

No. 661,007.

Patented Oct. 30, 1900.

C. S. WILSON.  
INCUBATOR.

(Application filed Oct. 5, 1899.)

(No Model.)

FIG. I.

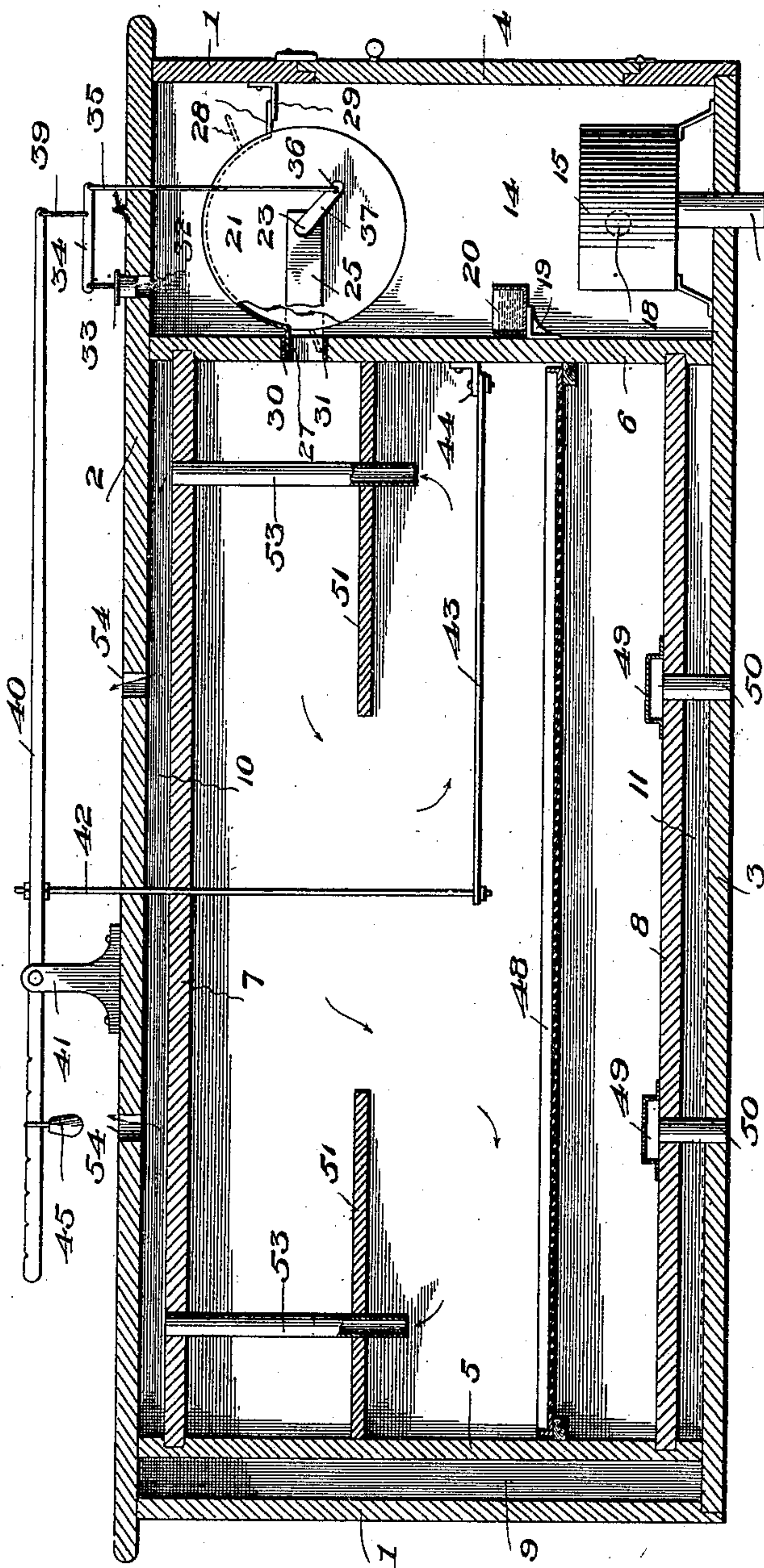


FIG. III.

