

No. 842,899.

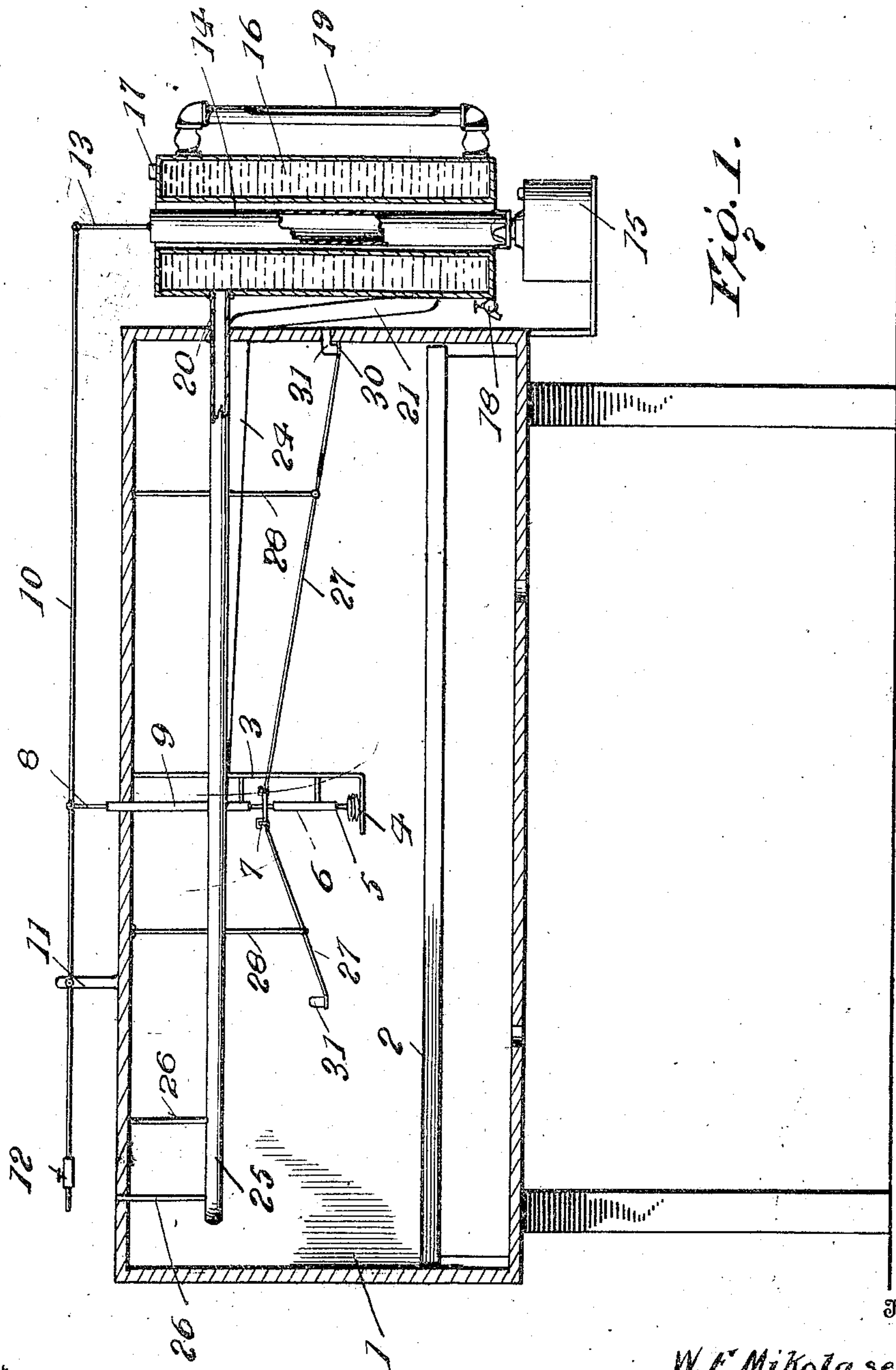
PATENTED FEB. 5, 1907.

W. F. MIKOLASEK.

INCUBATOR.

APPLICATION FILED MAY 19, 1906.

