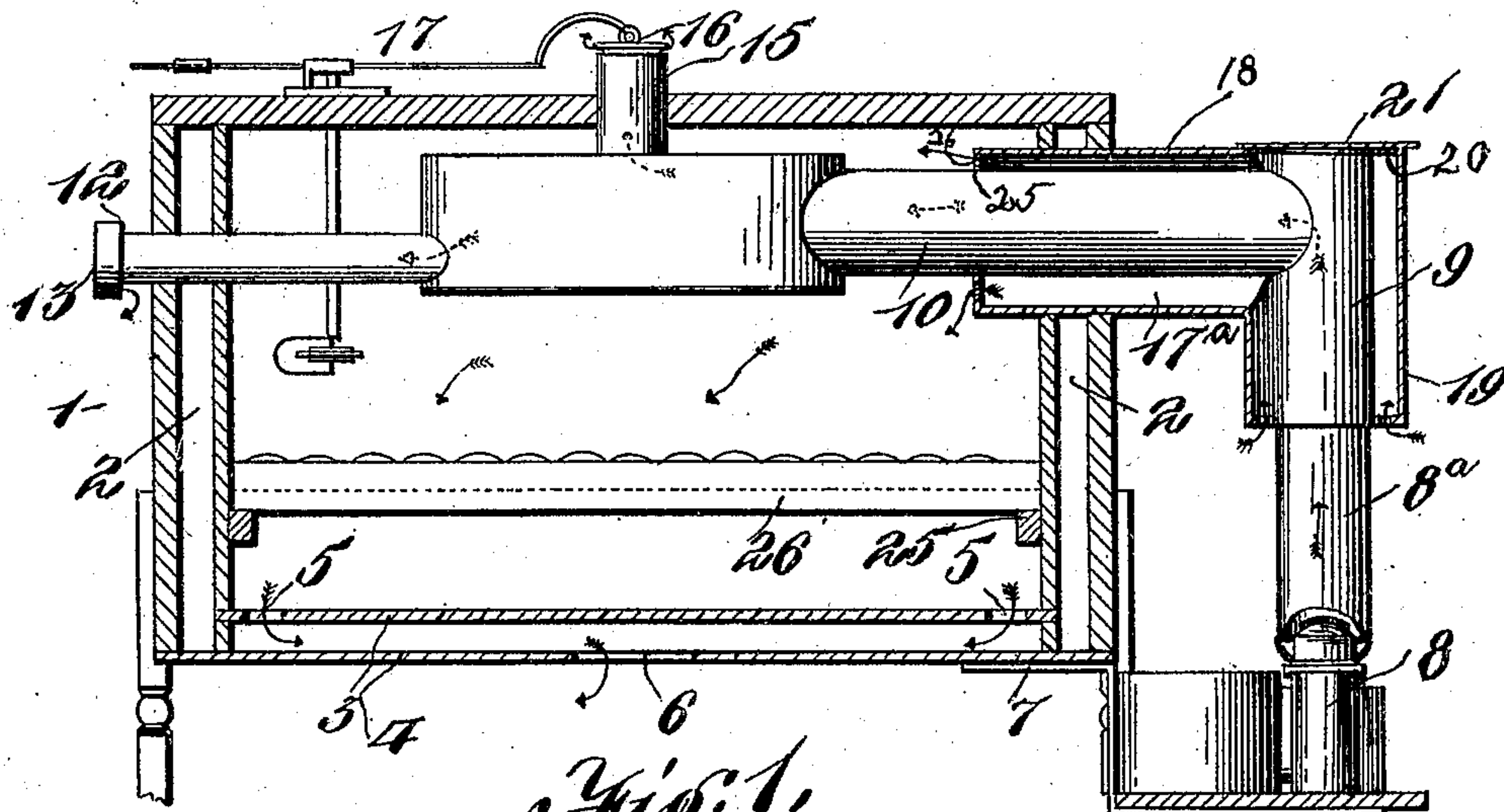


No. 805,970.

