O. A. HENSEL.

INCUBATOR.

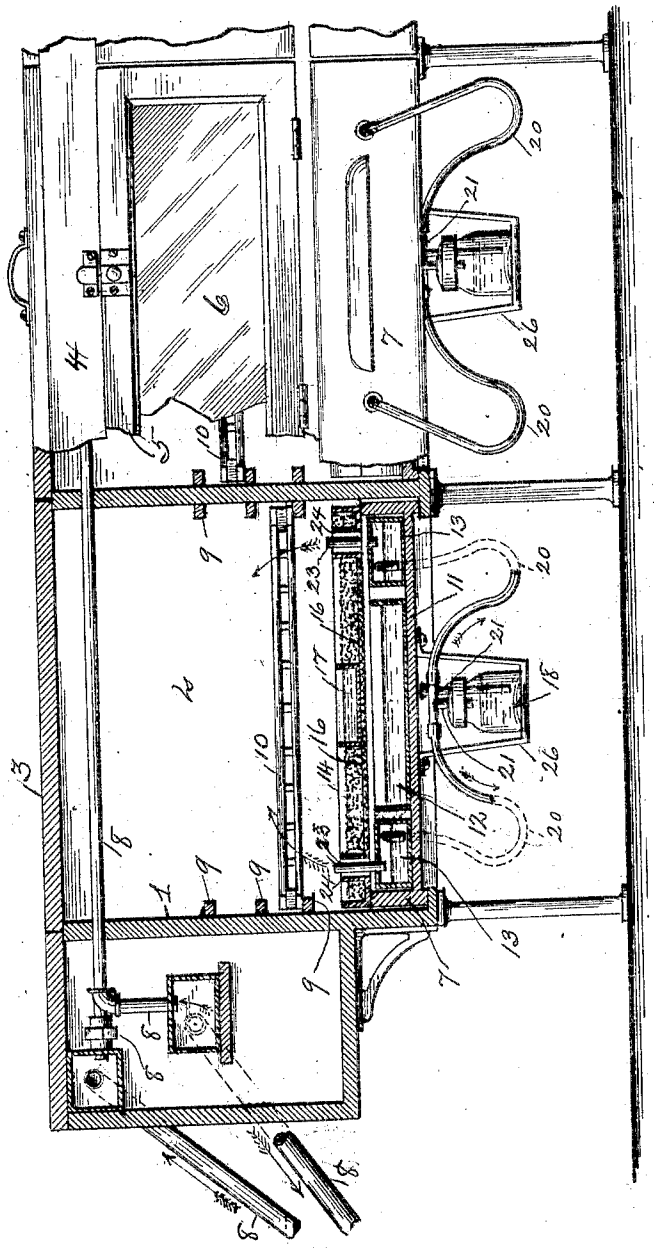
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1,068,128.

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2 SHEETS—SHEET 1.

