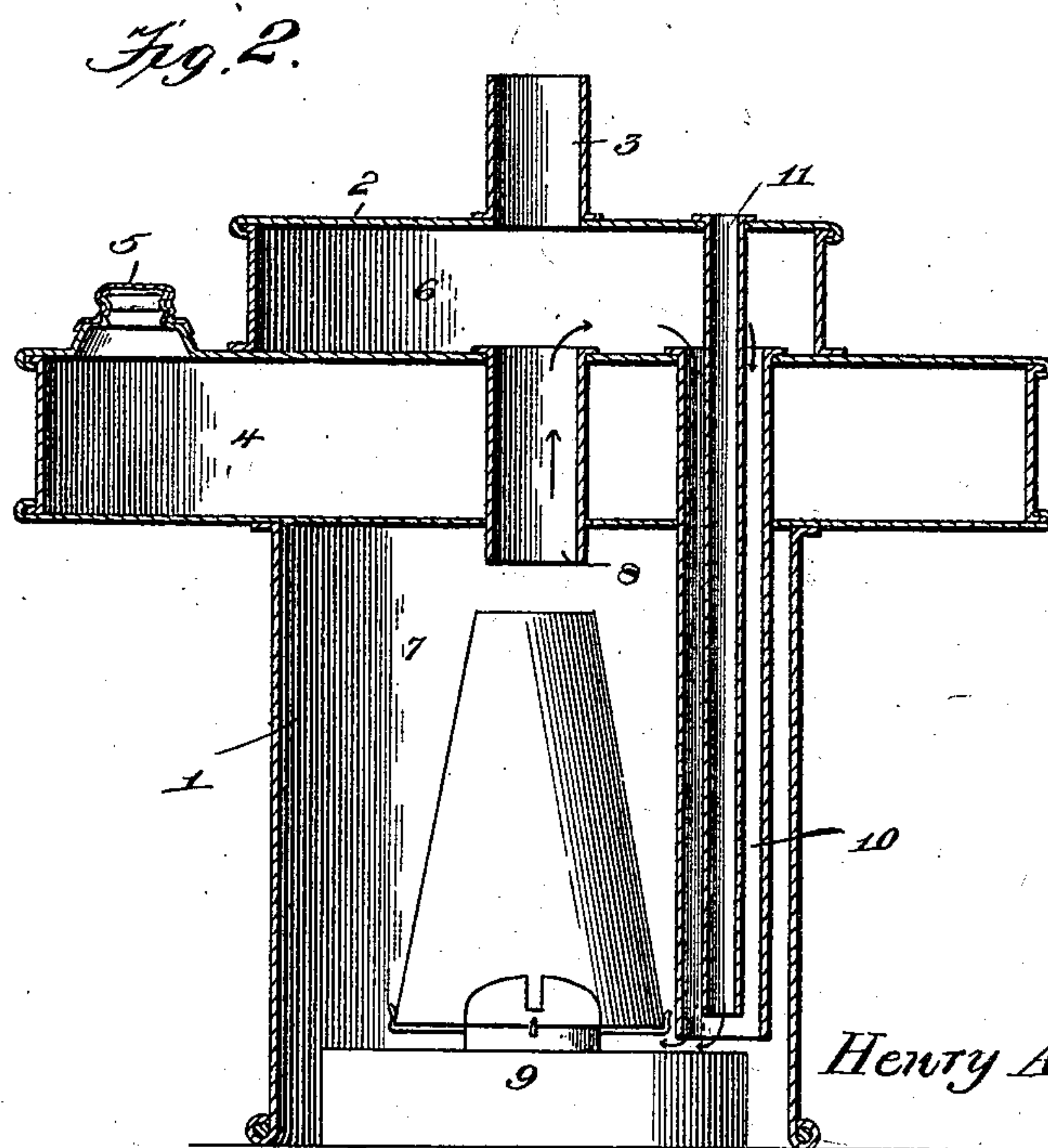
