

(No Model.)

W. A. PRESTON.
REFRIGERATOR.

No. 407,685.

Patented July 23, 1889.

Fig. 1.

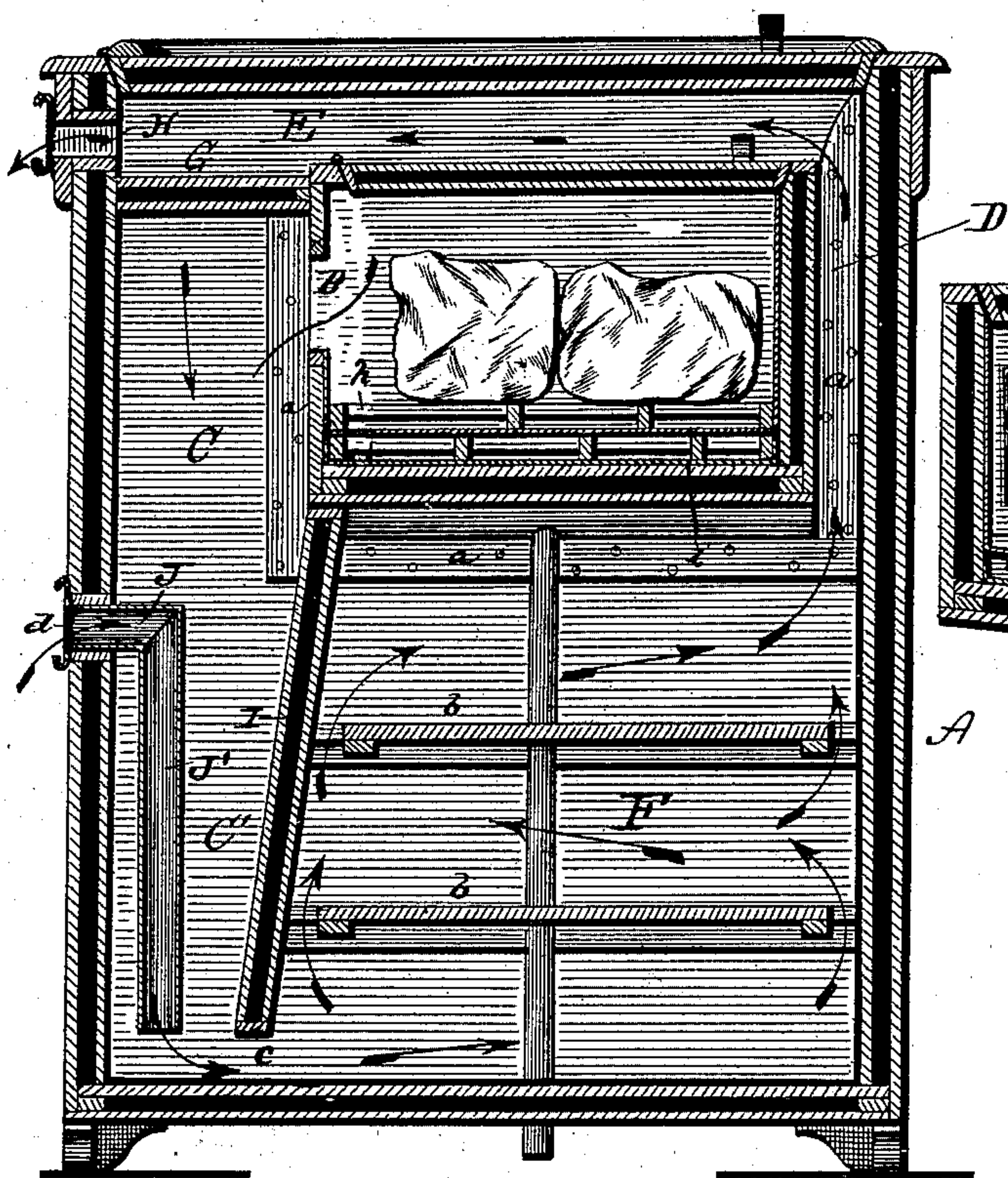


Fig. 2.

