(No Model.)

C. H. JOHNSON.

INCUBATOR.

No. 596,597. Patented Jan. 4, 1898.

Fig. 1.

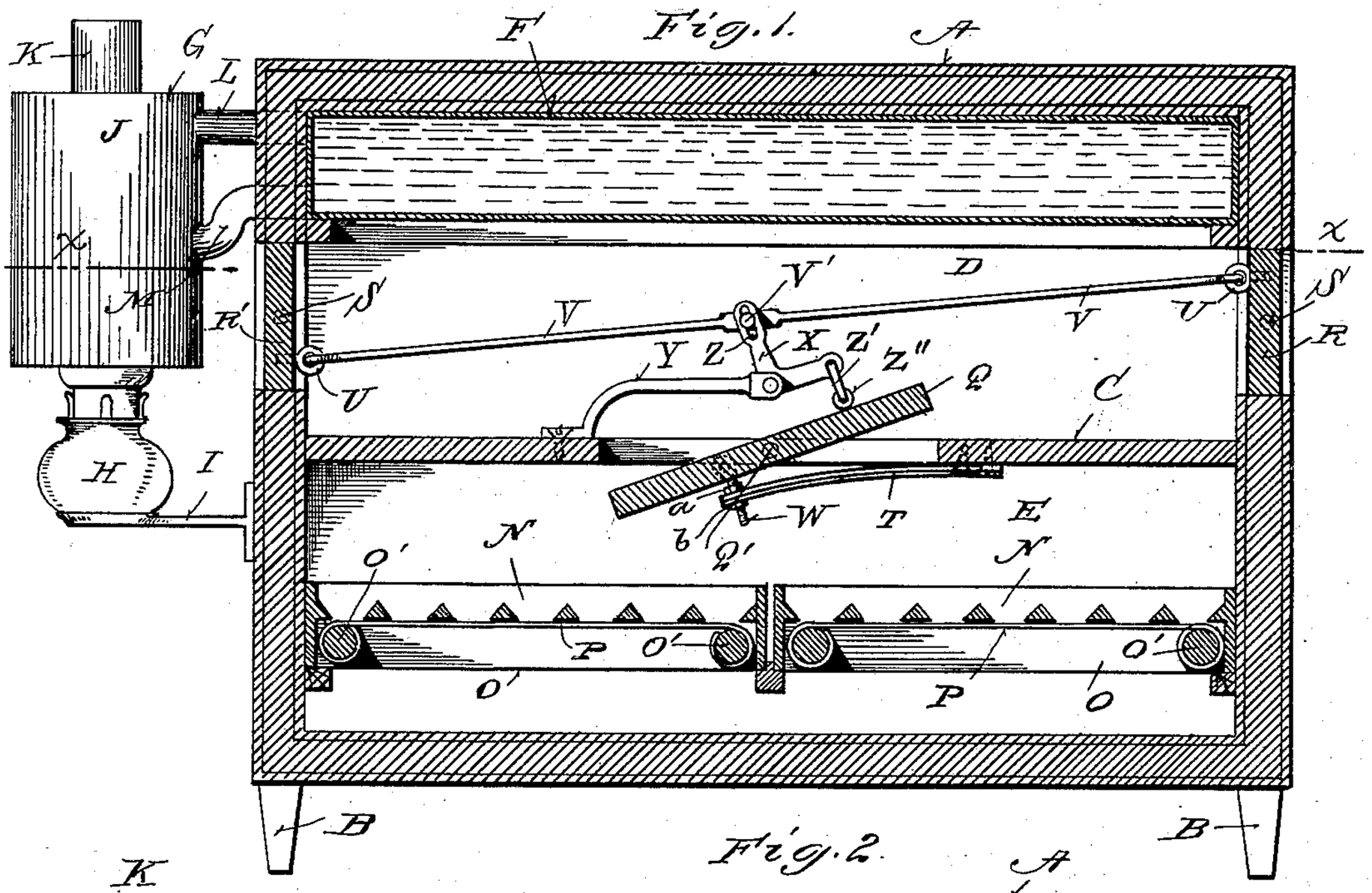


Fig. 2.