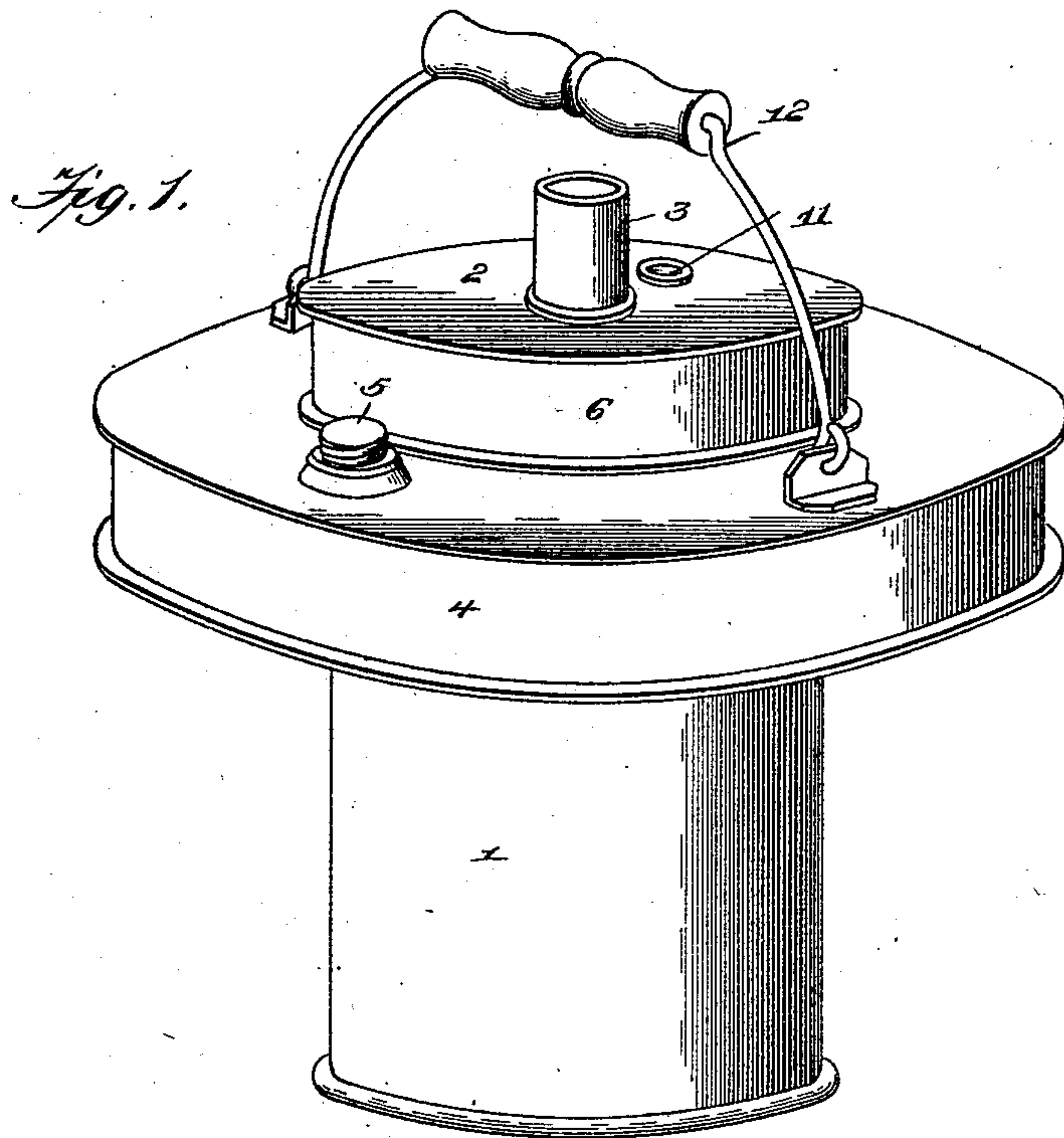


