

No. 892,916.

PATENTED JULY 7, 1908.

F. A. TRAVER.  
HUMIDOR.

APPLICATION FILED OCT. 24, 1907.

Fig. 2.

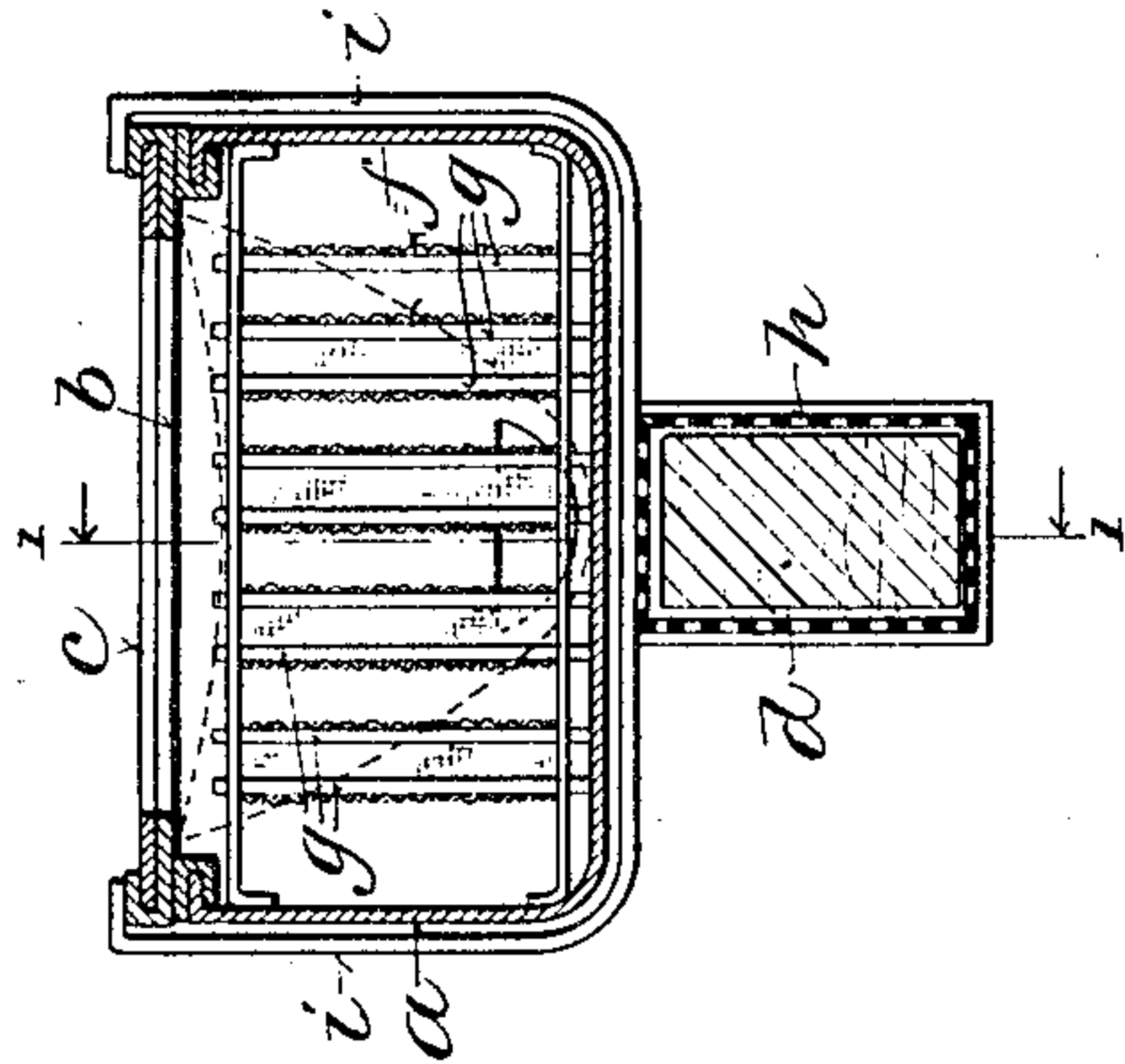


Fig. 4.

