G. H. STAHL.

INCUBATOR.

APPLICATION FILED DEC. 13, 1910.

1,010,085.

Patented Nov. 28, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

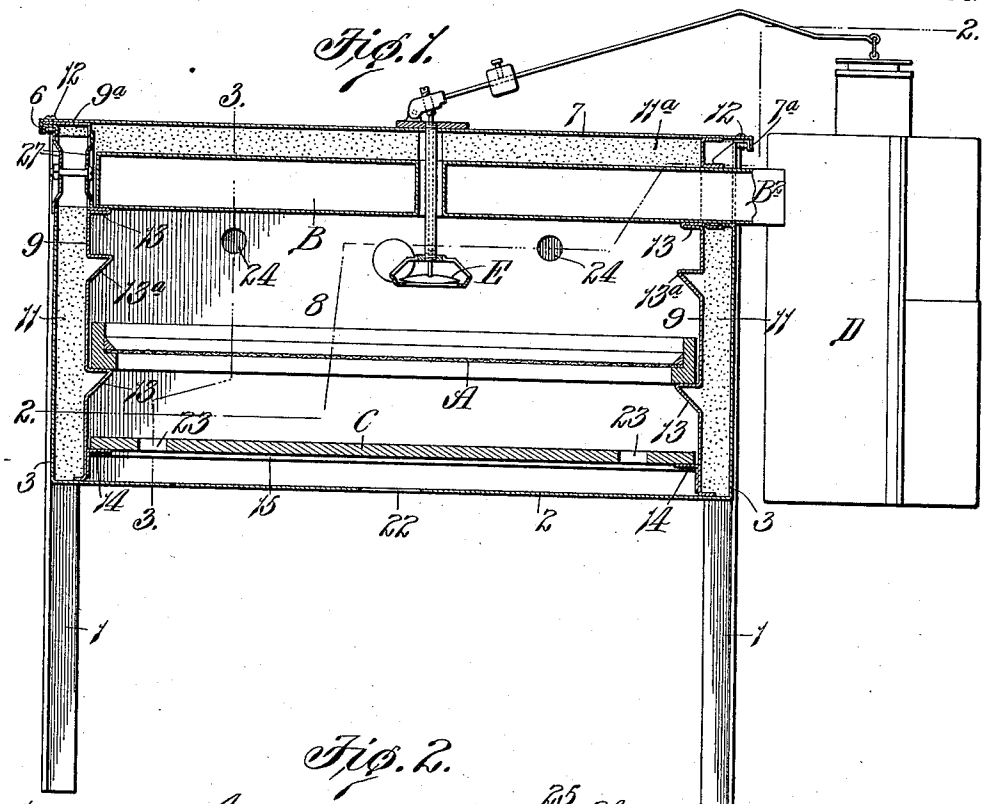
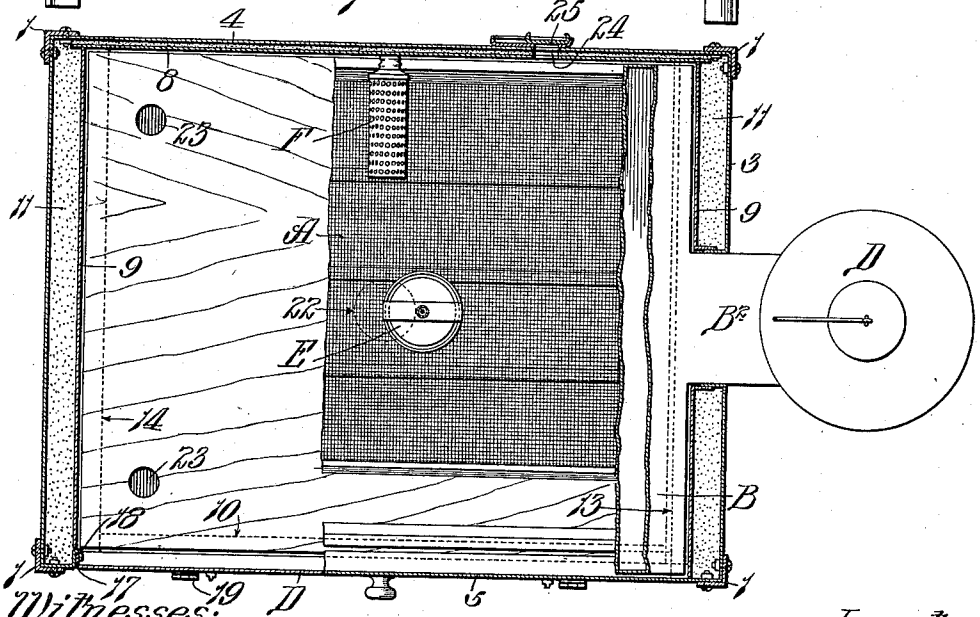


Fig. 2.



