

No. 633,439.

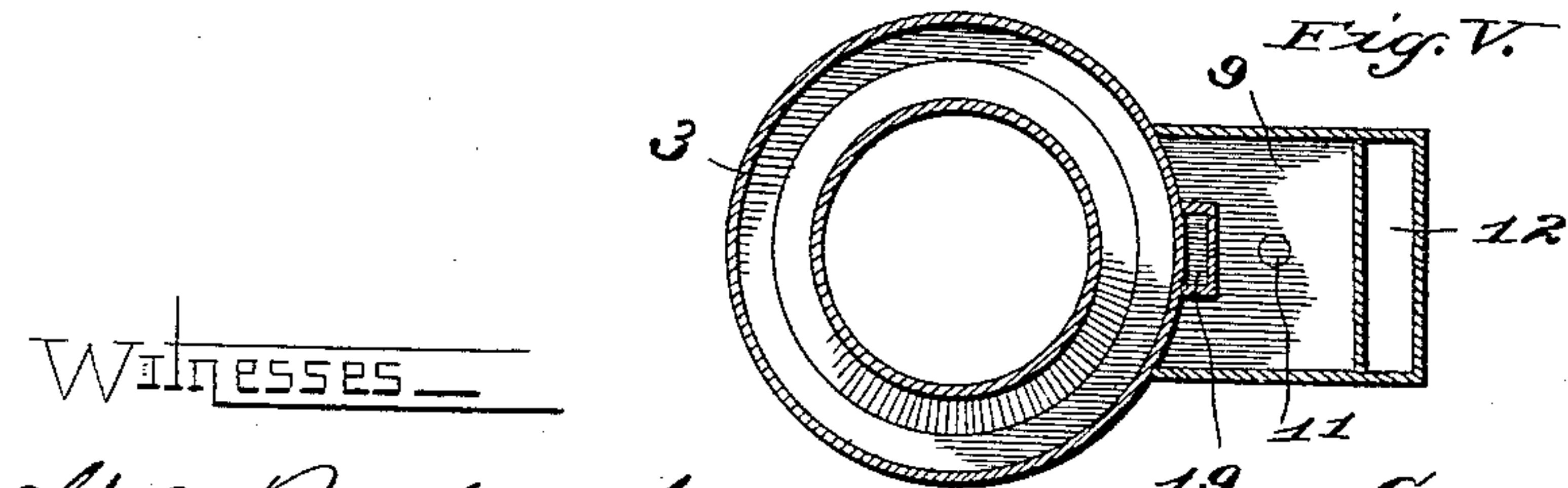
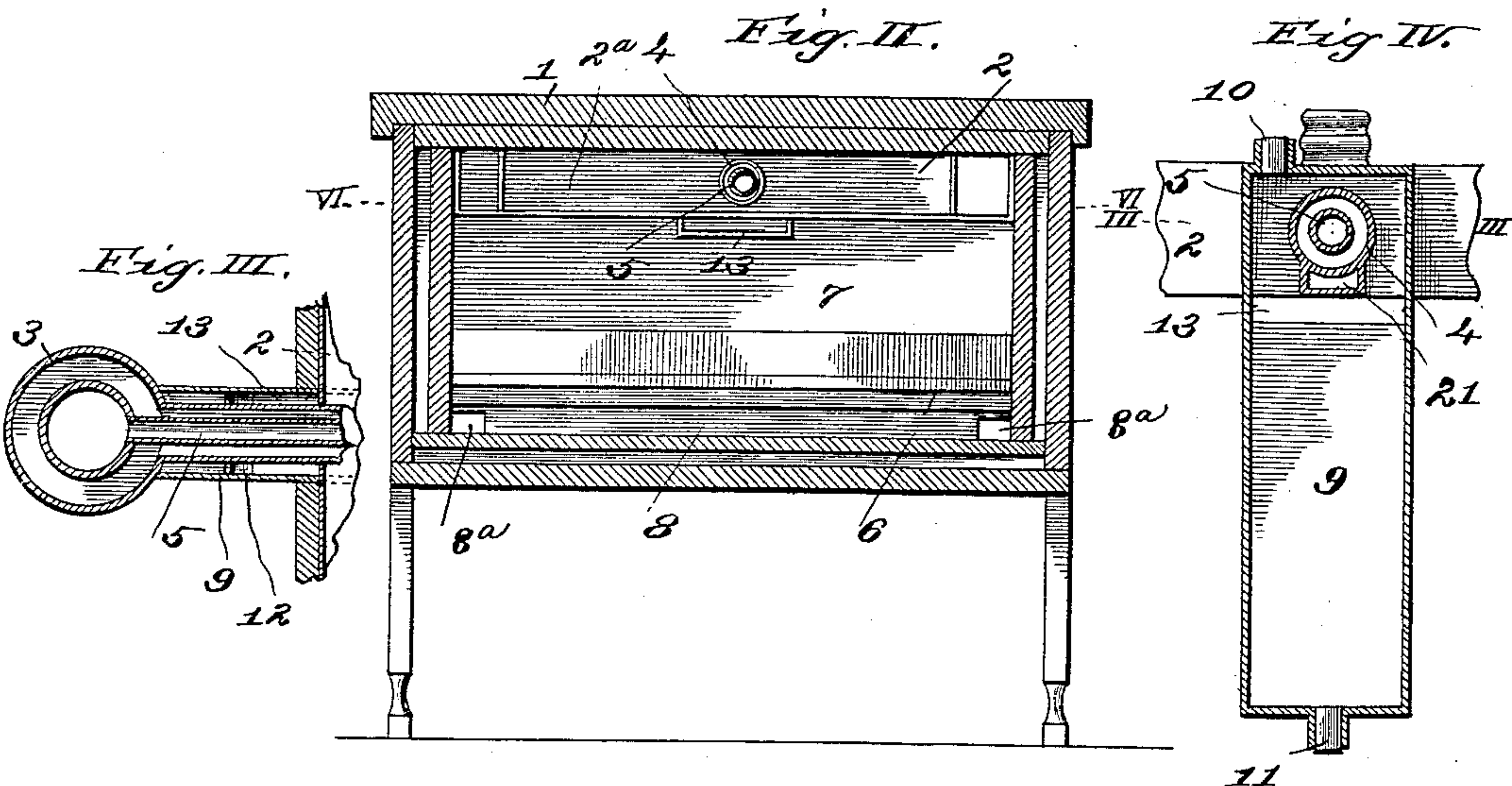