2 SHEETS—SHEET 1.



Inventor

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Witnesses

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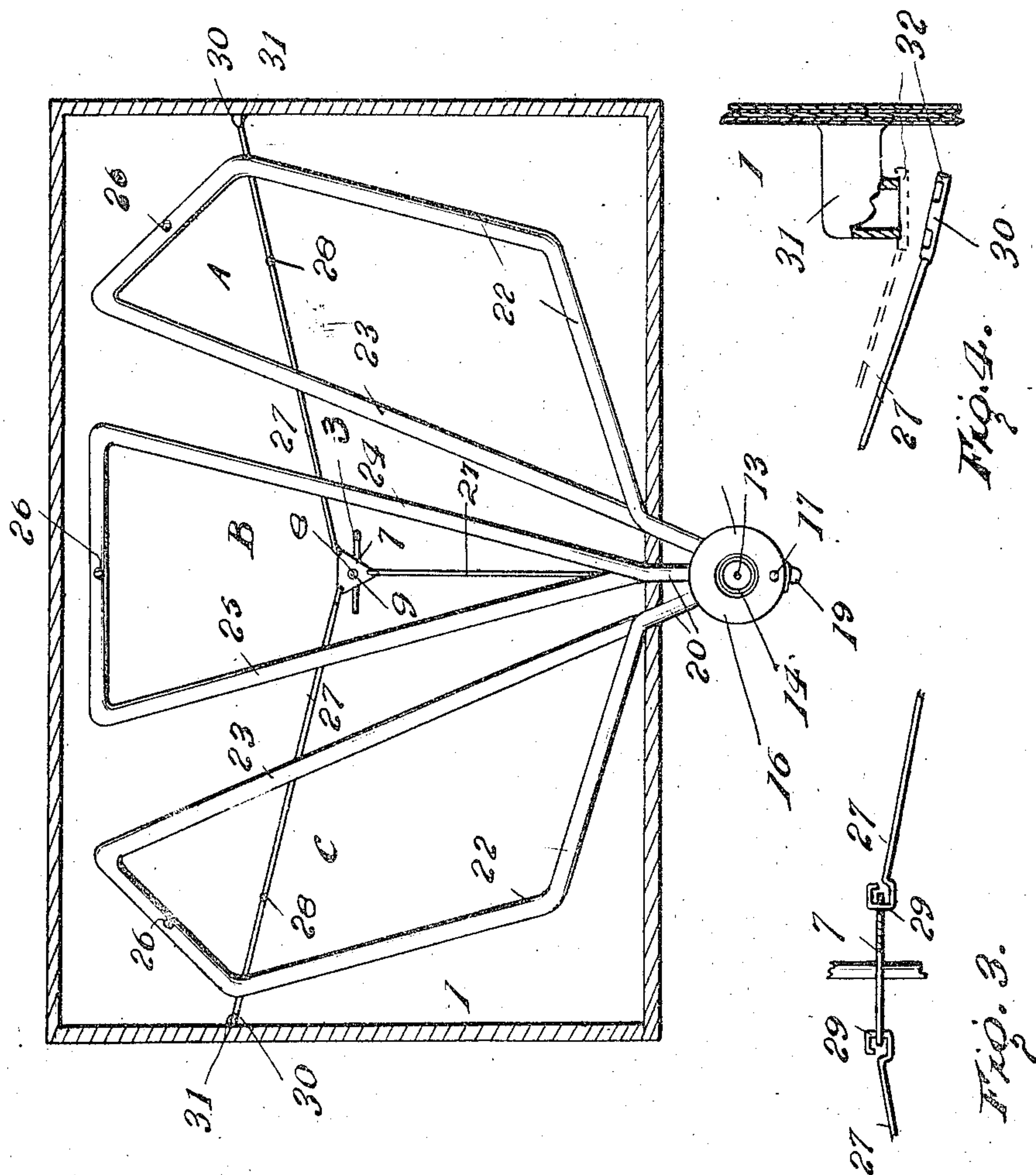


FIG. 2.