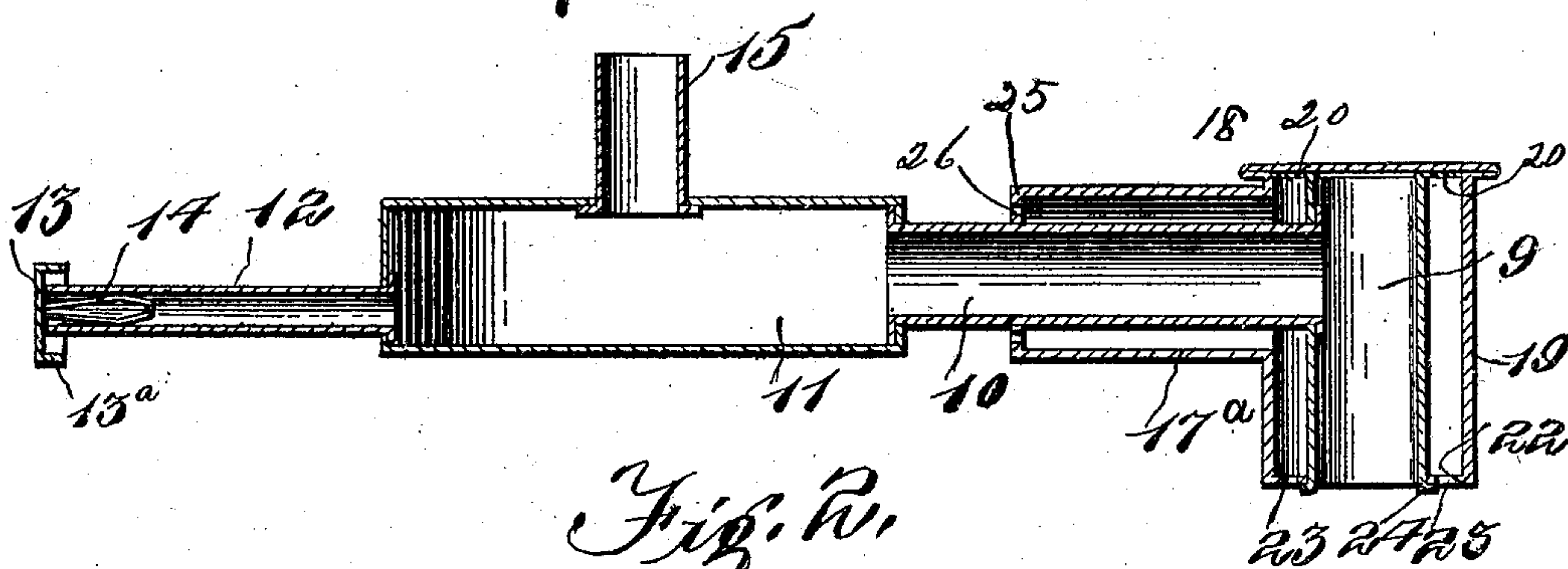
PATENTED NOV. 28, 1905.

