

No. 735,856.

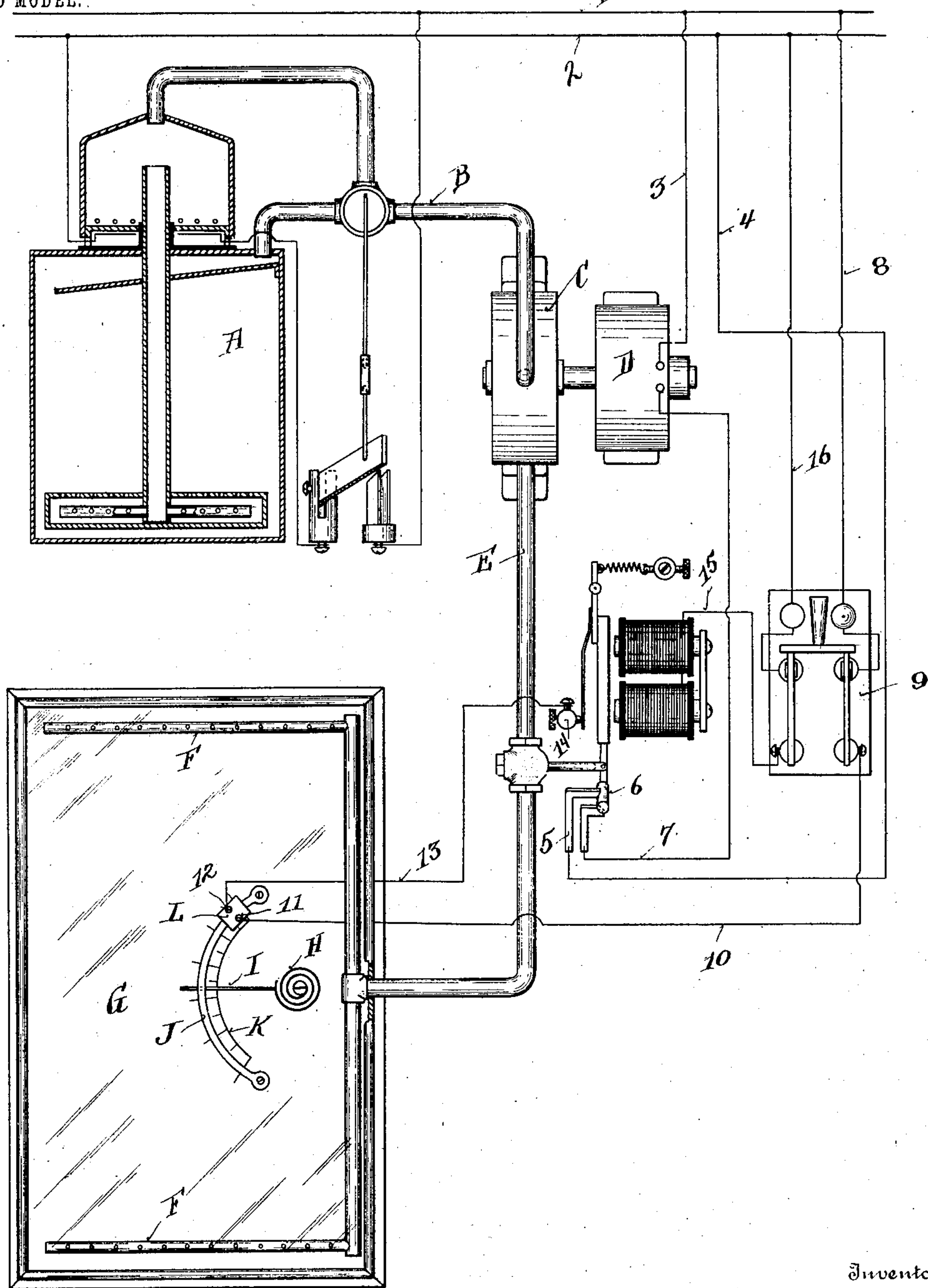
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O. E. BOGGS.

APPARATUS FOR AUTOMATICALLY CONTROLLING THE HUMIDITY  
OF ATMOSPHERE.

APPLICATION FILED JAN. 8, 1903.

NO MODEL.



Inventor

Witnesses

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# UNITED STATES PATENT OFFICE.

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APPARATUS FOR AUTOMATICALLY CONTROLLING THE HUMIDITY OF ATMOSPHERE.

SPECIFICATION forming part of Letters Patent No. 735,856, dated August 11, 1903.

Application filed January 8, 1903. Serial No. 138,192. (No model.)

*To all whom it may concern:*

Be it known that I, ODIN E. BOGGS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Apparatus for Automatically Controlling the Humidity of the Atmosphere, of which the following is a specification.

