

(No Model.)

M. E. LINDEMUTH.
INCUBATOR.

No. 549,647.

Patented Nov. 12, 1895.

Fig. 1

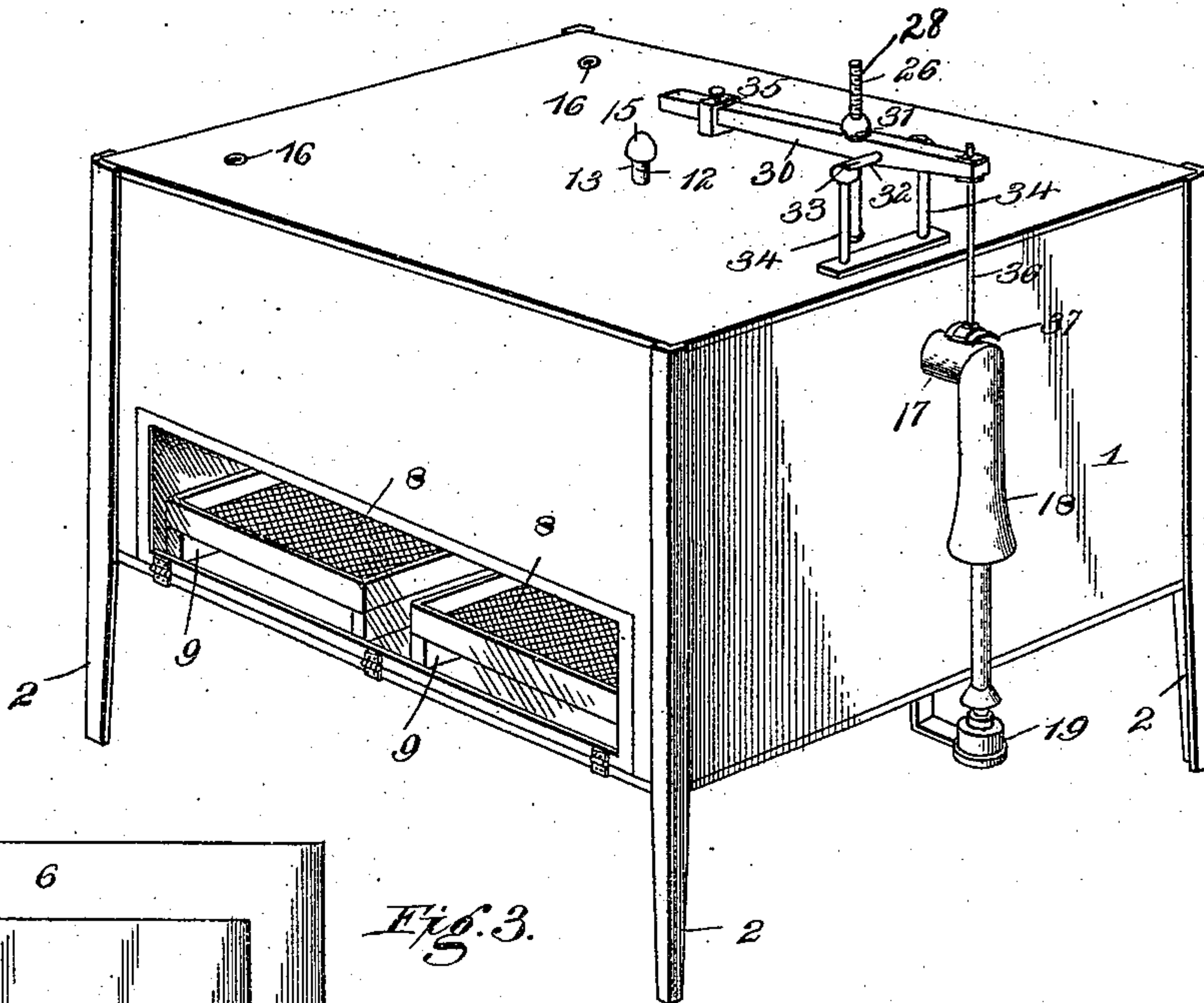


Fig. 3.