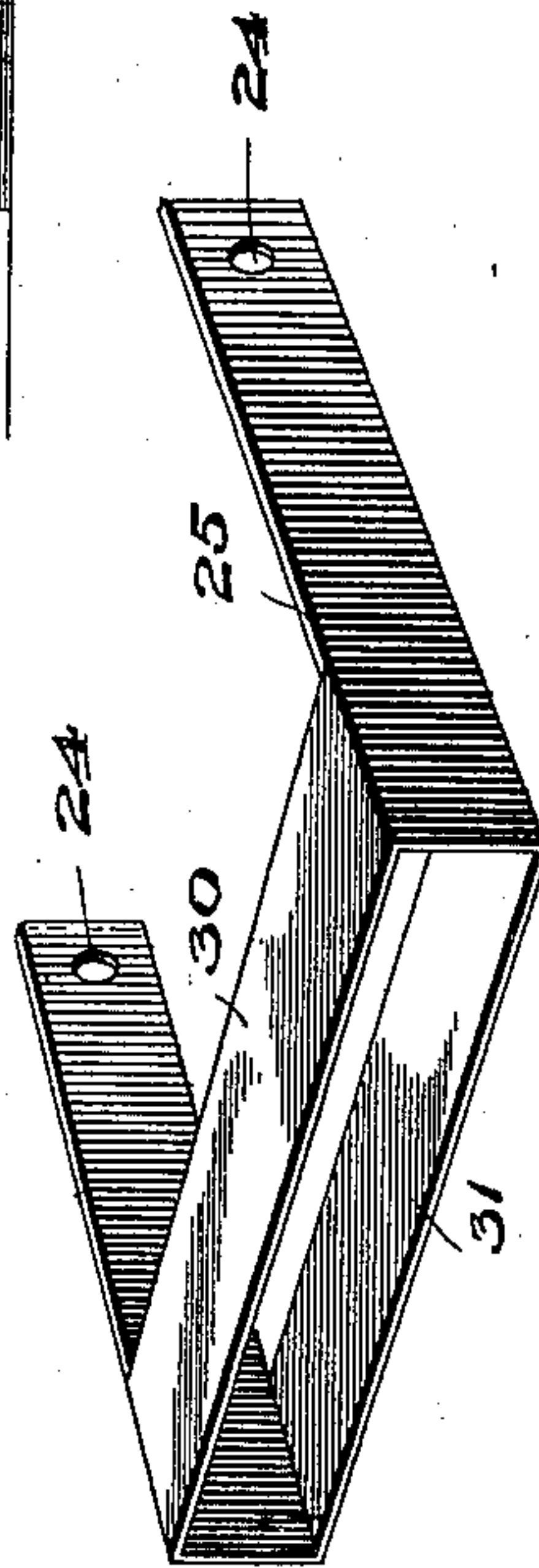
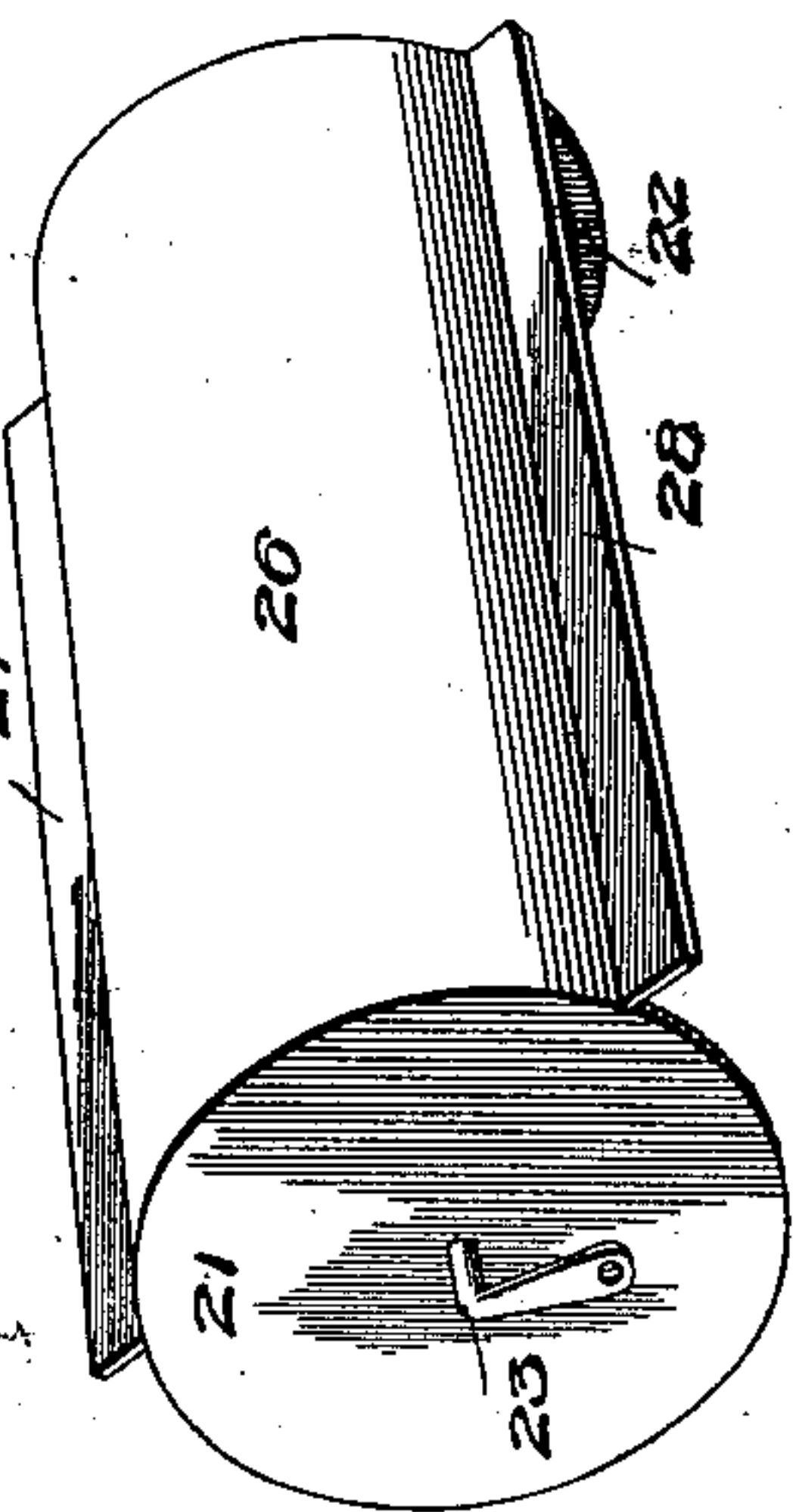