(No Model.)

H. A. PETERSON.
BROODER HEATER.

No. 551,835.

Patented Dec. 24, 1895.



Witnesses

John C. Shaw.
W. B. Hillyard.

By *his* Attorneys.

Inventor

Henry A. Peterson,

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UNITED STATES PATENT OFFICE.

HENRY A. PETERSON, OF BENSON, ILLINOIS.

BROODER-HEATER.

SPECIFICATION forming part of Letters Patent No. 551,835, dated December 24, 1895.

Application filed May 3, 1895. Serial No. 548,046. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. PETERSON, a citizen of the United States, residing at Benson, in the county of Woodford and State of Illinois, have invented a new and useful Brooder-Heater, of which the following is a specification.

This invention aims to provide an improved heater to be used in connection with brooders for maintaining the latter at a proper temperature, and aims to provide a device which will be essentially fireproof and will attain a circulation of air in a novel manner for supporting and sustaining the flame from which the initial heat is derived in the operation of the invention.

Other objects and advantages of the invention will become manifest as the nature of the invention is understood from the following description and claims when taken in connection with the drawings hereto attached, in which—

Figure 1 is a perspective view of a heater embodying the invention. Fig. 2 is a vertical section thereof.

The numeral 1 indicates a drum or casing, which is open at its lower end and closed at its top by a cover 2, the latter being centrally apertured and having a short tube 3 extending vertically therefrom. A hollow diaphragm 4 is located near the upper end of the drum 1 and intersects the sides thereof and projects beyond said sides for a distance equal to that part of the diaphragm projecting inward from the sides of the said drum. This hollow diaphragm 4 constitutes a radiator, and in the working of the device is filled with water, the latter being supplied thereto through an opening in the top side of the said diaphragm, and which is closed by a screw-cap or equivalent means 5. A hot-air space 6 is formed between the top 2 and the upper side of the diaphragm 4, which is in communication with the lower portion 7 of the drum by means of a passage 8, formed centrally through the hollow diaphragm 4 and in line with the tube 3. This vertical passage 8 is formed by means of a short tube which extends through the top and bottom sides of the diaphragm 4 and is attached thereto, thereby bracing and strengthening the said diaphragm at a middle point, and this passage 8 provides for the escape of

the gases and heated air occasioned by the burning of the lamp 9, which is placed within the lower portion 7 of the drum.

A pipe 10 is located to one side of the drum 1, and its upper portion extends through the hollow diaphragm 4 and communicates with the hot-air chamber 6, and is adapted in the operation of the invention to convey the heated air from the hot-air chamber 6 into the lower portion of the compartment 7, so as to properly feed the lamp 9 and supply fresh air thereto. A cold-air pipe 11 extends through the hot-air pipe 10 and through the hot-air chamber 6 and opens through the top 2, and is of smaller diameter than the pipe 10, whereby an annular space or passage is provided between it and the said hot-air pipe 10 for the circulation of the hot air. The lower end of the cold-air pipe 11 terminates a short distance from the plane of the lower end of the hot-air pipe 10, whereby the down current of the heated air will cause an inflow of air through the pipe 11. It will also be seen that by having the pipe 11 extending through the hot-air chamber 6, the hollow radiator or diaphragm 4, and the hot-air pipe 10 the air in passing therethrough will be tempered or heated prior to its entrance or supply to the lamp, thereby utilizing the fuel to the best possible advantage.

The lamp 9 may be of any pattern or type and is located within the compartment 7, and is thereby closed in by the lower portion of the drum 1, and said lamp being about centrally disposed has its chimney in vertical alignment with the passage 8 and the tube 3, thereby presenting an unobstructed escape for the gases. The heat radiated by the lamp warms the air in the compartment 7 and the water contained in the hollow diaphragm 4 and is radiated in the ordinary manner, thereby maintaining the temperature of the brooder at the proper degree. In order to facilitate the handling of the heater it is provided with a bail 12 of ordinary construction and applied thereto in the usual way.

The heater is placed upon the floor of the brooder or upon any suitable support found most convenient, and the lamp being closed in all danger from fire is wholly obviated.

Other objects and advantages than those set forth are apparent, and it is manifest that

in constructing and adapting the invention for different purposes and to fill various wants changes in the form, proportion, and the minor details of construction may be resorted to
5 without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

10 1. A brooder heater comprising a drum having a hollow diaphragm near its upper end for the reception of water, and intersecting with and projecting beyond the sides of the said drum and rigidly connected therewith and
15 having a hot-air chamber above the said diaphragm which is in communication with the compartment formed in the lower portion of the drum below the said diaphragm and through a passage formed therein, a heater,
20 or lamp, located in the lower portion of the drum, and means for supplying air thereto, substantially as set forth.

2. A heater for the purpose described, comprising a drum having a hollow diaphragm
25 near its upper end, and having a hot-air chamber above the said diaphragm which is in communication with the lower portion of the drum through a passage formed in the said diaphragm, a pipe extending through the diaphragm and affording communication be-
30 tween the hot-air chamber and the lowermost part of the drum, and a lamp, or heater, located in the lower part of the said drum, substantially as set forth for the purpose de-
35 scribed.

3. A heater of the character described, comprising a drum having a hollow diaphragm near its upper end, and which has a passage therethrough to establish communication be-
40 tween the upper and lower parts of the said drum, a hot-air pipe extending through the diaphragm and projecting within a short distance of the lower end of the drum, a cold-air pipe of less diameter than the hot-air pipe and extending therethrough and opening through
45 the top or closed end of the drum, and a heater, or lamp, located in the lower part of the said drum for the purpose described.

4. The herein-specified heater for the purpose described, comprising a drum open at its
50 lower end and closed at its top, and having a centrally-disposed tube rising vertically therefrom, a hollow diaphragm located near the upper end of the drum and intersecting
55 with and projecting beyond the sides thereof, and having a centrally-disposed passage in alignment with the vertical tube, a hot-air pipe located to one side of the drum and extending through the hollow diaphragm, and
60 a cold-air pipe projecting through the hot-air pipe and opening through the top or closed end of the drum, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY A. PETERSON.

Witnesses:

JAMES SHIELDS,
F. E. LEARNED.