Witnesses:
Geo. R. Cadsow
Nells L. Church.

Inventor,
George H. Stahl.
By Paul Bakewell Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

G. H. STAHL.

INCUBATOR.

APPLICATION FILED DEC. 13, 1910.

1,010,085.

Patented Nov. 28, 1911.

2 SHEETS—SHEET 2.

Fig. 3.

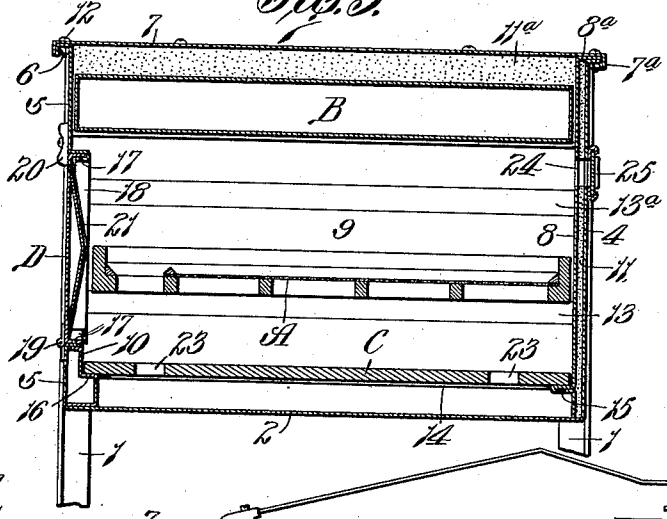


Fig. 4.

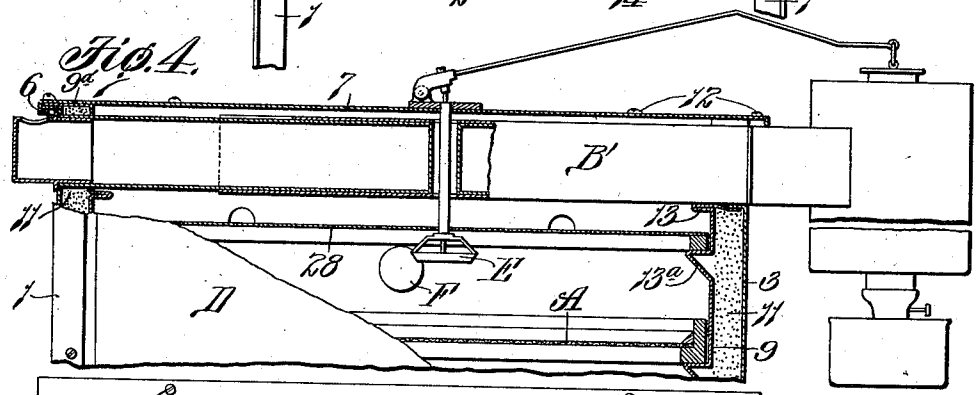
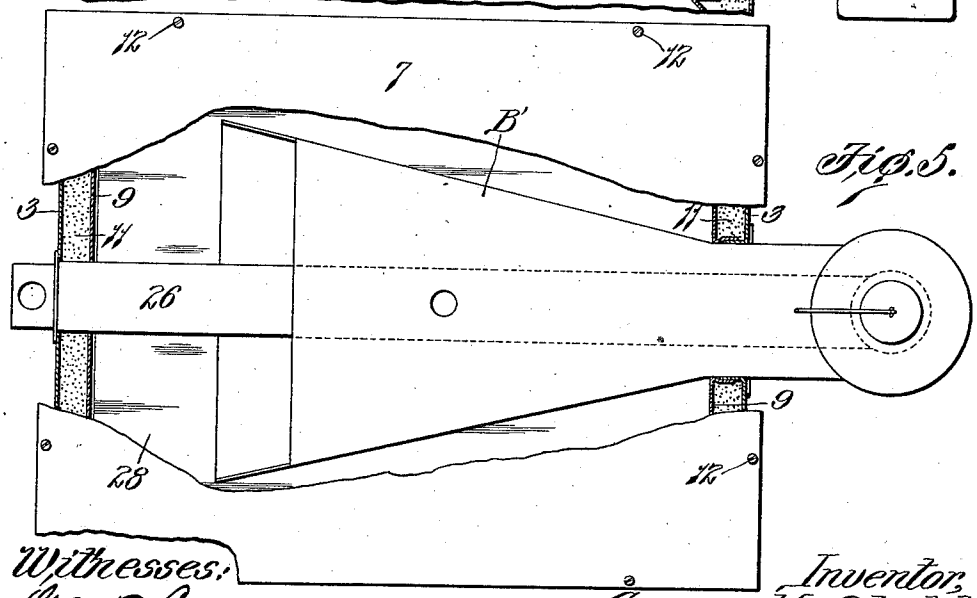


Fig. 5.