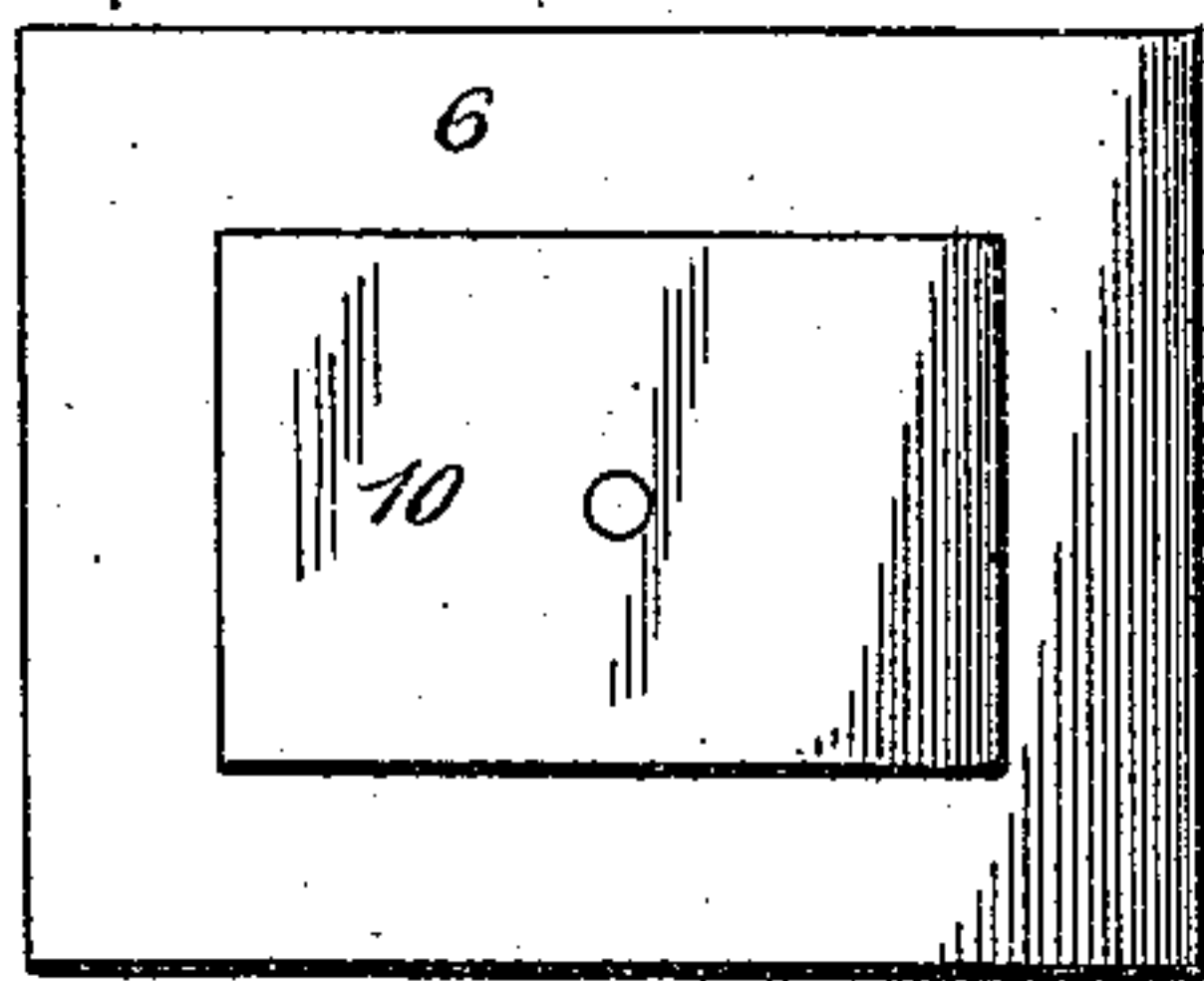
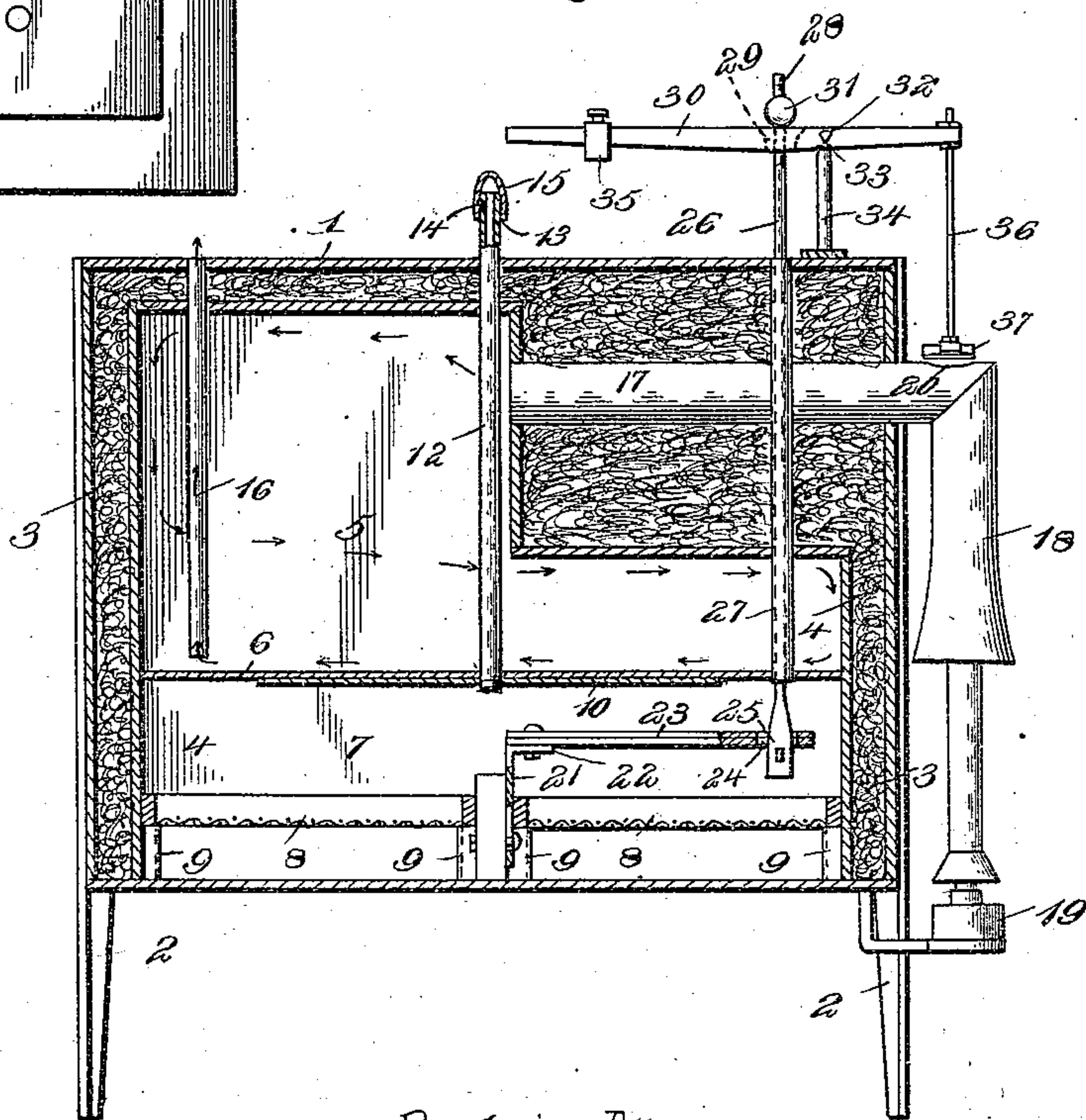