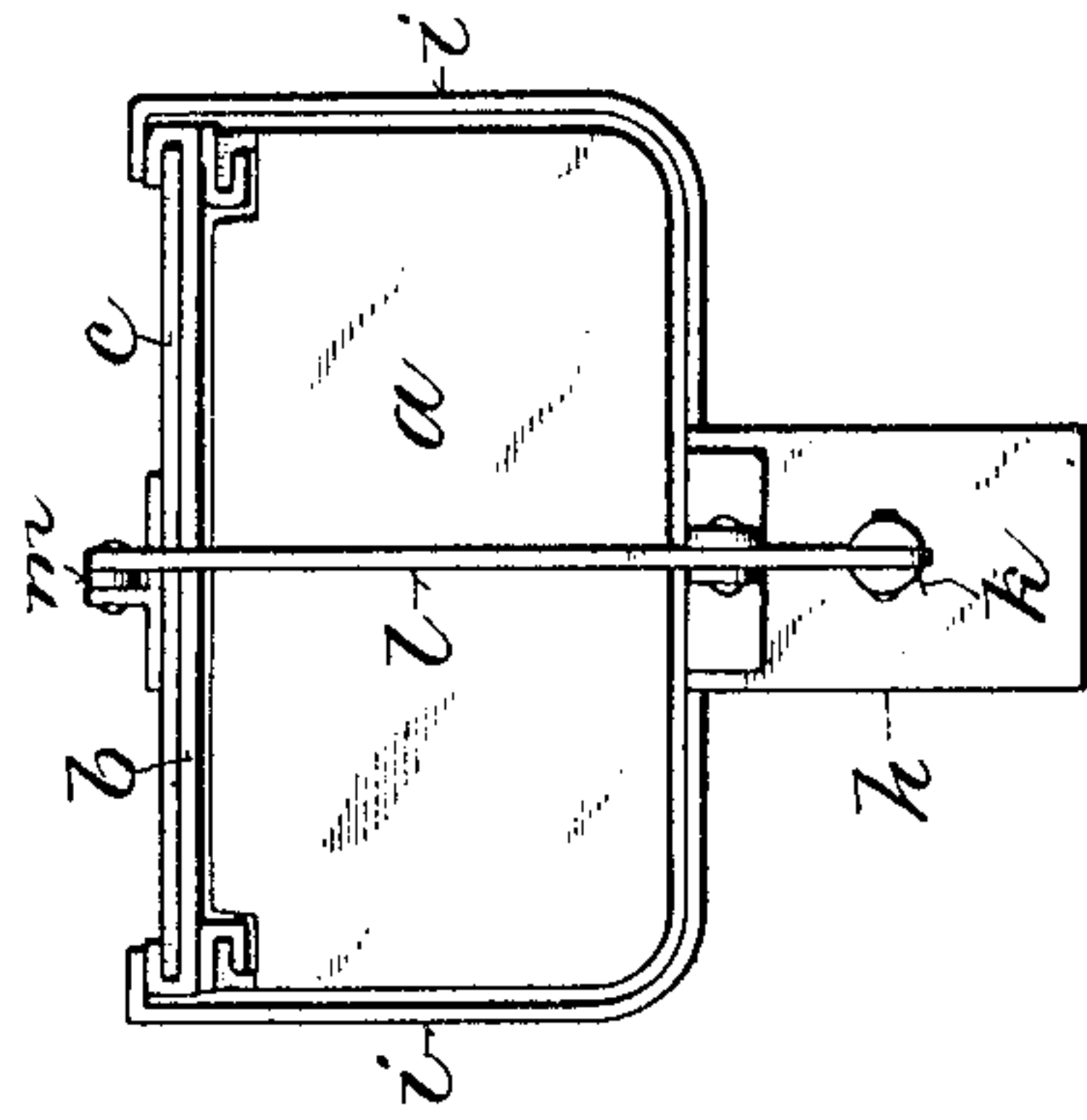


Fig. 1.