Witnesses:
Geo. R. Cadoux
Wells R. Church.

Inventor,
George H. Stahl.
By Paul Bakewell Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE H. STAHL, OF QUINCY, ILLINOIS.

INCUBATOR.

1,010,085. Specification of Letters Patent. Patented Nov. 28, 1911.

Application filed December 13, 1910. Serial No. 597,132.

To all whom it may concern:

Be it known that I, GEORGE H. STAHL, a citizen of the United States, residing at Quincy, Illinois, have invented a certain new and useful Improvement in Incubators, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to chicken incubators.

One object of the invention is to provide an indestructible metal incubator that can be manufactured at a low cost.

Another object is to provide an inexpensive metal incubator that presents a neat and ornamental appearance, and which is so designed that it can be taken apart easily, either for the purpose of cleaning same or for renewing or replacing certain parts which it is desired to change. And still another object is to provide an incubator which is so designed that either a hot water heating device or a hot air heating device can be used in same.

Figure 1 is a vertical sectional view of an incubator constructed in accordance with my invention; Fig. 2 is a horizontal sectional view taken on approximately the line 2—2 of Fig. 1; Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 1; Fig. 4 is an elevational view partly in vertical section, showing the incubator equipped with a hot air heating device; and Fig. 5 is a top plan view partly broken away of the structure illustrated in Fig. 4.

Referring to the drawings which illustrate the preferred form of my invention, 1 designates four standards or legs which support the incubator, said legs preferably consisting of commercially rolled angle iron. The incubator has double walls between which heat-insulating material is arranged, and the casing or outer wall is formed of sheet metal, preferably galvanized iron. The bottom wall 2 of said casing and also the side walls 3, the rear wall 4, and the front wall 5 thereof are permanently connected to the legs or standards 1, said legs being so arranged that they embrace the four corners of the casing, and thus cover the joints or seams between the pieces of metal that form the vertical walls of the casing. The upper edges of these vertical walls are flanged outwardly and downwardly, as shown in Figs. 1 and 3, so as to produce a substantially inverted L-shaped rim 6 that strengthens the casing and also serves as a means to which the top 7 of the casing can be connected. This top 7 is removable, and it is provided with a downwardly projecting flange 7^a that fits over the rim on the upper edge of the vertical walls of the casing.

The inner wall or lining of the incubator is made up of a number of pieces of sheet metal that are arranged parallel to the side walls 3 and rear wall 4 of the outer casing, said pieces being spaced away from the outer casing so that heat-insulating material of any preferred character can be arranged between the inner and outer walls of the incubator. The plate 8 or piece of metal that constitutes the rear wall of the inner lining is retained in position by means of the plates or pieces 9 that constitute the side walls of the inner lining, as shown clearly in Fig. 2, and these side plates 9 are retained in position by means of a locking strip or member 10 arranged parallel to the front wall of the outer casing below the door-opening in said wall, as shown in Fig. 3. An inner lining constructed in this manner can be arranged in position quickly and can be taken apart easily, either for the purpose of cleaning or for renewing the pads 11 of insulating material that are interposed between the inner and outer walls of the incubator. Such a construction also overcomes the necessity of using fastening devices for retaining the inner lining in position because the side plates 9 bear against the rear plate 8 and hold it in an upright position, and the locking member 10 which is arranged between said side plates 9 retains them in position. I prefer, however, to form laterally projecting flanges 8^a and 9^a on the upper edges of the plates 8 and 9 of the inner lining so that said flanges will lie between the top 7 of the outer casing and the rim 6 on the outer casing, the top 7 of the outer casing being retained in position by means of bolts 12 or other suitable fastening devices that pass through the flanges on the inner lining and through the rim 6 of the outer casing.