Fig. 2.



Inventor

Witnesses

John C. Shaw.
S. P. McLaughlin.

By Two Attorneys.

Martin E. Lindemuth,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

MARTIN E. LINDEMUTH, OF ELIZABETHTOWN, PENNSYLVANIA.

INCUBATOR.

SPECIFICATION forming part of Letters Patent No. 549,647, dated November 12, 1895.

Application filed October 26, 1894. Serial No. 527,058. (No model.)

To all whom it may concern:

Be it known that I, MARTIN E. LINDEMUTH, a citizen of the United States, residing at Elizabethtown, in the county of Lancaster and State of Pennsylvania, have invented a new and useful Incubator, of which the following is a specification.

This invention relates to incubators; and it has for its object to effect certain improvements in the construction of incubators and the heat-controlling devices therefor, whereby a uniform temperature may be maintained in the egg-chamber, so that all the eggs will be heated alike.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a perspective view of an incubator equipped with the herein-described improvements. Fig. 2 is a central vertical longitudinal sectional view of the same. Fig. 3 is a plan view of the bottom radiator-plate and the auxiliary distributing-plate arranged thereunder.

Referring to the accompanying drawings, 1 designates a substantially rectangular incubator-casing supported at its corners on the usual supporting-legs 2, and the said casing is provided with the usual double walls 3, inclosing suitable non-conducting material 4, to provide the usual non-conducting casing.

In the present invention the casing 1 of the incubator is provided therein with an L-shaped hot-air chamber 5, the horizontal portion of which extends the entire length and width of the casing, and the vertical enlarged portion of which extends to the top of the casing and is disposed at one side of the center of the same. The hot-air chamber 5 is inclosed by the metallic bottom radiating-plate 6, that registers within the interior of the casing and partitions off the hot-air chamber 5 and the lower egg-chamber 7, formed in the lower part of the casing and adapted to accommodate therein the usual egg-trays 8, that are supported to slide on the separate pairs of cleats 9 in the usual way.