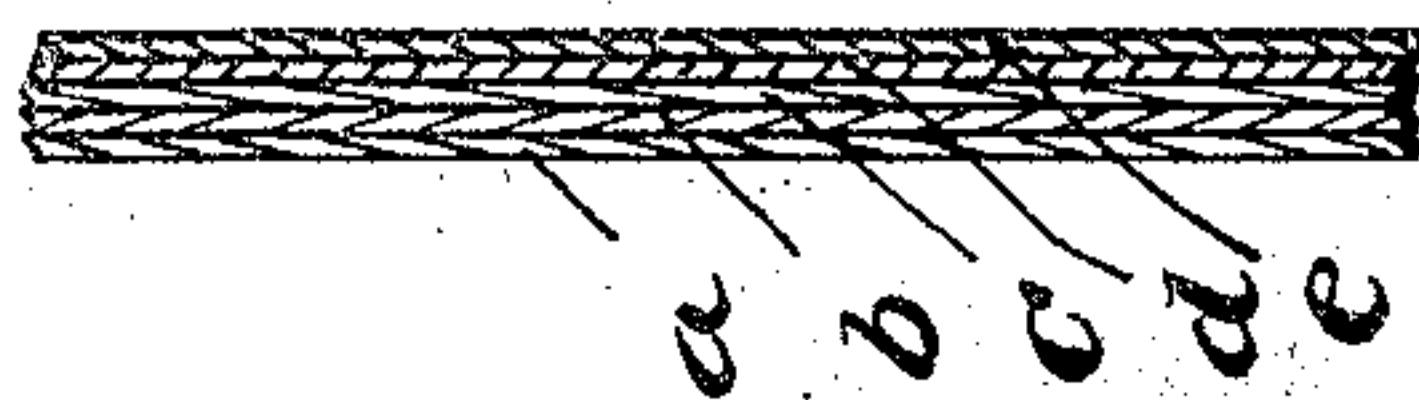


FIG. 3.

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UNITED STATES PATENT OFFICE.

WENCESLAUS F. MIKOLASEK, OF VODNANY, SOUTH DAKOTA.

INCUBATOR

No. 842,899.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed May 19, 1906. Serial No. 317,658.

To all whom it may concern:

Be it known that I, WENCESLAUS F. MIKOLASEK, a citizen of the United States, residing at Vodnany, in the county of Bonhomme and State of South Dakota, have invented certain new and useful Improvements in Incubators, of which the following is a specification.

My invention contemplates certain new and useful improvements in incubators; and the object of the invention is to provide an apparatus of this character in which the proper temperature may be automatically maintained by the combination of devices adapted to control the temperature of water circulating in an advantageous manner within the incubator, and also designed to control air-vents to admit fresh air into the incubator whenever necessary.

The construction of the walls of my improved incubator is such as to preclude all air and moisture except as admitted through the proper channels, and the arrangement of automatic controlling devices is such that the lamp or other heating device for the water is first automatically regulated if the predetermined temperature is exceeded, and then if a diminution in the supply of heat is not sufficient to cool the incubator to the proper degree air-vent-controlling devices are brought into play automatically to admit cool outside air into the incubator-casing.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of my improved incubator, parts being shown in side elevation and other parts broken away. Fig. 2 is a horizontal sectional view through the casing, the interior and exterior parts being shown in top plan view. Fig. 3 is a detail view of the connection between the air-vent levers and their actuating-plate. Fig. 4 is a detail view, partially in side elevation and partially in section, of the outer end of one of said levers. Fig. 5 is a sectional view of a portion of the wall of the casing, illustrating the composite character thereof.

Corresponding and like parts are referred

to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 designates the box or casing of the incubator, preferably supported in an elevated position on legs, as shown, and provided with an elevated egg-tray 2, underneath which is provided the space for the chicks. Within the center of the casing 1 and suspended from the roof thereof is a depending hanger 3, the lowermost laterally-extending arm of which supports a thermostat 4, which in the present instance is constituted by three superposed disks designed to expand when the air is heated beyond the predetermined degree. To the thermostat 4 a vertically-extending rod 5 is secured, said rod passing through a sleeve 6, held in one arm of the bracket 3, having secured to its upper end a plate 7. To the plate 7 another vertical rod 8 is secured at its lower end; and said latter rod is guided in a sleeve 9, preferably secured to and depending from the roof of the casing 1. The rod 8 projects through the roof of the casing and is secured to a lever 10, which is fulcrumed upon a post 11, and is provided on one side of its fulcrum with a longitudinally-adjustable counterbalance 12. On the other side of the fulcrum the lever 10 is connected with a downwardly-extending rod 13, attached to a tube 14, which is adapted to be moved vertically, so that its lower end may be raised or lowered with respect to the burner of a lamp or similar heater 15, supported at one side of the casing by a suitable bracket. The vertical movement of the tube 14 under the actuation of the lever 10 controls the heating of the tank or reservoir 16, it being obvious that when the tube 14 is elevated less heat will pass into the space surrounded by the reservoir 16, reducing the amount of heat supplied to the reservoir. When, however, the tube 14 is lowered, the heat will be conveyed into the tube 14 and will heat the surrounding reservoir 16 by radiation. The reservoir 16 is constituted by a double-wall drum surrounding the tube 14 and provided with a water-inlet 17 at its top and a water-outlet 18 at its bottom. Near its upper end the reservoir 16 is provided with outlets 20, which, as shown, are three in number in the present instance, and said