My invention relates to a device for automatically controlling the humidity of the atmosphere within a given compartment.

This invention has useful application to numerous industrial arts concerned with the treatment of various organic commodities, such as grain, tobacco, &c. Recent scientific investigations and determinations have emphasized the importance of handling such commodities under the most favorable atmospheric conditions. For instance, it has been demonstrated that the repeated moistening and drying of tobacco are very deteriorating to the aroma. With my invention a simple instrument can be placed, say, in a cigar-case and gaged to automatically maintain a predetermined degree of humidity.

The features of my invention are more fully set forth in the description of the accompanying drawing, forming a part of this specification, in which the figure represents a diagrammatic view of my invention as applied to a case.

A represents an apparatus for supplying atmospheres of varying humidity. As this apparatus comprises a separate invention by means of which atmospheres may be produced with given degrees of humidity, and as I have filed separate application therefor simultaneously herewith, I will not herein describe further details than to say that it comprises an air and a water tank apparatus for supplying moist air or air through a pipe B to a pump C. This pump is preferably driven by the motor D. E represents a pipe leading therefrom to the cigar-case G, having the perforated pipes F. The operation of the pump conveys humid air from the apparatus A through the pipes B, E, and F to the cigar-case G.

To maintain the humidity automatically, the following devices are employed: Within

the case G is a hygrometer comprising a coil H, one end of which is secured to the case and the other end is free to move. The varying atmospheric humidity imparts varying degrees of compression to this coil, causing the free end to turn relative to the center.

I represents an indicating electric-conductor needle radially fixed to the free end of the coil.

K represents a curved index in the radius of the needle travel.

J represents a curved gage-bar supported adjacent to the index and in the path of travel of the needle.

L represents an adjustable electric-conductor stop mounted on the gage-bar, which can be set thereon to any predetermined figure of the index, and it will limit the travel of the needle to such point. Various other arrangements of stop and means for mounting and adjusting the stop in the path of needle travel may be devised which will answer as well as the particular form herein illustrated. I do not claim this specific stop construction.

Preferably my device is electrically operated. The following is a plan of the circuit: 1 2 represent the main supply-wires. The motor-circuit is as follows: branch wire 3 from the motor D to wire 1, branch wire 4 from wire 2 to the switch 5, through the end of the armature 6, through wire 7 to the other electrode of the motor. The following is the magnet-operating circuit: 8 represents a branch wire from wire 1 to switch 9, thence to wire 10 to a post 11 on the stop L. 12 represents the second post on said stop. 13 represents a wire connecting the said post with a contact-post 14, which contact-post 14 is connected to the magnet-coil. 15 represents a wire connecting the other end of the magnet-coil to the switch 9, and 16 represents the return-wire connecting the switch 9 with the supply-wire 2. It will be understood that the switch 9 is an ordinary magnet-current-reducing instrument. As the invention is shown the motor-circuit is ordinarily closed and the pump working at all times except when the humidity within the case is sufficient to bring the needle into contact with the stop, thus closing the magnet-circuit and breaking the



motor-circuit. As soon as the atmosphere dries beyond the predetermined degree of humidity the needle recedes, releasing the magnet-circuit and again establishing the motor-circuit, starting the pump, hence again supplying moist air to the case. This arrangement is best adapted for the treatment of tobacco; but it can be used for treating other commodities, if desired.

By the use of my invention the atmosphere within a given compartment may be automatically maintained approximately at any predetermined degree of humidity; also, the instrument can be readily adjusted to any varying degree required by the nature of the commodity under treatment.

The device is simple, entirely efficient, and can be applied either in a warehouse, factory, or room or in the display-case or storage-vault of the retailer. The instrument itself being simple and ornamental and the pump and working parts located at any convenient station, one set of working apparatus may be connected up with the instruments of a number of cases, so as to automatically keep all of the goods under the same unvarying atmospheric condition of humidity.

Of course the given compartment may be a case for handling goods or a room or a building for human habitation, if it be desirable

to apply this invention as a system of ventilation or heating.

Obviously this invention is also of great utility as a greenhouse appliance for growing plants. Other useful applications may be found from time to time as this new field is developed.

Having described my invention, I claim—

In a device for automatically controlling the humidity of the atmosphere, a compartment, a power-driven means for supplying humid atmosphere thereto, a coil in the compartment sensible to the varying humidities, an electric-conductor needle attached to said coil, an electric-conductor stop adjustable in the path of needle travel, and a partial electric circuit for controlling said power-driven means, having terminals adapted to be closed by contact of said needle and stops, whereby the varying humidities within the compartment make and break contact thereby automatically controlling the supply of humid atmosphere, substantially as specified.

In testimony whereof I have hereunto set my hand.

ODIN E. BOGGS.

Witnesses:

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