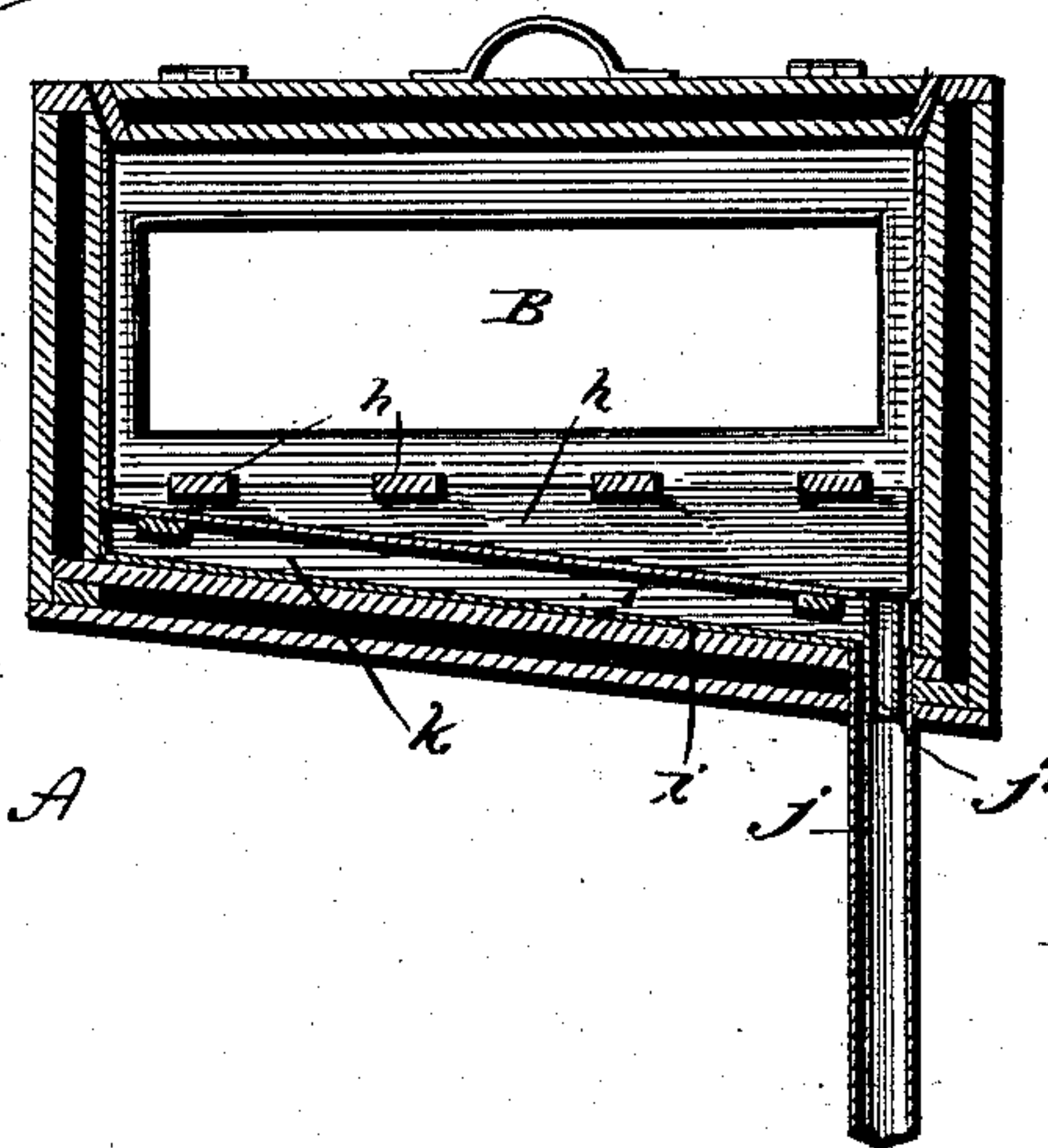
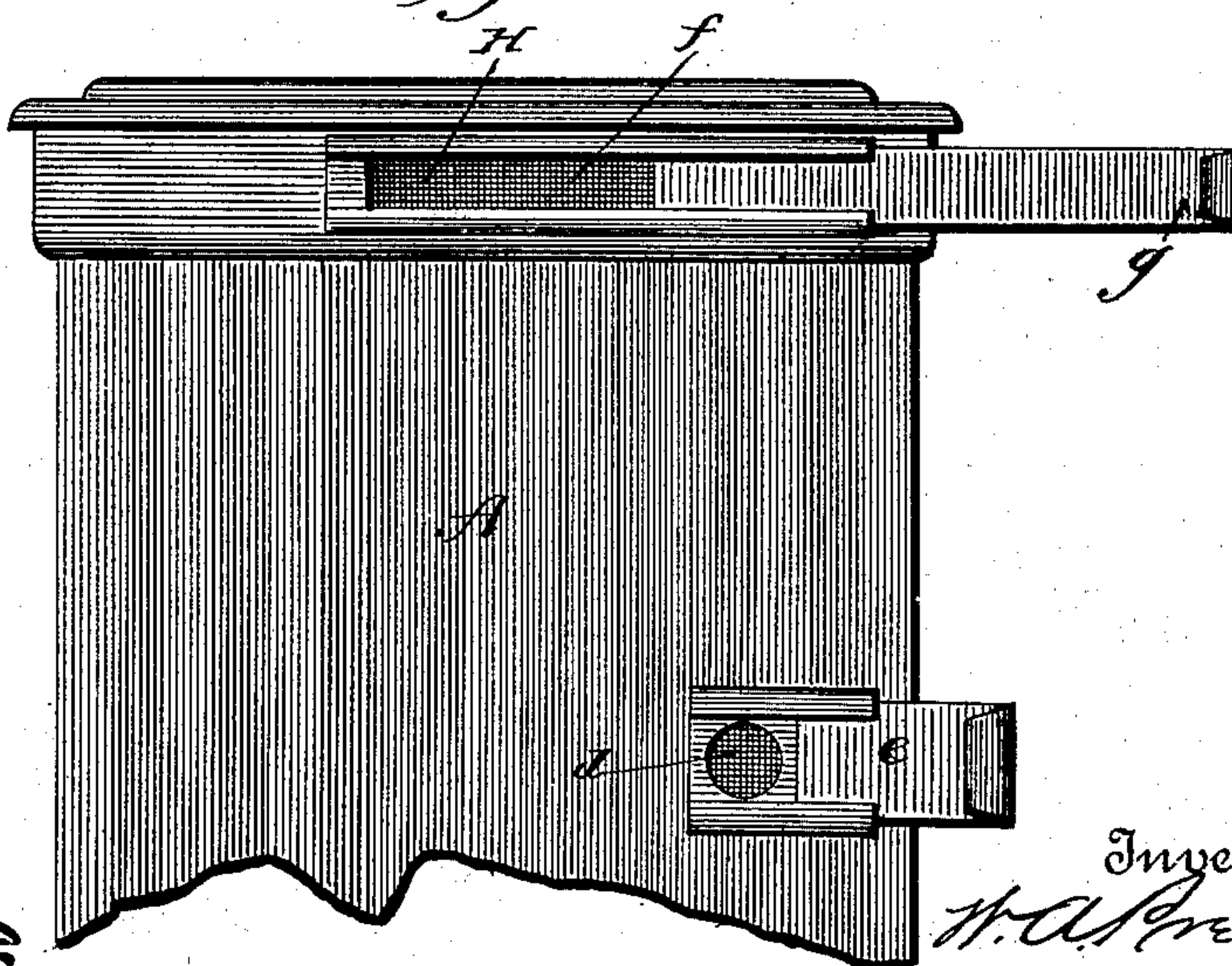