reservoir is also provided underneath the outlets 20 with the same number of inlets 21. The outlets 20, as best shown in Fig. 2, lead, respectively, to three circulating coils A, B, and C, arranged near the roof of the casing. The coils A and C are alike in shape and are provided with outwardly, backwardly, and inwardly extending outgoing portions 22 and substantially straight return portions 23, leading to the inlets 21, respectively. The intermediate coil B is, as shown, provided with straight outgoing and return portions 24 and 25, respectively, joined together at their outer ends by a transversely-extending connection. Each coil A, B, and C is provided at a point near the back of the casing 1 with an opening communicating with a vertical tube 26, extending into the top of the casing. The pipes 26 pass through the top of the incubator and permit steam, which may be generated in the various coils A, B, and C, to escape from said coils to the atmosphere, obviating likelihood of damage to the latter by reason of excessive pressure of steam generated therein. The height of the water in the reservoir 16 may be determined by the gage 19, having a suitable glass. As the water is heated it will be circulated out through the outlets 20 into the coils A, B, and C and back again through the inlets 21 in the reservoir, a continuous circulation being thereby maintained.

27 designates three levers, which diverge from the plate 7, one of said levers extending forwardly to a point about the middle of the front of the casing 1, while the other two levers extend laterally and slightly in a rearward direction to points in the sides of the casing about two-thirds of the distance from the front thereof. Each lever 27 is pivotally suspended from a depending post 28 intermediate of its ends, and each lever is provided at its inner end with a hook 29, having a loose connection with the plate 7, and is provided at its other end with a thimble-valve 30, designed to extend into the air-vent tube 31 to close the same. A ring 32, secured to the thimble 30, is spaced slightly therefrom, the space being designed to receive the end of the air-vent tube 31, and the ring 32 being designed to expand upon the outside of the said tube, so as to effectually preclude outside air from gaining access into the casing so long as the thimble-valve 30 is seated. The loose connection between the hooks 29 and the plate 7 permits the latter to have a slight initial movement independent of the levers 27, as is manifest.

In the practical operation of the apparatus the thermostat 4 will at a predetermined degree of temperature expand and raise the rod 5 and plate 7, which will at the same time raise the rod 8 and rock the lever 10 to operate the heat-regulating device, which

may be of any conventional form, and cause a diminution of the heat. If the initial operation of the regulating device is not sufficient to cause a drop in the thermostat, the air-vents are brought into play by the continued upward movement of the plate 7, which will finally bring up against the upper side of the hooks 29 and cause the levers 27 to also rock. This will result in lifting the valves 30 away from the air-vent pipes 31 and allow fresh air to flow into the casing 1.

In the preferred construction of my improved incubator the walls thereof are constructed of five layers. Behind the outside board *a* is arranged paper or similar material *b*. Back of this is a layer of wool *c*, then another layer of paper *d*, and finally the boards *e*. I have found that a wall of this character will effectually preclude the passage of heat or air therethrough.

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

1. In combination, an incubator embodying an incubating-compartment, means for heating said compartment, an initially-operable regulating mechanism for the heating means, and an auxiliary or emergency means for controlling the heating of the incubating-compartment and operable at a predetermined time subsequent to the actuation of the initially-operating regulating mechanism.

2. In combination, an incubator embodying an incubating-compartment, means for heating said compartment, an initially-operable regulating mechanism for the heating means, an auxiliary or emergency means for controlling the heating of the incubating-compartment and operable at a predetermined time subsequent to the actuation of the initially-operating regulating mechanism, and means connecting the said auxiliary or emergency means for actuation by the first-mentioned regulating mechanism.

3. In combination, an incubator embodying an incubating-compartment, a regulator, thermostat means in the incubating-compartment connected with the regulator for operation thereof, a plate connected with the thermostat means aforesaid, air-vents for the incubating-compartment, valves for opening and closing said vents, and levers connected with the plate and the valves of the air-vents and operable after the initial operation of the regulator as specified.

4. In combination, an incubator embodying an incubating-compartment, a heater therefor, a thermostat in the incubating-compartment, a regulator for the heater including a rod connected with the thermostat, a plate attached to said rod, air-vents for the incubating-chamber, valves for said vents, levers pivoted between the ends thereof and each connected at one end with a valve

of one of the air-vents, the opposite ends of
the levers having a loose connection with the
plate attached to the rod aforesaid, whereby
the regulator is initially operable to control
5 the heating of the incubating-compartment
and whereby the valves of the air-vents will
be operated subsequent to the regulator.

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

WENCESLAUS F. MIKOLASEK. [L.S.]

Witnesses:

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