Fig. 1



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2

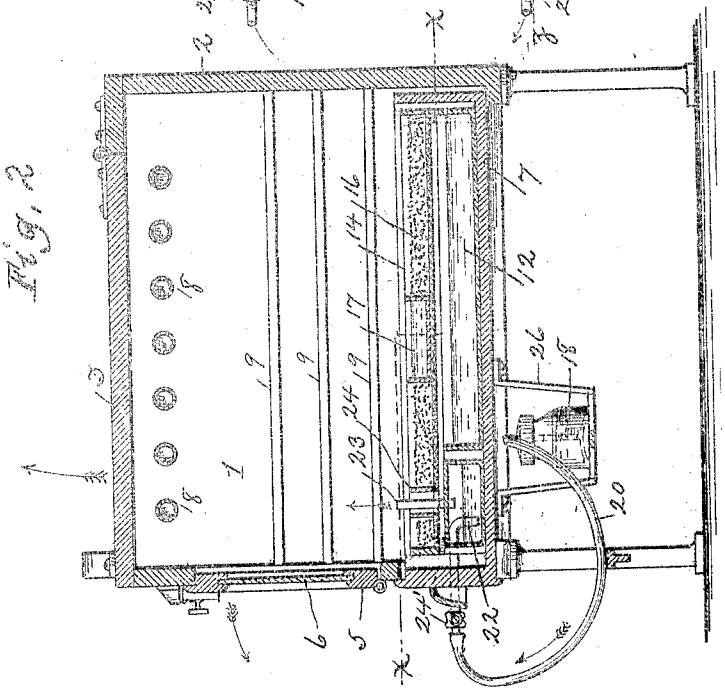
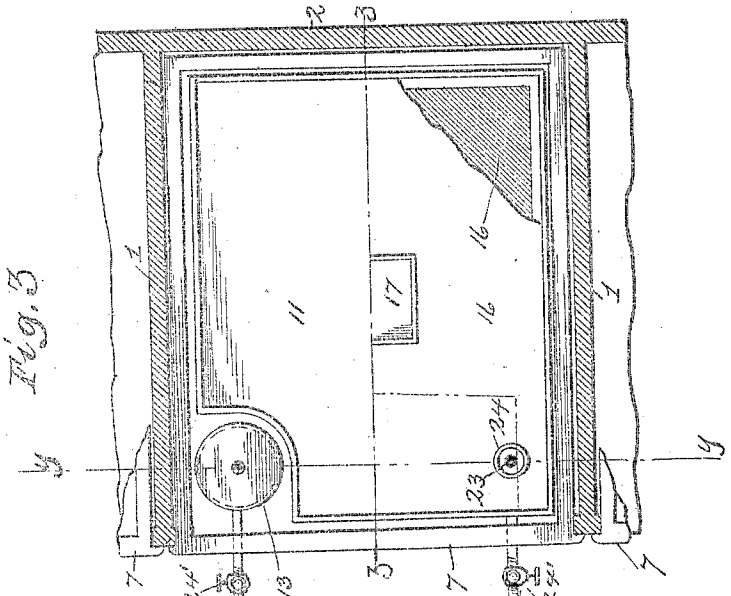


Fig. 3



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INCUBATOR.

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To all whom it may concern:

Be it known that I, OTTO A. HENSEL, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Incubators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in incubators, the object being to provide the same with such means that will maintain the eggs therein, with natural surrounding environments, such as earth, leaf-mold, moisture, a proper supply of oxygen, heat, and an absorbent to remove the impurities from the atmosphere conditions within the inclosure, and with these and other objects in view, the invention consists in the novel details of construction and combination of parts, as will be more fully described hereinafter.

In the accompanying drawings, Figure 1 is a side sectional view, partly in outside elevation, showing my improved incubator, said section taken on the line *y*—*y*, of Fig. 3. Fig. 2 is a transverse sectional elevation on the line *z*—*z*, of Fig. 3. Fig. 3 is a sectional view, or plan, taken on the line *x*—*x* on Fig. 2.

To construct an incubator in accordance with my invention, I form from suitable material, one or several box-shaped units, comprising sides 1, rear walls 2, a hinged cover or top 3, an open bottom, provision being made in the front wall 4, for a hinged door 5 fitted with glass 6, and a sliding drawer 7, which in addition to closing the bottom, is capable of containing a number of receptacles, the purpose of which will be fully described hereinafter. These units are equipped with heating apparatus of any well-known type; that shown in part, on the drawings, comprises a series of radiating tubes 8, connected with a heating device and circulates hot water or air. The incubator, is also equipped with other well known apparatus, (not shown) such as a ventilator, automatic heat regulator, thermometer, etc., which does not form a part of this invention. The construction of each unit is analogous, the one being separate from the other, or may be built in detachable or integral sections, therefore but one of the units will be described.

Arranged within the box-shaped compartment beneath the heating tube 8, and attached to the side walls 1, are supporting strips 9, arranged in series, the one series directly opposite the other, and are used for supporting egg trays 10, which may be of any desired construction suitable for the purpose. These supporting strips are arranged in such manner that the tray during the first period of egg incubation may be arranged comparatively close to the heating pipe 8, and lowered or placed farther away during the latter periods of the same, which method of procedure gives better results.

