through numerous openings in upward and downward directions and against the cool sides of the trap, the waters of condensation collecting in the lower part of the same entering the discharge-pipe in the usual manner.

I shall hereinafter point out in the claims the novel features of the invention.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of a trap embodying my invention, showing the exhaust and discharge pipes also in section. Fig. 2 is a horizontal section of Fig. 1 on the line *x y* with angle-pieces removed.

Similar letters of reference designate corresponding parts in both figures.

A is the exhaust-pipe.

B is the discharge-pipe for the waters of condensation.

The exhaust-pipe terminates in a horizontal head, C, perforated in its bottom or under side, as is clearly shown in the drawings. In this example of my invention the head C is ring-shaped, corresponding to the conical forms and circular sections of the several parts of the trap. I consider the circular preferable to any other form of section for the said parts. The extremity *a* of the ring being closed, the steam, after being checked and deflected by contact with the upper parts of the head C, will escape through the perforations of the head in downward and outward directions and impinge against the inner surface of the metallic casing D, which in this

example is also conical or funnel shaped and forms the lower part of the trap.

E is a diaphragm, of suitable form, secured both to the exhaust-pipe A and to the casing D, as indicated in the drawings. It serves firmly to secure the casing to the pipe, and also to collect the waters of condensation and conduct them into the discharge-pipe B. That part of the steam which is not condensed below the head C passes upward through the inverted funnel F and perforated diaphragm G into the interior of the sheet-metal top or chamber H, which forms the uppermost part of the trap. The top H at its lower edge is in the example of my improvement shown of less diameter than the casing D at the upper edge of the latter. From the interior of the top H the part of the steam still uncondensed escapes freely into the open air by passing around the lower edge or rim of the said top. The steam in its passage is checked and deflected by impinging against the sloping sides of the funnel F and top H, and also by passing through the perforations of the diaphragm G, and a large part of it is thereby condensed, and the water of condensation passes downward along the inner sides of the head or trap and into the discharge-pipe B. The rim of the casing D exceeds in diameter that of the top H, in order to receive the water of condensation dripping from the upper chamber. *b b b* are perforations in the lower part of the inverted funnel F for the downward passage of the water.

c c are braces or supports by which the top H is secured to the funnel F.

d d are angle-pieces for securing the funnel F to casing D, and *e* is a similar angle-piece for securing diaphragm E to the casing D.

The lower portion of the funnel F extends into the interior of the casing D and contacts at its lower edge with the inner wall of said casing.

I I I are supports attached to the upper part of funnel F, by which the perforated diaphragm G is supported. The diaphragm G may consist of a sheet of woven wires or of perforated sheet metal, and it divides the trap into two chambers or compartments, as is

clearly shown in Fig. 1, one compartment consisting of the space below the diaphragm enclosed by the casing D and funnel F, and the other consisting of the space between the diaphragm and top H.

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

1. In a trap for exhaust-steam pipes, the combination, with a funnel-shaped casing forming a chamber, of an exhaust-pipe extending into said chamber and to near the top thereof, a perforated head upon the upper end of said exhaust-pipe, an inverted funnel having its lower portion extending into the interior of the casing and contacting at its lower end with the inner wall of the casing, and a diaphragm surmounting said inverted funnel, substantially as specified.

2. In a trap for exhaust-steam pipes, the combination, with a casing, of an upwardly-extending exhaust-pipe, a circular and tubular head thereon, a perforated diaphragm at the upper end of the casing, whereby a compartment is formed below the diaphragm, and

a compartment above the diaphragm, a space open to the atmosphere being provided between said compartments, substantially as specified.

3. In a trap for exhaust-steam, the combination, with a casing, of an upwardly-extending exhaust-pipe, a perforated head thereon, a perforated diaphragm at the upper end of the casing, and a top supported above said casing, so that a space will be left between the two, the diameter of the said top at its lower end being less than that of the casing at its upper end, substantially as specified.

4. The combination, with an exhaust-pipe, A, terminating in a perforated head, C, casing D, discharge-pipe B, inverted funnel F, having perforations b, and the perforated diaphragm G, of the top H and supports therefor, substantially as described and set forth.

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Witnesses:

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