The metallic bottom radiating-plate 6 is ar-

anged horizontally within the incubator casing, and preferably consists of a sheet of zinc to provide for quickly radiating the heat throughout the egg-chamber 7. The said horizontal bottom radiating-plate 6 for the hot-air chamber has attached centrally to the under side thereof a smaller heat-distributing zinc-plate 10, that is unsecured at its edges to the bottom-plate 6, and prevents the egg-chamber 7 from becoming overheated in the center. The smaller heat-distributing plate 10 acts as an auxiliary radiator in connection with the plate 6, and is preferably supported in position at its center on the inner end of the vertical vent-pipe 12, communicating with the interior of the egg-chamber 7, and extending vertically through the hot-air chamber 5 and through the top of the casing 1. The vent-pipe 12 is provided with an upper threaded end 13, having a vent-hole 14, and adapted to receive thereon the screw-cap 15, which provides means for covering and uncovering said hole to allow moist air to be relieved from the egg-chamber, so that the same can be kept perfectly dry.

Hot-air escape-pipes 16 are arranged vertically within the hot-air chamber 5 at the end opposite the horizontal extension thereof, and extend at their lower open ends to a point in close proximity to the plate 6 to receive the hot air at the bottom of the chamber 5, and said pipes extend through the top of the casing to carry the hot air outside thereof. The hot-air chamber 5 is supplied with hot air through the hot-air flue 17, that extends into the casing 1 above the reduced horizontal portion of the hot-air chamber, and opens into the enlarged vertical portion of the hot-air chamber at one side thereof and at about the vertical center of the hot-air chamber. The outer end of the flue 17 connects with the vertically-disposed heater-hood 18, arranged outside of the casing 1 over the heating-lamp 19, and said hood 18 is provided at its upper end with a valve-opening 20, which will be more particularly referred to.

The hot air entering the chamber 5 from the flue 17 fills such chamber and takes a circulation therein throughout every portion thereof, as indicated by the arrows, and is compelled to circulate directly over the bottom radiating-plate 6 before it can escape out

of the pipes 16, thereby heating up the plate 6, which radiates the heat into the chamber 7. Owing to the fact that the hot air comes into the chamber 5 at the center thereof, the central portion of the plate 6 becomes hotter than the other portion, but the auxiliary plate 10 responds to the increased heat of the central portion of the plate 6 and expands away from such plate, thereby allowing the heated air to circulate between the two plates out to the sides and ends of the egg-chamber 7 to maintain the same at an even temperature.

An L-shaped vertically-adjustable bracket-plate 21 is mounted within the egg-chamber 7, and has bolted to the upper horizontal arm 22 thereof one end of a thermostatic bar 23, having an opposite slotted end 24, loosely receiving the lower end 25 of an adjustable connecting-rod 26. The adjustable connecting-rod 26 works within a vertical guide-tube 27, and is provided with an upper threaded end 28, that passes through an opening 29 in the regulator-beam 30. The threaded end 28 of the rod 26 is engaged above the beam 30 by means of the adjusting ball or nut 31, which assists to maintain the parts of the regulating device at the proper degree of sensitivity.

The regulator-beam 30 works above the top of the incubator-casing and is provided near one end or at a point intermediate of both ends with the oppositely-disposed pivot-spindles 32, having knife-edge extremities 33, mounted in the upper ends of the parallel bearing-arms 34, arising from the top of the casing. At one side of the pivotal support the beam 30 has mounted thereon an adjustable weight 35, and to one extremity at the opposite side of its pivotal support the said beam has connected thereto the upper end of the valve-rod 36, the lower end of which is detachably connected to the elongated curved valve-plate 37, that is adapted to fit over the upper end of the hood 18 to cover and uncover the valve-opening 20 thereof. If the

temperature rises in the egg-chamber 7 beyond the desired degree the thermostatic bar 23 will expand, and through the medium of the connections described will lift up the valve-plate 37 to allow hot air to escape out through the valve-opening 20 until the temperature again reduces to the normal, when the regulating device described will cause the valve-plate 37 to close and again allow all of the heat to pass into the chamber 5.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

In an incubator, the combination of the casing inclosing an upper hot-air and a lower egg-chamber, a horizontal metallic bottom radiating plate arranged within the casing and partitioning said chambers from each other, and an auxiliary movable heat distributing plate smaller than the bottom radiating plate and normally resting flat against the under side of said radiating plate, said smaller auxiliary heat distributing plate being secured at its center to the under side of the bottom radiating plate and unattached at its edges thereto, whereby the distributing plate will expand away from the radiating plate to form a hot air circulating space between the two plates when the central portion of the radiating plate becomes overheated so that the heated air between the plates will circulate out to the sides and ends of the egg-chamber, substantially as set forth.

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

MARTIN E. LINDEMUTH.

Witnesses:

JOHN C. REDSECKER,

CHAS. S. GOOD.