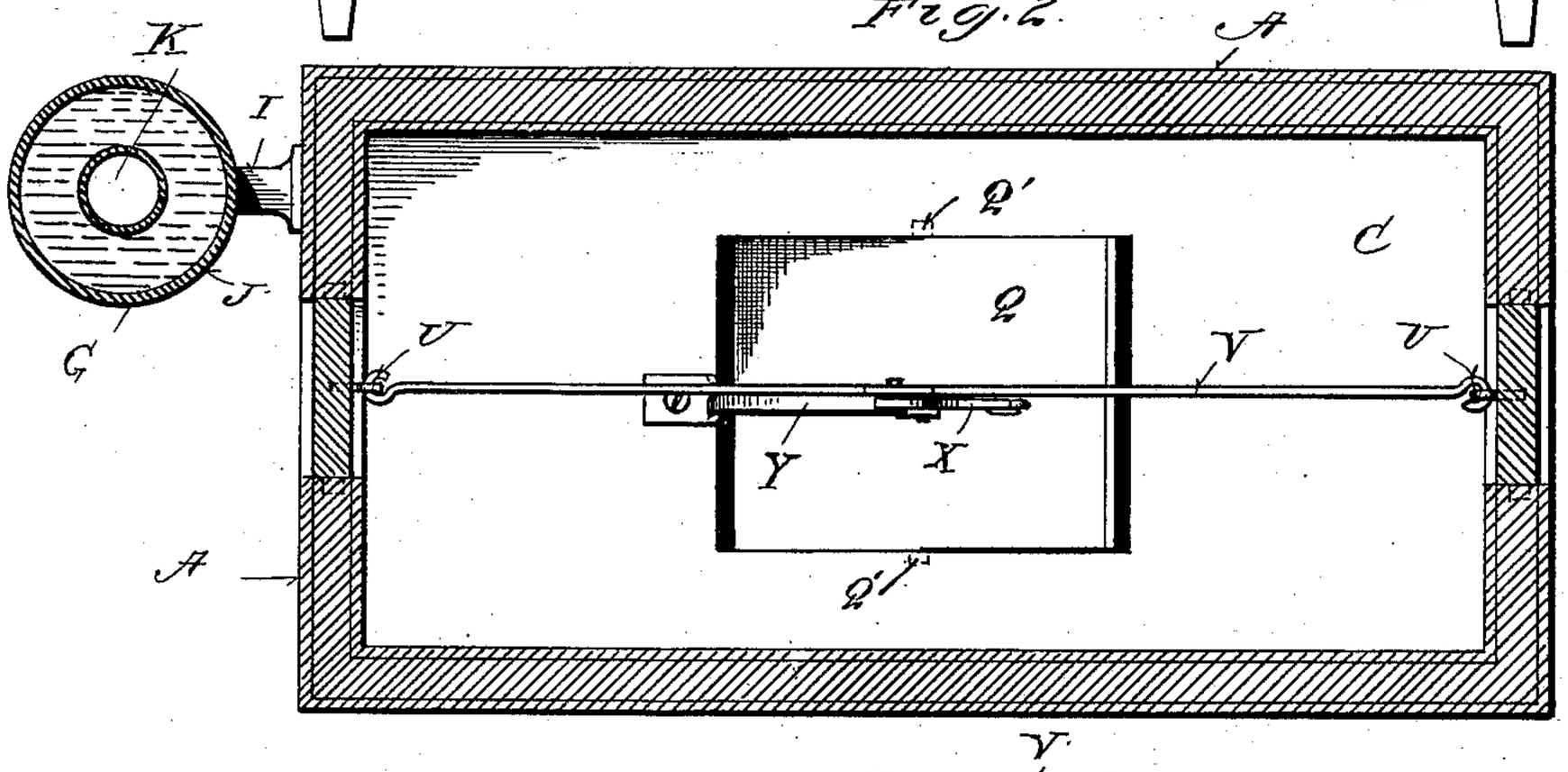