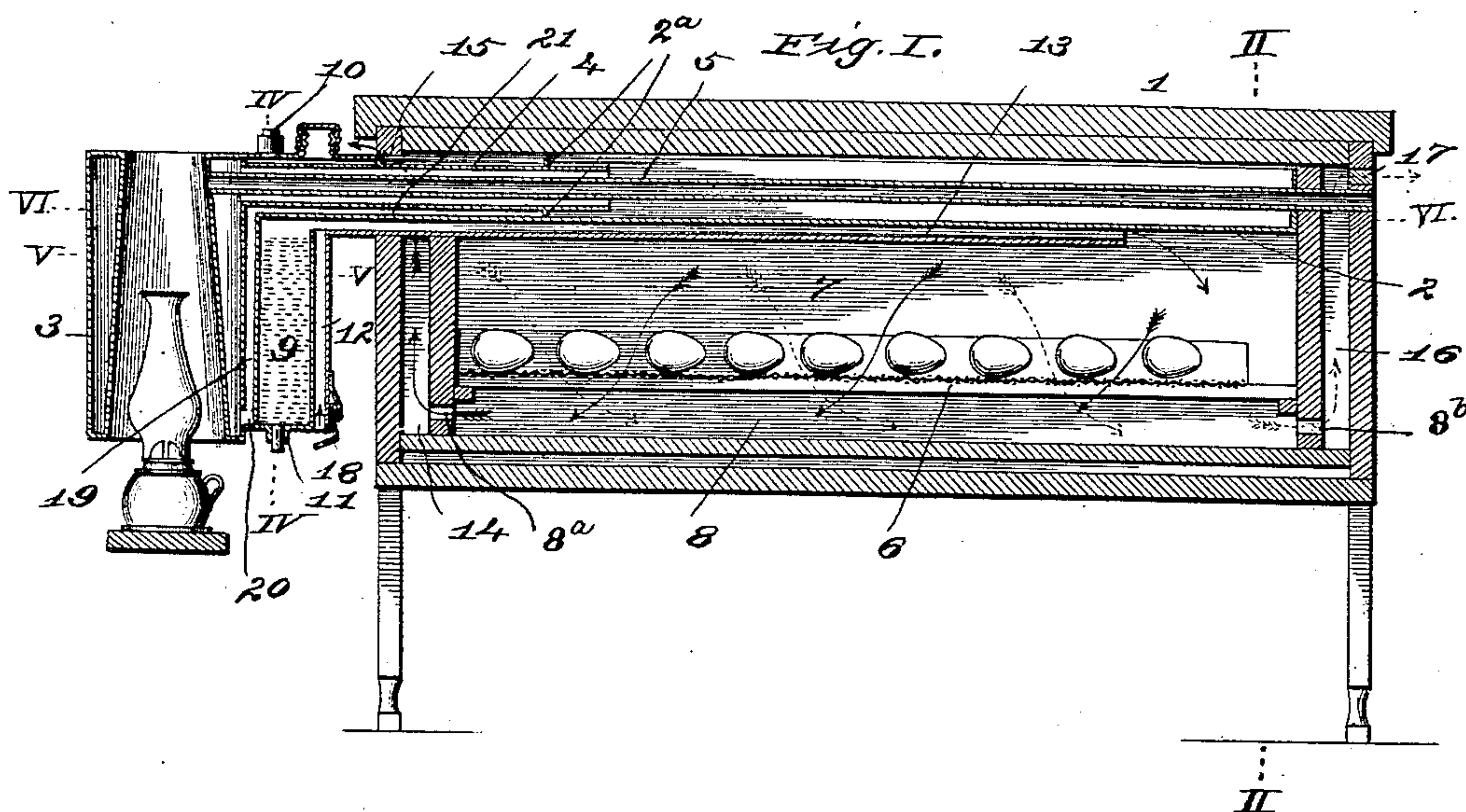
Patented Sept. 19, 1899.

