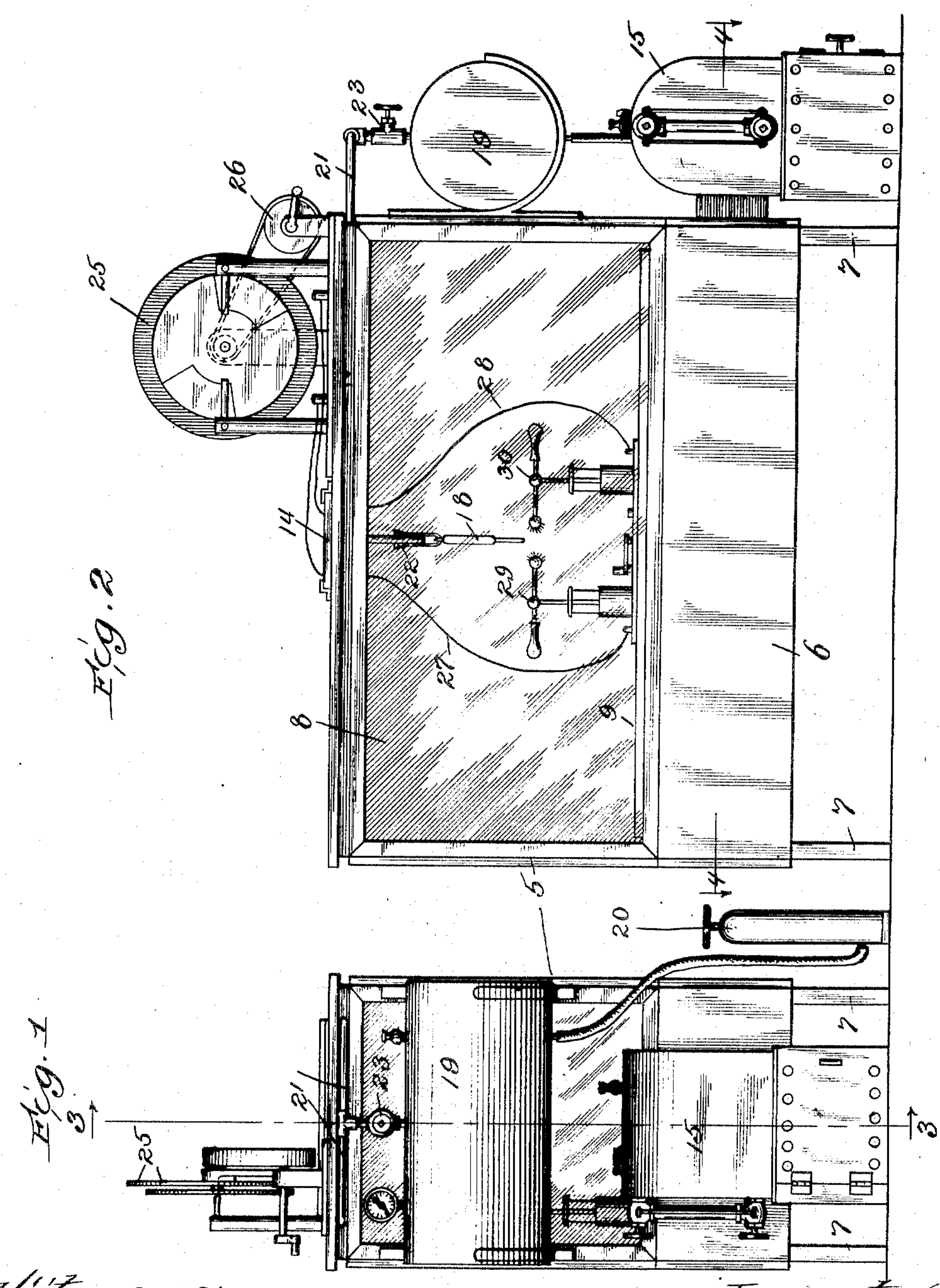
No. 759,612. PATENTED MAY 10, 1904.

G. H. HOW.

INFANT INCUBATOR.

APPLICATION FILED APR. 30, 1903.

NO MODEL. 2 SHEETS—SHEET 1.



Witnesses:
Ray White
Harry B. Schulte.

Inventor:
George H. How.
By Force Bain, Atty.