H. E. KELLER.  
INCUBATOR.

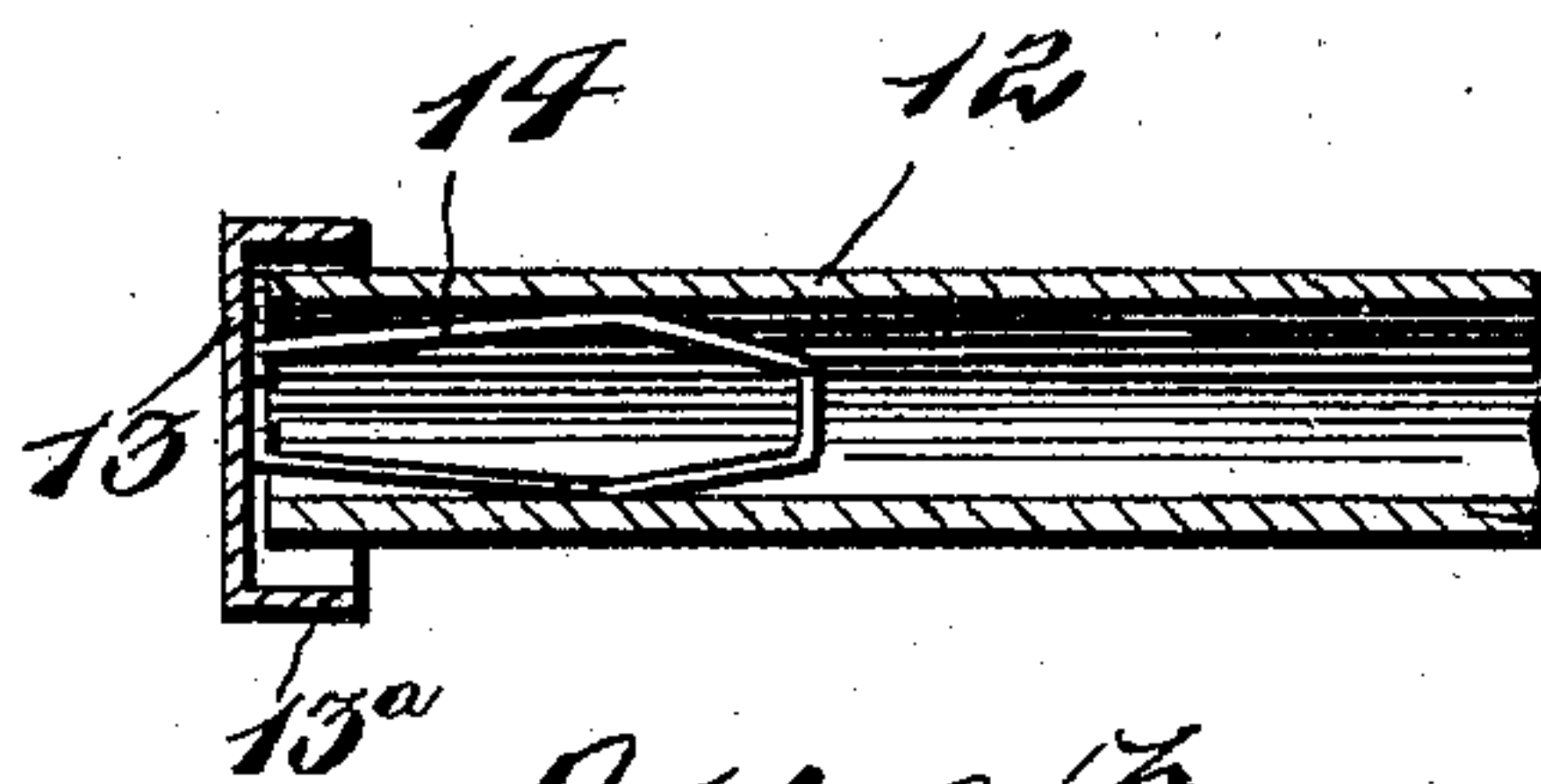
APPLICATION FILED JULY 3, 1905.



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

WITNESSES:

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*Alfred C. Lawson*

INVENTOR

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By *Francis Appelman*  
Attorney



# UNITED STATES PATENT OFFICE.

HENRY EDWARD KELLER, OF DECATUR, INDIANA.

## INCUBATOR.

No. 805,970.

Specification of Letters Patent.

Patented Nov. 28, 1905.

Application filed July 3, 1905. Serial No. 268,107.

*To all whom it may concern:*

Be it known that I, HENRY EDWARD KELLER, a citizen of the United States of America, residing at Decatur, in the county of Adams and State of Indiana, have invented certain new and useful Improvements in Incubators, of which the following is a specification.

This invention relates to incubators, and has for its object to provide a device of this character wherein the warm air employed for the generation of life is pure and not contaminated with the products of combustion from the source of heat.

It is also an object of the invention to provide in a device of this character novel means whereby the heat is directed in a steady flow or current to the eggs.

It is also an object of this invention to so direct the current of heated air that no gases that would be injurious to the eggs will accumulate, means being provided that the gases will be forced out of the incubator by the flow of the heated air.

Furthermore, it is an object of this invention to provide novel means whereby the temperature of the heated air may be readily regulated to a predetermined degree.

Finally, an object of this invention is to provide a device of the character that will be simple in construction, efficient in practice, and comparatively inexpensive to produce and maintain.

With the foregoing and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, wherein like characters denote corresponding parts in the several views, in which—

Figure 1 is a side view, partly in elevation and partly in section, of the invention. Fig. 2 is a sectional view of the heating apparatus. Fig. 3 is a fragmentary sectional view illustrating a detail of the invention.

In the drawings, 1 indicates an incubator-body of any preferred shape or material provided with the double sides 2 and the double bottom 3 4. Near the edges of the bottom 3 are arranged apertures or openings 5, which may be of any number, it being but essential that the openings be located near or along the edges of the bottom. Centrally of the bottom 4 is located an enlarged opening or ap-

erture 6, which is plainly apparent in Fig. 1. Secured to the bottom 4 of the incubator, to one side thereof, is a bracket or shelf 7; which is intended to support a lamp 8, which may be of any preferred or ordinary construction, although it is desirable that said lamp be provided with a chimney 8<sup>a</sup>.