G. ERTEL.
INCUBATOR.

(Application filed Feb. 23, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

Fig. VI.

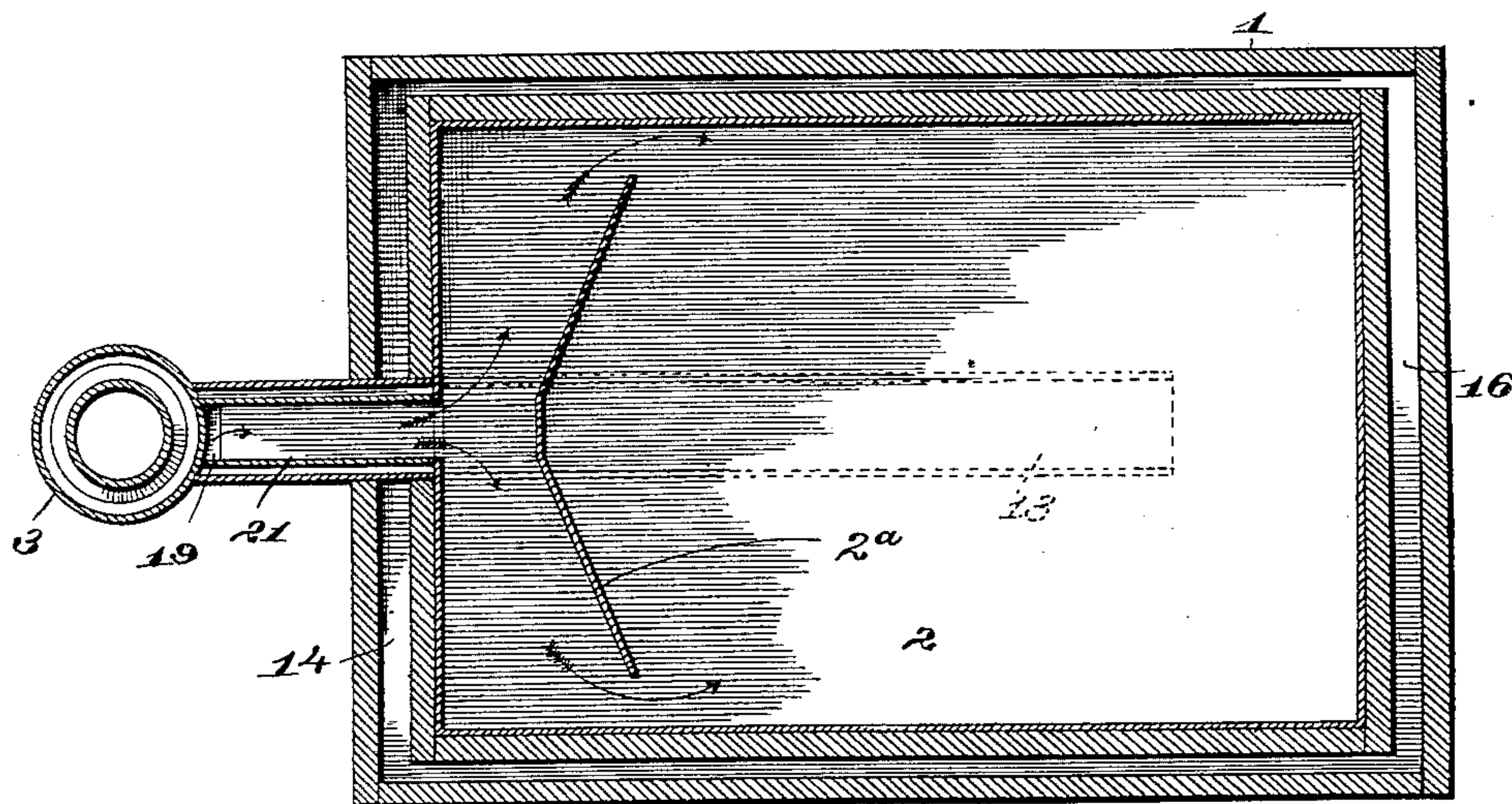
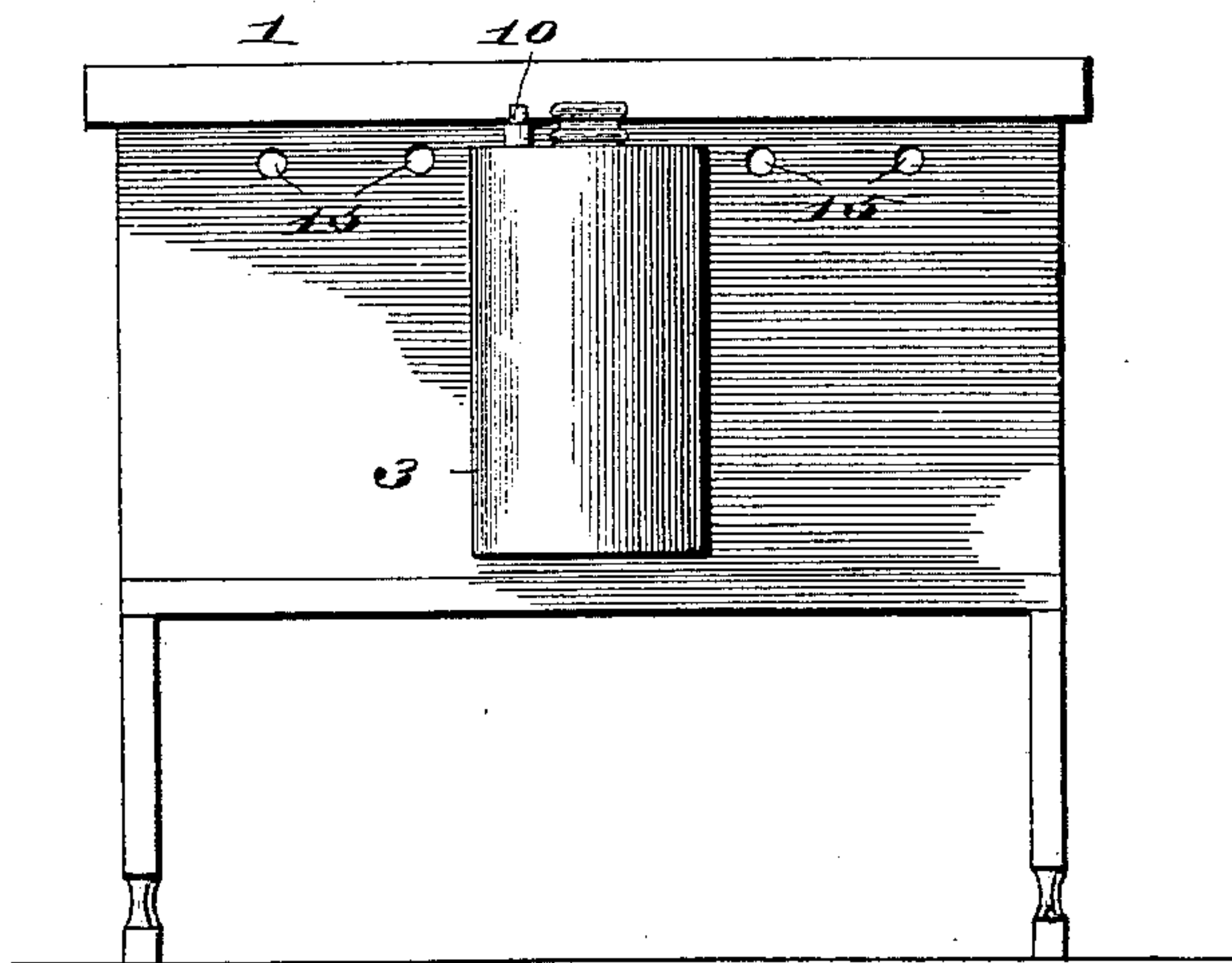