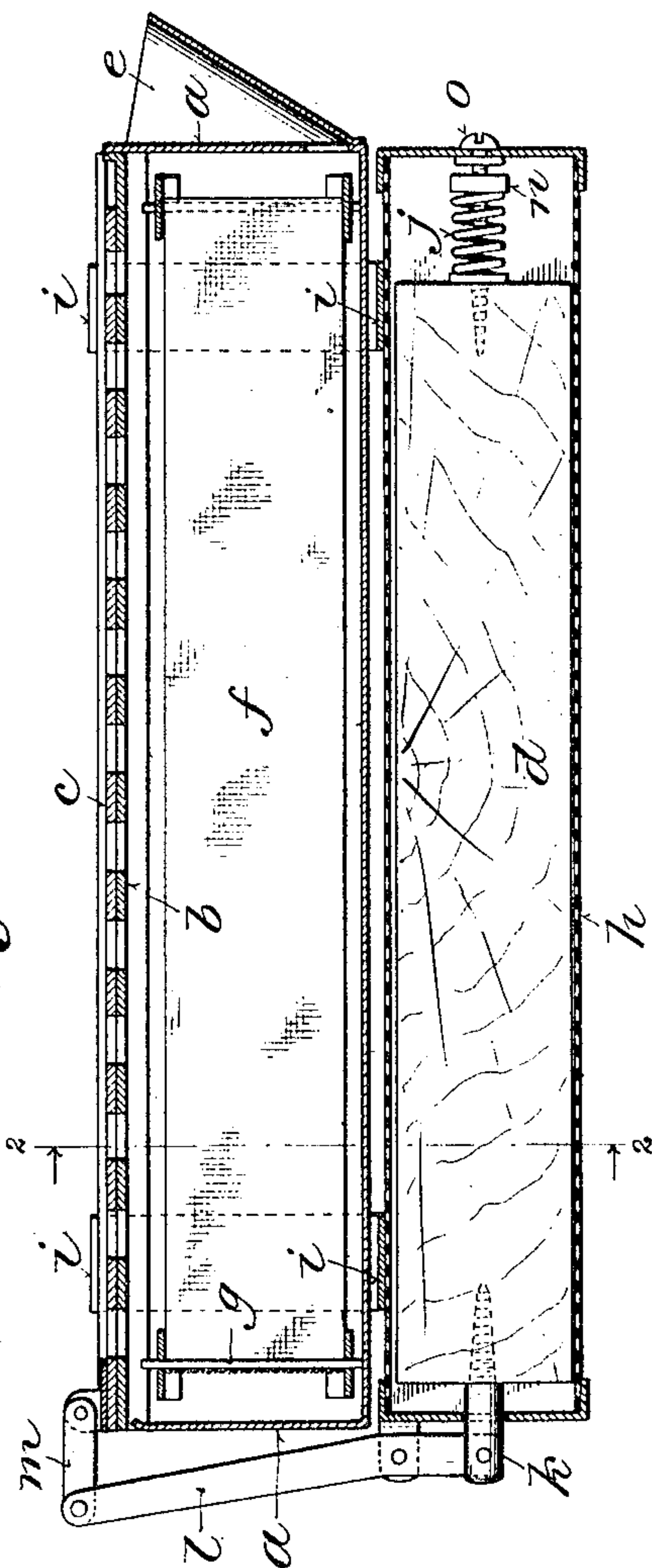