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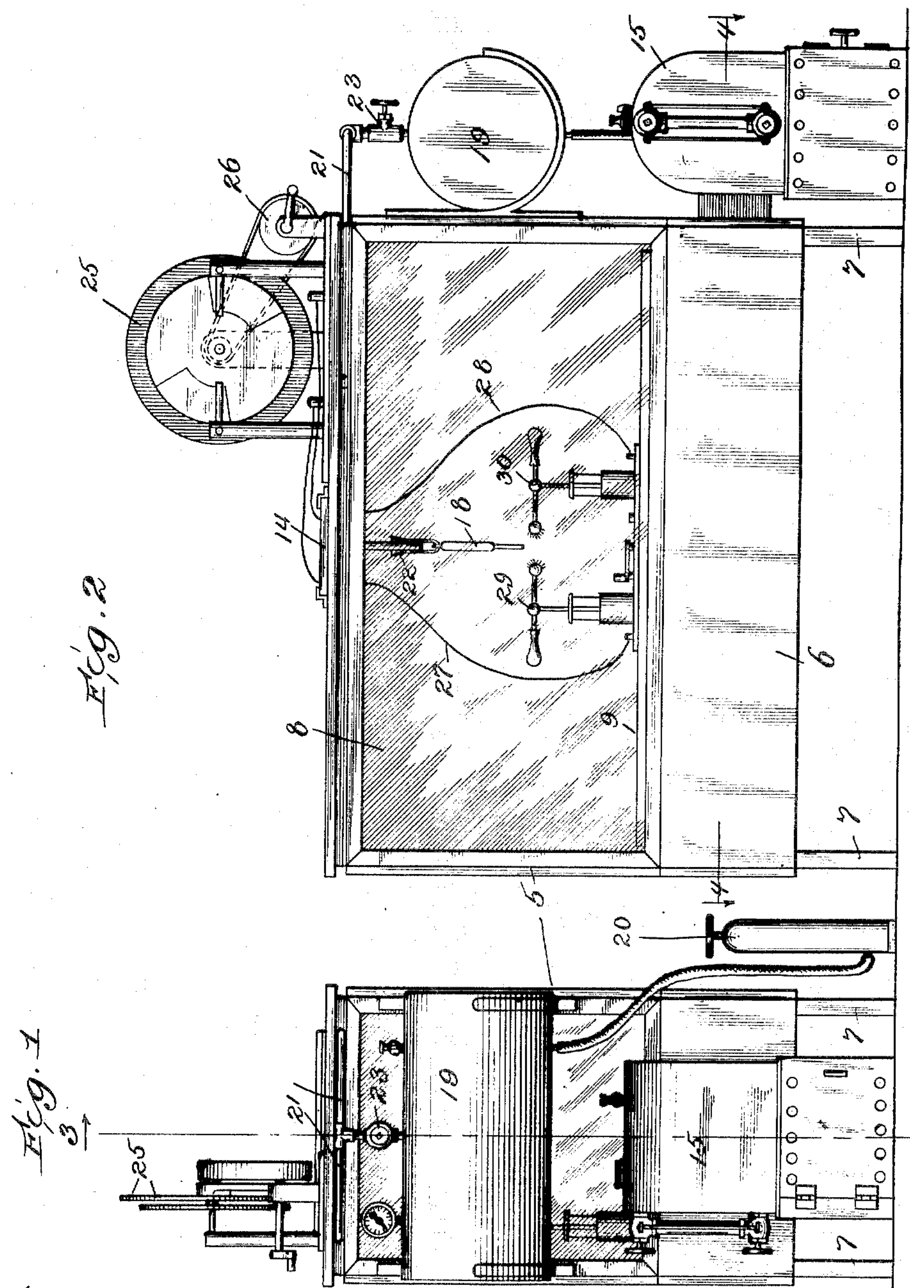

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UNITED STATES PATENT OFFICE.

GEORGE H. HOW, OF CHICAGO, ILLINOIS.

INFANT-INCUBATOR.

SPECIFICATION forming part of Letters Patent No. 759,612, dated May 10, 1904.

Application filed pril 30, 1903. Serial No. 155,030. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. HOW, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Infant-Incubators; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to incubators for infants, and has for its primary object to provide a device of the character specified capable of establishing and maintaining salutary and hygienic atmospheric conditions and equable conditions of temperature best adapted to the maintenance of health in infant children.

More specifically, one of the objects of my invention is to provide an incubator of the character described wherein provision is made for heating the air introduced into the interior of the incubation-chamber to any desired degree without, however, introducing into said air products of combustion from the primary source of heat-supply or other deleterious matters.

A further object of my invention is to provide means for producing in the air contained in the incubator quantities of ozone to induce healthful and salutary conditions therein; and yet a further object of my invention is to provide means for creating a proper circulation of hot and cold air within the incubation-chamber.

With a view to attaining these and other objects, which will become apparent from the following description, my invention consists in the features of construction and arrangement of parts hereinafter more fully described, and specified in the appended claims.