Fig. VII.



WITNESSES—

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UNITED STATES PATENT OFFICE.

GEORGE ERTEL, OF QUINCY, ILLINOIS, ASSIGNOR TO THE GEORGE ERTEL COMPANY, OF SAME PLACE.

INCUBATOR.

SPECIFICATION forming part of Letters Patent No. 633,439, dated September 19, 1899.

Application filed February 23, 1899. Serial No. 706,453. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ERTEL, a citizen of the United States, residing at Quincy, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Incubators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an incubator having a nursery-space beneath the egg-tray; and the object of my invention is to provide an effective and inexpensive means for furnishing moisture to the hatching-chamber of such an incubator.

My invention consists in features of novelty hereinafter fully described and claimed.

Figure I is a vertical longitudinal section of an incubator embodying my invention. Fig. II is a vertical transverse section taken on line II II, Fig. I, the egg-tray being shown in end view. Fig. III is a detail horizontal section taken on line III III, Fig. IV. Fig. IV is an enlarged detail vertical section taken on line IV IV, Fig. I. Fig. V is an enlarged transverse section taken on line V V, Fig. I. Fig. VI is a horizontal section taken on the line VI VI, Figs. I and II. Fig. VII is an end view.

1 represents the body of the incubator, which is provided with a main water-tank 2, having the usual deflector 2^a, and a main water-boiler 3, connected to the body by means of a water-pipe 4 and an air-pipe 5, as in my Patent No. 518,522, dated April 17, 1894.