Placed within the above mentioned drawer 7, and resting upon the bottom of the same is a large shallow pan 11, partially filled with water 12, said pan having a portion of each front angle removed, to give room for two small closed receptacles 13, each of which is partially filled with water. The large pan 11, is for the purpose of supplying moisture, a certain quantity of which is necessary for the proper incubation of the eggs and the small receptacles 13, form a part of the apparatus for furnishing oxygen to the eggs, as will be more fully described hereinafter.

Arranged over the moisture pan 11, is another pan 14, the bottom of which is formed with a fine mesh, woven wire 16, capable of maintaining a quantity of earth mixture with loam, such as may be found beneath large leaf plants or dense growth of shrubbery, brush or such places as a hen would by instinct seek as her nesting place. Placed within the earth pan at any suitable position is a small receptacle 17, capable of containing a substance such as soda lime, charcoal, etc., which will destroy or absorb all obnoxious or poisonous gases, such as the egg throw off at certain periods of incubation. This precaution is necessary to procure healthy chickens, as the shells of the egg during this period are somewhat porous and being inclosed without sufficient ventilation will absorb more or less poisonous gases, to the detriment of the live chicks therein.

To supply oxygen to vitalize the air within the incubator, I provide an oxygen generator, which comprises a jar 18, filled with sulfuric acid acting on barium dioxid and

fitted with a cover provided with a connection 21, to which flexible tubing 20 is connected, said tubing leading to connections 22, communicating with the small receptacle 13, arranged within the moisture pan 11, above described. The exit of each of these latter mentioned connections 22, is beneath the surface of the water contained in the receptacles 13, to form a seal and retard and wash the flow of oxygen from the generator 18. A small vertically arranged exit tube 23, is fitted in the top of each of the receptacles 13, and projects upwardly through large tubes 24, formed with the wire mesh bottom of the earth pan 14. This arrangement will permit the oxygen to flow upward into the incubator proper, and nourish the embryo or live chicks therein. As the embryo grow they give off an increasing amount of used up air. This is poisonous, being laden with the waste products of their own developing bodies, hence the use of oxygen and the destruction of said poison-laden air, which latter is accomplished by the use of the above described chemical disinfectant.

The oxygen generator is supported on a bracket 26, attached beneath the drawer 7, but may be arranged in any suitable position, and the conduits 20, leading therefrom fitted with regulating valve 24', if it is so desired. It will be noticed that the contents of the drawer 7, may be removed, cleansed and replaced without undue labor, as the several pans, etc., are not permanently fixed but merely placed in loose compact form.

The operation of the above incubator does not differ materially from the best form now in use, but with the additional new features herein described, better results, such as a greater yield, or percentage of chicks are procured, as well as a healthy strong brood of chicks, the result of hygienic and natural environments.

Many slight modifications may be made in the construction of the details without departing from the spirit of the invention.

I claim.

1. An incubator comprising a compartment, a means of supplying heat thereto and moisture therein, and suitably arranged egg trays, in combination with a sliding drawer, having arranged therein a moisture pan, an earth pan with perforated bottom arranged above said moisture pan, an open receptacle for disinfecting and purifying material, an oxygen generator having ducts leading to receptacles arranged in said drawer, and having exit tubes from said receptacles discharging above the level of said earth pan.

2. An incubator having an incubating compartment, means for heating said compartment, a sliding drawer arranged in the bottom of said compartment, a moisture-pan within said drawer, an earth-pan arranged above the moisture-pan, a disinfectant-container within the earth-pan, a fluid receptacle within the moisture-pan, an oxygen-generator having a duct leading to said receptacle, and an exit tube from said receptacle discharging above the level of said earth-pan.

In testimony whereof, I affix my signature in presence of two witnesses.

OTTO A. HENSEL.

Witnesses:
M. E. HARRISON,
FRED H. MCQUISTON