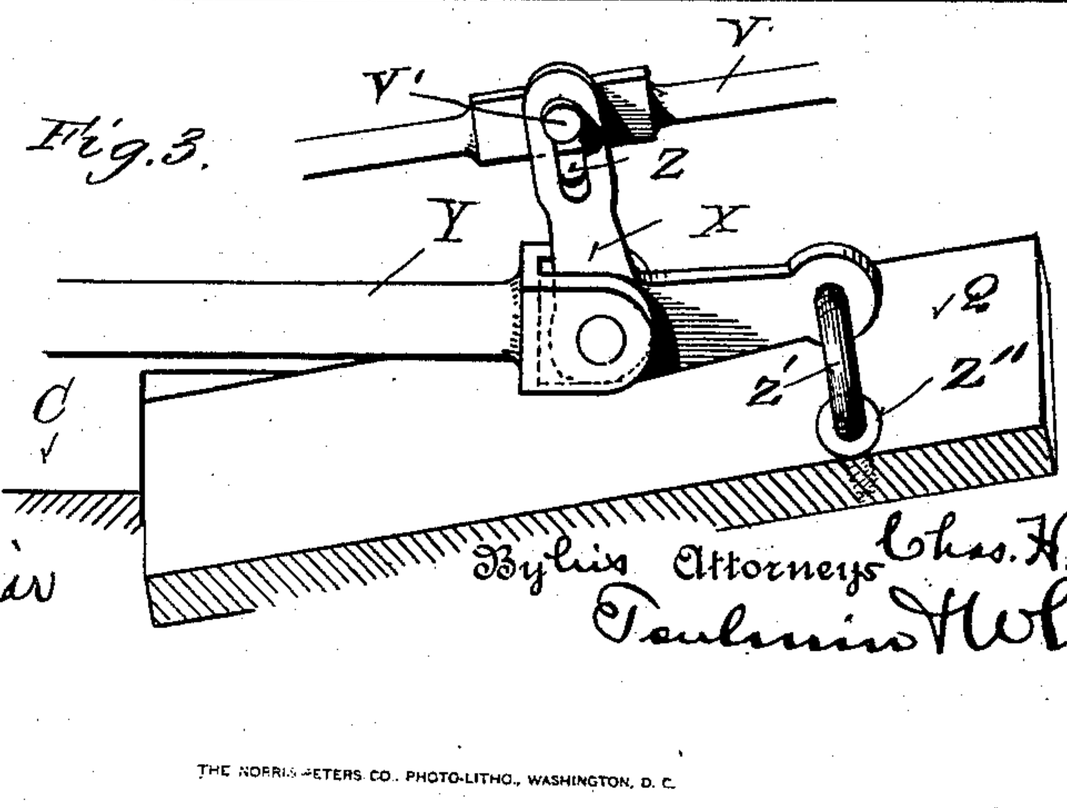