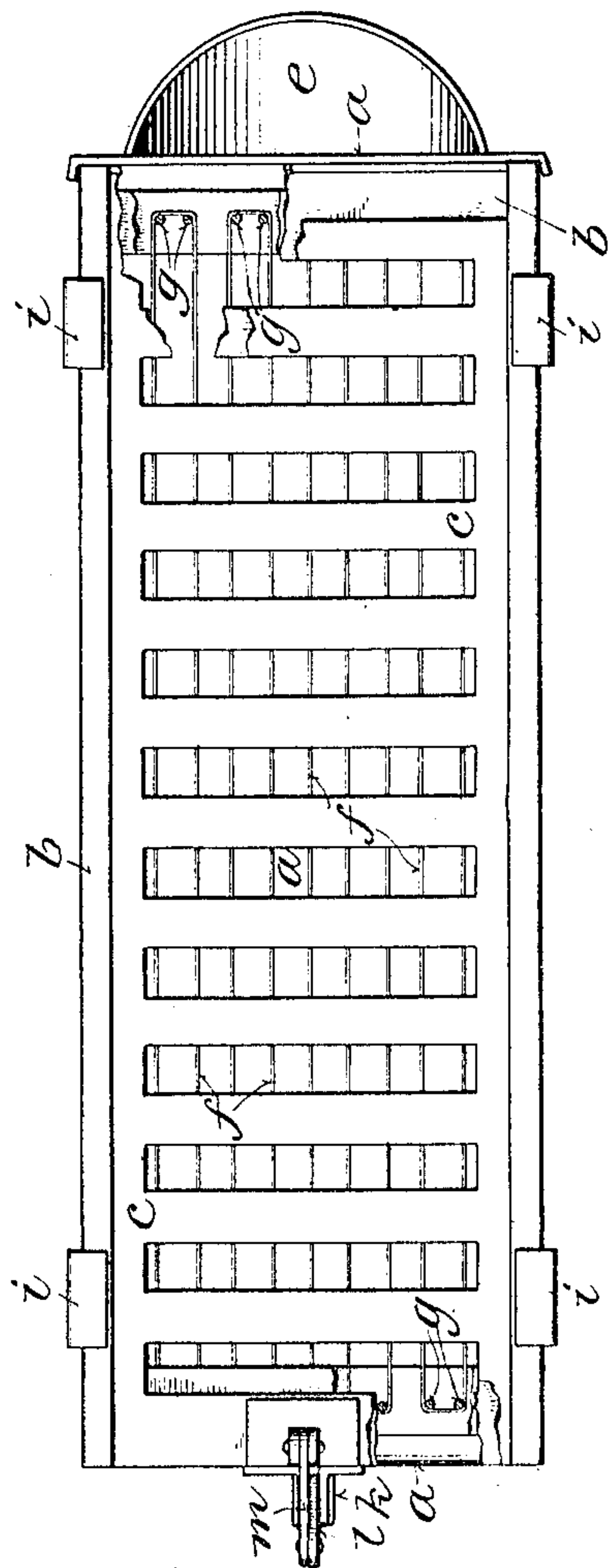