FIG. II.



Witnesses

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# UNITED STATES PATENT OFFICE.

CURTIS S. WILSON, OF FOREST, OHIO.

## INCUBATOR.

SPECIFICATION forming part of Letters Patent No. 661,007, dated October 30, 1900.

Application filed October 5, 1899. Serial No. 732,603. (No model.)

*To all whom it may concern:*

Be it known that I, CURTIS S. WILSON, of Forest, in the county of Hardin, State of Ohio, have invented certain new and useful Improvements in Incubators, of which the following is a complete specification, reference being had to the accompanying drawings.

The object of my invention is to produce improvements in incubators that are simple, economical and durable in construction, and efficient in operation.

In the accompanying drawings, Figure I is a central longitudinal vertical section, partially in elevation, of my invention. Fig. II is a perspective view of the heat-regulator detached. Fig. III is a similar view of the frame for the heat-regulator, detached.

Referring to the numerals on the drawings, 1 indicates the end walls, 2 the top, and 3 the bottom, of the outside case or shell of my device, one of the end walls being provided with a close-fitting door 4. Within the outside case I provide an inner case comprising end walls 5 and 6, a top 7, and bottom 8. Between the adjacent end walls 1 and 5, the tops 2 and 7, and bottoms 3 and 8 of the outer and inner cases are air-spaces 9, 10, and 11, respectively. Side walls may be constructed in any ordinary manner, separated by air-spaces—as, for example, like end walls 1 and 5. The end walls 1 and 6 are separated by considerable distances sufficient to define a heating-chamber 14 of suitable dimensions. In the bottom of this chamber I provide a heating-compartment 15, consisting, preferably, of a closed metallic case or drum which communicates, as through a dependent pipe 16, with a source of heat 17, located on the outside of the case. An outlet for the products of combustion which pass into the heater 15 through the pipe 16 leads from the interior of the heater through the side or outer wall of the case. The outlet-pipe is indicated by dotted lines 18.

Through the use of the heater described the products of combustion are excluded from the air within the incubator-case, and only their heat is utilized for raising the temperature within the incubator to the required degree.

Within the heating-chamber 14 is provided, as upon a shelf 19, a moist-pan 20.