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES H. JOHNSON, OF FINDLAY, OHIO.

INCUBATOR.

SPECIFICATION forming part of Letters Patent No. 596,597, dated January 4, 1898.

Application filed March 26, 1897. Serial No. 629,330. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. JOHNSON, a citizen of the United States, residing at Findlay, in the county of Hancock and State of Ohio, have invented certain new and useful Improvements in Incubators, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention has reference generally to incubators, but more particularly to the ventilating mechanism used in connection with devices of this kind.

The object of the invention is to construct and arrange the ventilating devices in such manner that when too high a temperature exists within the incubator the latter may be quickly and automatically cooled without chilling the eggs therein. To attain this object, I divide the incubator-casing into two chambers, placing in one a water-receptacle, the heated water therein being adapted to heat the incubator to the desired temperature, and in the other chamber the usual egg-trays. Then by arranging a damper in the partition between the two chambers and one or more dampers in the heating-chamber, connecting the same by suitable connecting devices, I provide means for cooling the upper chamber and indirectly lowering the temperature of the lower chamber without having a cold draft of any sort blow upon and chill the eggs.

With this object in view my invention consists in the peculiar formation of an incubator and in the novel construction and arrangement of its various parts, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a vertical central longitudinal section through the incubator, showing the same as in use. Fig. 2 is a section taken on line *x x*, Fig. 1; and Fig. 3 is an enlarged detail perspective view of the devices for actuating one of the dampers.

In the construction of the device the letter A represents the incubator-casing, formed, preferably, of double walls, between which is placed the usual non-conducting material to prevent the outer temperature being communicated to the interior of the casing, and B the usual legs therefor. Within the casing and approximately at the center thereof is a horizontal partition C, which divides the inclosing casing into an upper chamber D and a lower chamber E. In the upper chamber, near the top thereof, is arranged a water-tank F, the water therein being heated by means of a heating apparatus G. This latter apparatus comprises an ordinary lamp H, mounted upon a bracket I, secured to the casing, and a cylindrical water-heater J, provided with a central flue K, through which the products of combustion are adapted to pass, said water-heater communicating with the water-tank in the incubator by means of the pipes L and M, as plainly shown in Fig. 1. In the lower chamber, near the bottom thereof, are located the usual egg-trays N N, each comprising a frame O, having a series of triangular partitions therein, rollers O′, and a cloth P, preferably of wire, secured to the rollers between the latter and the triangular partitions forming a support for the eggs.

In the partition C is located a damper Q, pivotally connected, as at Q′, with the partition. In the upper chambers are dampers R R′, similar in construction to the damper Q, swingingly supported upon pivots S, and T is a thermostat, preferably in the form of an ordinary double-leaf bar, secured to the under side of the partition.

To obtain the results desired, I employ actuating devices for the three dampers mentioned, automatically operated by the thermostatic bar, which will close the partition-damper when the dampers R R′ open and which will close the latter dampers when the partition-damper opens. By this arrangement of ventilators I am enabled, when the temperature within the incubator is too high, to cool the upper chamber quickly by means of a draft passing therethrough without allowing said draft to enter the egg-chamber. When the upper chamber is cool, the temperature within the egg-chamber will be gradually lowered and the ventilating mechanism will slowly open the partition-damper, thereby equalizing the heat within both chambers and at the same time closing the dampers which communicate with the surrounding atmosphere. The means employed to attain these results are as follows:

Upon the upper portion of the damper R and upon the lower part of the damper R′ are eye-screws U, connected by means of a bar

V, which bar is provided at its center with a stud V′. At the center of the partition-damper and beneath the same is a threaded bolt W, which is connected adjustably with the free end of the thermostat by nuts *a* and *b*. The connecting-bar V and the damper Q are connected by means of a bell-crank lever X, pivoted between bifurcations upon the free end of a bracket-arm Y, secured to the partition, one arm of the lever X being slotted, as at Z, to engage the stud V′, and the other arm of said lever is connected by means of a link Z′ to an eye-screw Z″, secured to the damper Q.

It will be noticed by the arrangement and construction of the damper-operating devices thus set forth that the thermostat T acts directly upon the damper Q and that this damper operates the casing-dampers in a very simple manner, the entire mechanism requiring but few parts, which are simple in construction and which are not liable to get out of order. It is further to be noticed that an effective means is employed for regulating the temperature of the egg-chamber without in any manner chilling the eggs therein, as the surrounding atmosphere, which eventually enters the egg-chamber, is heated to a considerable extent by its passage through the upper chamber before it enters the lower chamber, thereby taking the chill off the same.

The nuts *a* and *b* permit the thermostat to be adjusted at its free end, so as to regulate the temperature to any desired degree, the adjustment of the thermostat relatively to the damper Q determining how much the dampers will be opened by the bending of the thermostat.

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

An incubator comprising the following instrumentalities: an inclosing casing provided with a central partition dividing said casing into an upper heating-chamber and lower egg-chamber, dampers R and R′, and a damper in the partition, a thermostat secured to said partition in proximity to the damper therein, having a central connection with the latter, the damper-connecting bar V, support Y, slotted bell-crank lever X engaging at one end the stud V′ upon the connecting-bar, and a link connecting the other end of the lever to the partition-damper, substantially as shown and described.

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

CHARLES H. JOHNSON.

Witnesses:
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