Fig. 3.



Witnesses:  
Fred Palm  
Alice E. Goss

Inventor:  
Frank A. Traver  
By Winkler, Henderson, Bottom & Hawsett  
Attorneys.



# UNITED STATES PATENT OFFICE.

FRANK A. TRAVER, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF TO JOSEPH H. ZIMMERMANN AND JOHN E. FITZGIBBON, BOTH OF MILWAUKEE, WISCONSIN.

## HUMIDOR.

No. 892,916.

Specification of Letters Patent.

Patented July 7, 1908.

Application filed October 24, 1907. Serial No. 398,877.

*To all whom it may concern:*

Be it known that I, FRANK A. TRAVER, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Humidors, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention relates to devices for supplying air with moisture for various purposes. Its main objects are to regulate and automatically control the humidity of air in inclosures such as cigar cases, and generally to improve the construction and operation of apparatus of this class.

It consists in certain novel features of construction and in the peculiar arrangement and combination of parts as hereinafter particularly described and pointed out in the claims.

In the accompanying drawing like characters designate the same parts in the several figures.

Figure 1 is a vertical longitudinal section on the line 1 1, Fig. 2, of a humidor embodying the invention; Fig. 2 is a cross section of the same on the line 2 2, Fig. 1; Fig. 3 is a plan view and Fig. 4 an end elevation as viewed from the left with reference to Figs. 1 and 3.

The device comprises generally an evaporating receptacle, a lid, cover or valve for opening said receptacle more or less and permitting more or less evaporation of the liquid contained therein, and an expansion member composed of some substance which expands and contracts under the influence of varying degrees of moisture, and operates automatically to open and close the evaporating receptacle more or less according to the humidity of the surrounding air. These elements or parts may be made of various shapes and sizes and of any suitable materials, and they may be arranged and connected in different ways to perform their functions.

But one of various forms in which the device may be embodied is shown for the purpose of illustrating and explaining the invention.

Referring to the drawing, *a* designates an open evaporating receptacle which may be made of sheet metal and removably connected with the under side of a multiported

top plate or frame *b*, by tongues and grooves. A correspondingly ported slide or cover *c* is movably mounted on the top plate or frame *b* and adapted by a comparatively small movement thereof effected by the swelling or shrinking of the expansion member *d*, to completely close or open the ports therein. To facilitate filling or supplying it with liquid, usually water, the receptacle *a* is provided at one end with a spout *e*, which communicates therewith through an opening into the lower part thereof below the ordinary liquid level therein.

A capillary screen or wick *f*, consisting of a strip of cloth or absorbent material, is wound back and forth through the receptacle *a* around vertical wires or rods *g*, adjacent to its ends, and serves to increase evaporation when the receptacle is opened more or less.

A perforated or open-work case *h*, which may also be conveniently made of sheet metal, is suspended below and parallel with the receptacle *a* by metal bands or hangers *i*, from the top plate or frame *b*.

The expansion member *d*, which may consist of a strip or bar of wood with the grain running crosswise thereof as shown in Fig. 1, is inclosed in the case *h* and attached at one end to a spring *j*. At the other end it is provided with a stem *k*, which passes loosely through the adjacent end of the case *h*, and is connected by a lever *l* and link *m* with the cover *c*, the lever *l* being fulcrumed to the adjacent end of the case *h* and its longer arm being connected with the cover so as to multiply the swelling and shrinking movement of the wood due to variations in the humidity of the surrounding air. The spring *j*, which affords a yielding bearing or abutment for the expansion member *d* to work against, is attached at the outer end to a nut or seat *n*, threaded on a screw *o*, which is swiveled and immovable endwise in the adjacent end of the case *h*.

The device as herein shown and described, primarily designated to maintain the air in a cigar case or similar inclosure, at the desired degree of humidity, operates as follows: The receptacle *a* being filled or supplied with water and placed in a cigar case or other inclosure, the member *d* will swell or expand and shrink or contract according to variations in the humidity of the surrounding air. When the air is dry the wood or other material of which said member is composed,



shrinks or contracts and opens the cover *c*, as shown in Figs. 1 and 3, allowing the water in receptacle *a* to evaporate and the vapor to escape therefrom into the case or inclosure, thereby increasing the humidity of the air contained therein. Under the influence of the increasing humidity of the surrounding air the member *d* swells or expands and gradually closes said cover more or less, thereby arresting or checking evaporation of the water in said receptacle *a* and the escape of vapor therefrom. As the surrounding air becomes drier, the cover *c* is moved in the opposite direction by the shrinking or contraction of the member *d*, thereby opening the cover more or less and permitting more vapor to escape from said receptacle into the case or inclosure until the air contained therein has attained the desired degree of humidity.

The foregoing operations take place automatically as long as the receptacle *a* is supplied with water, the member *d* swelling or expanding and shrinking or contracting according to variations in the humidity of the surrounding air, and closing and opening the cover *c* more or less, so that the desired degree of humidity in the case or inclosure is maintained within certain desired limits, according to the adjustment of the instrument. After the cover is fully closed or opened, the spring *j* yields and permits further expansion or contraction of the member *d* without injury to the apparatus.