Above the heater 15 within the chamber 14 I provide a heat-regulator, which consists of an oscillatory member preferably comprising end disks 21 and 22, mounted upon an axis 23, secured in bearings 24 in a frame 25. (See Fig. III.) The disks 21 and 22 are united by a curved wall 26, constituting a portion of a cylinder, which terminates at its opposite edges in flanges 27 and 28. The flange 28 impinges against a shelf 29 on the wall 1 of the chamber 14 and the flange 27 works between the top and bottom plates 30 and 31, respectively, which define the throat of the frame 25 and afford communication through the end wall 6 with the interior of the inner case. When the flange 28 impinges against the shelf 29, the flange 27 impinges against the top plate 30 of the frame 25. The heat-regulator extends longitudinally entirely across the chamber 14, and when the flanges 27 and 28 are in the position just described the regulator compels the heat from the chamber 14 to pass to the interior of the inner case. If, on the other hand, the flange 27 be depressed against the bottom plate 31 of the frame 25, a free passage for heated air is afforded around the regulator, above which it may find egress to the outer air, as through an aperture 32 in the top 2 of the outer case. This aperture is provided with a cap or damper 33, pendent from one end of a lever 34, to the opposite end of which is loosely secured a rod 35, which passing through an aperture provided for it in the top 2 is loosely connected, as indicated at 36, with a crank 37 upon the shaft 23. At a point near to the rod 35 the lever 34 is united, as by a connection 39, with a balancing-lever 40, that is fulcrumed, as indicated at 41, upon the top 2 of the outer case. The lever 40 is connected, as by a rod 42, that passes through apertures provided for it in the tops 2 and 7 of the inner and outer case, respectively, with a thermostat 43, secured, as indicated at 44, to a wall—for instance, the wall 6 of the inner case. Upon the side opposite the rod 42 the lever 40 is balanced, as by a pea 45.

In practice the pea 45 is adjusted so that the lever 40 is balanced to that position in which the flange 28 impinges against the shelf 29, the cap 33 at the same time covering the aperture 32. If now a sufficient degree of heat acts upon the thermostat 43, which should



be of that class which bend under changes of temperature, and the rod 42 be lifted, the lever 40 will rise, and by reason of the movement of its connection with the lever 34 will first lift the flange 28 of the regulator from the shelf 29 and afterward the cap 33 from the aperture 32; but when the flange 28 is lifted from the shelf 29 the flange 27 closes against the bottom plate 31 of the frame 25.

In consequence of this action and the subsequent raising of the cap 33 the danger of admission of drafts to the interior of the incubator through the regulation of the heat is avoided.

48 indicates the egg-tray, beneath which, protected by suitable caps 49, air-vents 50 are provided.

Within the inner case are also provided oppositely-extending deflecting-plates 51, which project from the opposite ends of the case define between them a medial opening through which the hot air supplied from the chamber 14 must pass, direction being given thereto by outlet-flues 53, which may be conveniently constructed of pipes passing through the top wall 7 of the inner case and the shelves 51, respectively. These discharge into the air-space 10, whence egress is afforded, as through apertures 54 in the top 2 of the outer case.

What I claim is—

1. The combination with an incubator provided with a heating-chamber and heater for said chamber, of a heat-regulator adapted to make and break communication between the heating-chamber and the interior of the incubator, respectively, an aperture in the case beyond the regulator, a cap for said aperture, and thermostatically-actuated means for operating the regulator and said cap in successive order, substantially as set forth.

2. The combination with an incubator provided with a heating-chamber and heater for said chamber, the chamber being provided with an aperture and a shelf upon opposite walls, the aperture communicating exclusively with the interior of the incubator, of an oscillatory regulator provided with flanges

working within the said aperture and to and from said shelf respectively, and thermostatically-actuated means for operating said regulator, substantially as set forth.

3. The combination with an incubator provided with a heating-chamber and heater for said chamber, the chamber being provided with an aperture and a shelf upon opposite walls, of an oscillatory regulator provided with flanges working within said aperture and to and from said shelf, respectively, a second aperture in the chamber beyond the regulator, a cap adapted to cover said aperture, and common thermostatically-actuated means for operating the regulator and cap, substantially as set forth.

4. The combination with an incubator provided with a heating-chamber and heater for said chamber, the chamber being provided with an aperture and a shelf upon opposite walls, of an oscillatory regulator provided with flanges working within said aperture and to and from said shelf, respectively, a second aperture in the chamber beyond the regulator, a cap adapted to cover said aperture, a lever operatively connected with the regulator, and with the cap, a balancing-lever supporting the first-named lever, and a thermostat within the incubator, operatively connected with the balancing-lever, substantially as set forth.

5. The combination with an incubator-case provided with means for supplying heat to the interior thereof, of oppositely-projecting deflecting-plates below the points at which the heat enters, defining a medial opening within said case, and outlets communicating with the interior of the case below said deflecting-plates, and at points adjacent to the walls from which said plates project, substantially as set forth.

In testimony of all which I have hereunto subscribed my name.

CURTIS S. WILSON.

Witnesses:

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J. A. WALTZ.