6 represents the egg-tray, which in the present instance is located sufficiently far above the bottom of the incubating-chamber 7 to form a nursery-chamber 8.

Moisture has generally been supplied to the incubating-chamber by the use of water-pans placed beneath the egg-tray; but this means cannot be resorted to when the space beneath the egg-tray is used as a nursery; and to provide an effective means for furnishing this moisture is, as stated, the object of my invention.

9 represents an auxiliary water-tank located on the inner side of and up against the boiler 3 and which may be filled through an opening 10 in its top and drained through an

opening 11 in its bottom. On one side of the auxiliary water-tank 9, next to the body of the incubator, is an air-duct 12, and leading from the top of this duct and from the top of the water-tank is an air-duct 13, that extends to the incubating-chamber. The duct 13 may extend almost the length of the incubating-chamber, as shown in Fig. I, or it may extend only half-way thereinto, or, if preferred, it may extend just to the end of the incubating-chamber that is nearest to the tank 9. If it extends nearly through the tank, the air would pass from its inner end down through the egg-tray, as shown by the full arrows, Fig. I, and out through openings 8^a into a passage 14 at the boiler end of the incubator, escaping through perforations at 15 in the end of the body of the incubator. If the duct extends just to the incubating-chamber, the air will pass, as shown by the dotted arrows, down through the egg-tray and out through openings 8^b into a passage 16 at the far end of the incubator from the boiler, escaping through openings at 17. If the duct extends half-way through the incubating-chamber, the air will pass in the direction of both sets of arrows and escape through both of the passages 14 and 16.

The admission of air to the duct 12 is controlled by a suitable valve 18. The duct 13 is located close up against the bottom of the water-tank 2 thereabove, so that the air is heated as it passes into the incubating-chamber, and the auxiliary water-tank 9 being located close up against the boiler 3 its water is heated and the vapor arising therefrom mixes with the air passing through the ducts 12 and 13, so that the air enters the incubating-chamber properly moistened. To further heat the water and the air, I form a narrow water-chamber 19 between the boiler and the auxiliary water-tank 9, this chamber communicating with the boiler through an opening 20, so that it is kept full of warm water. I prefer to extend the chamber 19 for a distance along the pipe 4, as shown at 21, the pipe 4 extending through the deflector 2^a, while the chamber 19 connects with the tank 2 at the rear of the deflector.

With my improved arrangement a proper amount of moisture is maintained in the in-

cubating-chamber, while the lower part of the chamber is left unobstructed to serve as a nursery for the young chicks.

5 The air-duct 12 is located on the far side of the auxiliary water-tank 9 from the boiler, so as not to interfere with the water in the auxiliary water-tank being heated by the boiler.

I claim as my invention—

10 An incubator comprising the incubator-body having lower outlet-openings, upper outlet-openings, end passages connecting the lower outlet-openings with the upper outlet-openings, and an egg-tray dividing the body-compartment into an incubating-chamber and
15 a nursery-chamber, the main water-tank located in the top of the body-compartment, having a deflector, the main water-boiler having a water-pipe extending through the deflector into the main water-tank, the auxiliary water-tank located up against the inner
20 side of the main water-boiler and disconnected

from the water-chamber therein, the air-duct located on the side of the auxiliary water-tank next to the incubator-body and communicating with the top of the auxiliary water-tank, 25 the air-ducts located under the main water-tank and connected with the upper end of the auxiliary water-tank and the upper end of the air-duct for conducting moistened air directly into the incubating-chamber and into 30 the nursery-chamber, and the narrow water-chamber located within the auxiliary water-tank, next to the main water-boiler and connected with the latter at the bottom, and having an extension beneath the water-pipe and 35 connected with the main water-tank at the rear of the deflector; substantially as described.

GEORGE ERTEL.

In presence of—

WILLIAM COLMAN,
A. B. WEISENBURGER.