The upper or free end of the chimney 8 is intended to fit within the mouth of an approximately L-shaped tube 9, which has its longer member 10 arranged on a horizontal plane when in operative position. This member 10 extends within the incubator through a suitable opening in the side thereof and communicates with a drum 11, to which it is secured. This drum is a flat cylindrical casing and has extending from it on the side opposite the member 10 and alining therewith a small tube 12, which extends through a side of the incubator and communicates with the atmosphere. A cap 13 is provided for the end of this tube 12, and said cap is of greater diameter than the tube and is provided with an annular flange 13<sup>a</sup>, although it is to be understood that the flange may be dispensed with. Secured centrally of the cap within the flange is a spring member 14, which is inserted within the tube 12 and engages the wall thereof to hold the cap in position. By this means the opening of the tube can be regulated and the draft therethrough easily controlled, as will be readily understood by those familiar with this art. The spring member 14 may be of any determined construction; but it is preferably, as shown in the drawings, formed of a single strip of metal bent centrally upon itself with its ends secured to the cap. The spring is so bent a portion of its length as to produce a space between its members greater than the diameter of the interior of the tube 12. Projecting upwardly centrally of the drum 11 is a short tube 15, which passes through the top of the incubator and opens to the atmosphere. This tube is provided with a cap or cover 16, which is secured to and controlled by a thermostatic device 17 of any ordinary or preferred form. As the construction of the thermostat forms no specific feature of the invention, a detailed description is thought unnecessary, as any form may be employed that will operate with success. The object of the thermostat is thought to be understood; but it may be stated by this means the heat passing through the tube 11 is so regulated as not to exceed the desired temperature. Arranged around the L-shaped tube 9 is a second L-shaped



tube 17<sup>a</sup> of greater diameter than the tube 9. This member 17<sup>a</sup> has its longer member 18 also extending within the incubator to discharge therein. The upper end of the short member 19 is closed and rests on a flange 20, arranged around the upper end of the short member 21 of the tube 9. The bottom of the short member 19 is provided with a flange 22, having a plurality of openings or apertures 23, through which air from the atmosphere is to be drawn, said air being heated by the products of combustion passing through the tube 9. The air within the incubator is further heated by the drum 11. The inner end of the member 18 is provided with an annular flange 25, which contacts with the member 10, and thereby closes the inner end of the member 18. This flange 25 is provided with a series of perforations or openings 26 for the passage of the heated air.

The passage of air within the incubator is plainly indicated by the arrows and a description thereof is thought unnecessary.

The flange 22 of the member 19 rests on a flange 24 on the lower end of the short member 21 of the tube 9.

The sides of the incubator on the interior are provided with rests 25, on which are supported the racks 26, in which the eggs are placed.

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

1. In combination, a receptacle having openings in the bottom thereof, a drum within the receptacle, branches on the drum communicating with the atmosphere, said branches having their longitudinal axes in the same vertical plane, a cap slidably held by one of the branches for controlling the opening thereof; the remaining branches of the drum being adapted to communicate with a source of heat.

2. In combination, a receptacle having openings in the bottom thereof, a drum within the receptacle, branches on the drum communicating with the atmosphere, said branches having their longitudinal axes in the same vertical plane, a cap, spring-arms carried by the cap, said arms being adapted to extend within one of the branches of the drum, and bind against the walls thereof, said cap controlling the opening of the branch the remaining branch being in communication with the source of heat.

3. In combination, a receptacle having openings in the bottom thereof, a drum within the receptacle, branches on the drum extending through the sides of the receptacle, a cap slidably held by one of the branches for controlling the opening thereof, one of said branches being in communication with a source of heat, a branch on the drum extending through the top of the receptacle, and an automatically-operated valve for the last-named branch.

4. In combination with a receptacle having openings, a drum therein, branches on the drum communicating with the atmosphere, an L-shaped branch on the drum, a shorter member of the branch being exterior of the receptacle, flanges formed on the upper end of the shorter member, an L-shaped section carried by the L-shaped branch, said section resting on the flanges of the shorter member of the L-shaped branch, said L-shaped member forming with the exterior of the L-shaped branch, a chamber for the passage of air.

In testimony whereof I affix my signature, in the presence of two witnesses, this 30th day of June, 1905.

HENRY EDWARD KELLER.

Witnesses:

OSCAR HOFFMAN,  
F. V. MILLS.