In the drawings, Figure 1 is an end elevation of an incubator constructed to embody my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse vertical section taken on lines 3 3 of Fig. 1. Fig. 4 is a sectional plan taken on line 4 4 of Fig. 2.

Throughout the drawings like numerals of reference refer to like parts.

Referring now to the drawings, 5 indicates an inclosing casing having an air-heating chamber 6, supported upon legs 7 and separated from a superposed glass-inclosed chamber 8 by a suitably-supported floor 9. Air is admitted into the air-heating chamber through suitable apertures 10 and passes therefrom into the chamber 8 through passages 11 and thence to the exterior of the incubator partially through outlets 12. Additional air-inlet apertures 13 are preferably formed in the top of the casing, and an apertured slide 14 is provided to open or close said inlet-apertures. A similar slide 10′ is provided to regulate the opening of apertures 10.

15 indicates a water-radiator, having a water-leg 16 extending into the air-chamber 6 a suitable distance and at its outer end communicating with the body of the radiator. A suitable primary source of heat-supply, such as an oil-burner 17, is associated with the radiator-body to heat the water therein, such burner being located without the air-heating chamber 6. It will be understood that any suitable apparatus may be provided for this purpose, the only requirement being that the heating devices be arranged exterior of the casing, so that products of combustion are not carried thereinto by the entering air. It will be apparent that air entering through the apertures 10 will sweep upward around the water-leg 16 of the radiator and become heated.

A thermometer 18 is suitably suspended within the incubator-chamber to enable the attendant to maintain the heat at a proper degree.

To stimulate a free circulation of relatively hot and cold air within the incubator-chamber, I provide means for exhausting air from the interior of the chamber. To this end I provide at a suitable point a vacuum-tank 19, adapted to be exhausted by a suitable pump 20 and connected by a pipe 21 with a suitable inlet 22. A suitable valve 23 is provided in the pipe 21 to regulate the quantity of air which may pass through the said pipe to the vacuum-tank.

It will be apparent that when the pressure within the vacuum-tank is brought sufficiently below atmospheric pressure by the operation

of the pump and the valve 23 is properly set air will be drawn from the incubation-chamber into said tank and a fresh supply of air drawn in through the inlet-passages. The amount of air entering through openings 10 and 13 can be controlled by proper adjustment of their respective slides, so that an admixture of relatively hot and cold air can be obtained which will maintain the interior of the incubator-chamber at proper temperature.

Associated with the parts described I employ means for creating electrical disturbances within the incubator-chamber, causing disruptive electrical discharges therein and generating ozone within the incubator-chamber 8.

In the present illustration, 25 indicates a static electric machine of well-known construction, belted to a pulley 26, which may be adapted for manual or power rotation. The collectors of the static machine are connected by suitable wires 27 and 28 with two discharge-rods 29 and 30, arranged within the incubator. It will be apparent that when the static machine is set in motion and the rods 29 and 30 are suitably adjusted electrical discharges will occur from adjacent points of the two rods, such discharges acting upon the air contained within the chamber to produce ozone therein. I have found that this production of an abundance of ozone in the atmosphere within the incubator-chamber is productive of many beneficial effects. This allotropic form of oxygen while stimulating physical growth and development in the infants exercises a soothing effect and tends to induce healthful sleep. In addition it is an active oxidizing and germicidal agent and serves to sterilize the atmosphere, rendering innocuous such particles of organic matter or other deleterious substances as may find their way into the incubation-chamber with the atmospheric air.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In an infant-incubator, the combination with an incubation-chamber, having an air-inlet, of means for purifying the air within the casing comprising a static electrical machine, and disconnected conductors arranged within the casing, in operative association with said machine, and means for insuring circulation of the purified air comprising a vacuum-tank communicating with the incubation-chamber, and a pump for exhausting air from said chamber.

2. In an infant-incubator, the combination with an incubation-chamber having two air-inlets, a heater arranged adjacent one of said air-inlets, means for purifying the air, comprising a static electrical machine having its disconnected conductors arranged in the chamber between the two air-inlets, means for independently regulating the capacities of the two inlets, and means for exhausting air from the interior of the chamber.

3. In an infant-incubator, the combination with an incubation-chamber having two air-inlets, a heater arranged adjacent one air-inlet, means for independently regulating the capacities of the two inlets, and means for exhausting air from the interior of the chamber.

4. In an infant-incubator, the combination with an incubation-chamber, having an air-inlet, of a vacuum-tank communicating with the chamber, and a pump for exhausting air from said tank.

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

GEORGE H. HOW.

In presence of—
GEORGE T. MAY, Jr.,
MARY F. ALLEN.