The adjustment of the nut or spring seat *n* by means of the screw *o* will cause the member *d* to close and open the cover *c* more or less for any given amount of expansion or contraction of said member, and the degree of humidity to be maintained in the surrounding air by the apparatus may thus be varied as desired.

Various changes in details of construction and arrangement of parts may be made without materially affecting the principle or mode of operation of the device and without departing from the spirit and intended scope of the invention.

I claim:

1. In a humidor the combination of a liquid receptacle, a cover therefor, and a member composed of a substance which expands and contracts under the influence of varying degrees of atmospheric humidity and which is arranged to open and close said cover more or less according to such variation in the humidity of the air, substantially as described.

2. In a humidor the combination of a liquid receptacle, a movable cover therefor, and a member composed of a substance which expands and contracts under the influence of varying atmospheric humidity and connected with said cover so as to open the same as the humidity of the air increases, and vice versa, substantially as described.

3. In a humidor the combination of a liquid receptacle, a cover therefor, a wooden expansion member exposed to the surrounding air and connected with said cover so as to open and close the same more or less according to variations in the humidity of the air, substantially as described.

4. In a humidor the combination of a liquid receptacle, a cover therefor, a wooden expansion member exposed to the surrounding air and connected with said cover so as to open and close the same more or less according to variations in the humidity of the air, the grain of the wood being arranged transversely to the direction of the movement which it imparts to the cover, substantially as described.

5. In a humidor the combination of a liquid receptacle, a cover therefor, a member which expands and contracts under the influence of varying degrees of atmospheric humidity connected with and adapted to open and close said cover, and means of adjustment for varying the amount of opening of said cover by said member for a given degree of humidity, substantially as described.

6. In a humidor the combination of a liquid receptacle, a cover therefor, and an expansion member of wood connected at one end with said cover and having a yielding bearing at the other end, substantially as described.

7. In a humidor the combination of a liquid receptacle, a cover therefor, and an expansion member of wood connected at one end with said cover and having an adjustable bearing at the other end, substantially as described.

8. In a humidor the combination of a liquid receptacle, a cover therefor, an open case adjacent to said receptacle, and an expansion strip of wood inclosed in said case and connected at one end by a lever with said cover and having a yielding bearing at the other end, substantially as described.

9. In a humidor the combination of a liquid receptacle containing a capillary screen, a cover for said receptacle and an expansion member connected with said cover and composed of a substance which expands and contracts under the influence of varying atmospheric humidity, substantially as described.

10. In a humidor the combination of a liquid receptacle, containing a sinuous capillary screen arranged to dip into the liquid contained in said receptacle, a cover for said receptacle, and an expansion member exposed to the surrounding air and connected with said cover, substantially as described.

11. In a humidor the combination of a liquid receptacle having a multiported top, a correspondingly multiported cover therefor, and an expansion member exposed to the surrounding air and connected with said cover, substantially as described.



12. In a humidor the combination of a liquid receptacle having a filling spout communicating therewith through an opening below the ordinary liquid level therein, a cover for  
5 said receptacle, and an expansion member exposed to the surrounding air and connected with said cover, substantially as described.

13. In a humidor the combination of a frame, a liquid receptacle removably fitted  
10 in said frame, a sliding cover for said receptacle guided in said frame, and an expansion strip exposed to the surrounding air and connected with said cover, substantially as described.

14. In a humidor the combination of a multiported plate, an open top liquid receptacle removably connected with said plate which serves as a top therefor, a correspondingly ported cover movably mounted on said plate, and a member expansible by moisture  
20 exposed to the surrounding air and connected with said cover, substantially as described.

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

FRANK A. TRAVER.

Witnesses:

CHAS. L. GOSS,  
ALICE E. GOSS.