The side plates 9 of the inner lining are provided with integral ribs 13, as shown in Fig. 1, for supporting the egg-tray A and the heat-distributing member B of the heat-

ing device, which ribs are formed by bending or pressing the side plates 9 in the manner shown in Fig. 1. Angle-shaped strips 14 are connected to the lower edge portions of these side plates 9 for supporting the floor C of the incubating chamber, and, if desired, the rear plate 8 of the inner lining can also be provided with an integral rib 15 on which the rear edge portion of the floor rests. The locking strip 10 is provided with a flange or supporting shoulder 16 on which the front edge portion of the floor C rests so that the floor C locks all of the elements of the inner lining in operative position, it being impossible to remove the locking strip 10 without first removing the floor C.

The door D of the incubator consists of a piece of sheet metal provided with an inwardly projecting rim or flange 17 that projects into a groove adjacent the door opening, said groove being formed by strips of metal 18 connected to the outer casing and bent or pressed into substantially channel-shape in cross section, as shown clearly in Fig. 3. By constructing the door of the outer casing in this manner I obtain a tight closure for the incubating chamber. The lower edge of the door is connected by hinges 19 to the front wall of the casing, and buttons or other suitable devices 20 are arranged adjacent the upper edge of the door opening for holding the door closed. If desired, the door can be provided with a reinforcing or strengthening member 21 arranged inside of same, as shown in Fig. 3, and pressed or crimped in any manner to impart stiffness thereto.

The heat-distributing member B of the heating device forms the top of the incubating chamber, and a heavy pad 11^a of insulating material is arranged between said reservoir and the removable top 7 of the casing, one of the side walls of the casing and the coöperating side wall of the inner lining being provided with an opening for receiving the part B^2 of the water reservoir to which the lamp or heating device D is connected.

Any suitable kind of a thermostat E can be used for controlling the heating device, and, if desired, a perforated holder F can be arranged inside of the incubating chamber for receiving material that supplies moisture to the incubating chamber. Air is admitted to the incubating chamber through a hole 22 in the bottom 2 of the casing and holes 23 in the floor C. The air escapes from the incubating chamber through holes 24 in the rear wall of the incubator, suitable slides or shutters 25 being mounted on the rear wall of the casing for regulating the escape of air through said holes.

Instead of using a hot water heating device with the incubator, as shown in Fig. 1, a hot-air heating device can be used. In Figs. 4 and 5 I have illustrated a hot air heating device provided with a hollow radiating device or heat-distributing member B′ that extends over the incubating chamber, a flue 26, which leads from the heating device, projecting through an opening in one of the side walls of the incubator, as shown in Figs. 4 and 5. When a hot water heating device is used with the incubator these holes are closed by means of caps 27, as shown clearly in Fig. 1. It is preferable to arrange a heat-deflecting member 28 under the radiator B′ of the heating device shown in Fig. 4, and I have therefore provided the side walls of the inner lining with ribs or projections 13^a on which the heat-deflecting member 28 can be mounted, said ribs 13^a being preferably formed integral with the side pieces 9 of the inner lining.

An incubator of the construction above described is indestructible as practically all of the parts of same are formed of sheet metal, it can be manufactured at a low cost, and it presents a neat and ornamental appearance; and still another desirable feature is that the inner lining and floor of the incubating chamber can be assembled quickly and removed easily either for the purpose of cleaning the incubator or renewing the insulating material arranged between the double walls. The fact that either a hot air or hot water heating device can be used with the incubator is also a desirable feature and adds greatly to the commercial value of the incubator.

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

1. An incubator provided with double walls between which heat-insulating material is arranged, the inner wall being composed of a number of removable metal plates having devices for supporting the egg-tray and heat-distributing member of the incubator, the side wall plates operating to hold the rear wall plate in position, and a removable member forming part of the inner front wall and arranged between said side wall plates.

2. An incubator having an outer sheet metal casing, removable sheets of heat-insulating material arranged over the inner face of said casing, a removable inner lining composed of a rear wall plate, two side wall plates which hold said rear wall plate in position, and a removable locking member that holds said side wall plates in position, and a removable floor arranged between said plates and locking member and supported by same.

3. An incubator having double sheet metal side walls, the inner portions of which are removable, removable pads of insulating material arranged between said walls, a

heating device provided with a removable heat-distributing member arranged in the upper portion of the incubator, a removable top detachably connected to the side walls, and a pad of heat-insulating material arranged between said heat-distributing member and the removable top of the incubator.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 9th day of December 1910.

GEORGE H. STAHL.

Witnesses:

JOHN O. GLENN,

E. C. BERNBROCK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."