Fig. 3.



Witnesses

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WILLIAM A. PRESTON, OF FORT BRANCH, INDIANA.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 407,685, dated July 23, 1889.

Application filed February 9, 1889. Serial No. 299,251. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. PRESTON, a citizen of the United States, residing at Fort Branch, in the county of Gibson and State of Indiana, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 represents a vertical sectional view of my improved refrigerator; Fig. 2, a detail transverse sectional view of the ice-chamber; and Fig. 3, a rear view of the upper portion of the refrigerator, showing the valves for regulating the admission and exit of air.

The invention has relation to certain new and useful improvements upon the refrigerator patented to me November 27, 1888; and it has for its objects, essentially, to provide for a more thorough distribution of cold fresh air throughout the provision-chamber and to improve the means for supplying cold fresh air to the provision-chamber without passing the same over the ice, as will be more fully hereinafter specified.

It also has for its object to improve the ice chamber or box.

The invention consists in certain new and novel features of construction and arrangement that will be fully hereinafter set forth, and particularly pointed out in the claim appended.

Referring to the annexed drawings by letter, A designates the refrigerator proper, which may be of any suitable construction and provided with double non-conducting walls and convenient doors. Suspended within the refrigerator and supported upon suitable cleats or strips *a*, secured on the interior of the same, is the ice box or chamber, which is made removable and constructed of double non-conducting walls and cover to protect the ice and keep interior of the box at a low temperature. As shown, one side of this ice-chamber is left open, as at B, for the exit of the cold air. This chamber is so suspended or located in the refrigerator that it forms two vertical side passages C D and an upper horizontal passage or chamber E, the provision-chamber F being directly below the ice-chamber and provided with suitable shelves

or gratings *b* for the support of the articles to be kept cool and preserved. The upper end of the passage D communicates with the upper horizontal passage E between the ice-chamber and the cover of the refrigerator; but the upper end of the passage C is completely bridged or covered over by a horizontal double non-conducting wall G. An exit opening H, covered by a suitable gauze and adjustable slide, is formed in one side of the refrigerator near its top and communicates with the upper horizontal passage E, whereby the warm foul air is allowed to escape. Depending from the open side B of the ice-chamber, and extending entirely across the interior of the refrigerator, is a double non-conducting wall or partition I, which terminates a short distance from the bottom of the refrigerator, forming a short passage *c*. This depending wall is preferably inclined, as shown, its lower end being carried slightly outward toward the adjacent wall of the refrigerator, forming a tapering passage C'.

Passing through one of the walls of the refrigerator (preferably the wall adjacent to the partition I) is the fresh-air pipe J, this supply-pipe being provided with a downward continuation or extension J', which terminates in and near the bottom of the chamber C' about on a level with the lower edge of the double wall I. Across the inlet end of the air-supply pipe is stretched a wire-gauze *d*, which serves to keep insects out of the refrigerator. The admission of air to this pipe J is controlled by an adjustable slide *e* on the outside of the refrigerator. The wire-gauze stretched across the outlet H is lettered *f*, and the adjustable slide for this opening *g*.

The interior of the ice-chamber and refrigerator are preferably lined with zinc or other non-corrosive material.

In the bottom of the ice-box is placed a suitable wooden rack *h* to support the ice. Underneath the bottom proper of the ice-box is placed a false bottom *i*, from which leads the drip-pipe *j*, this pipe terminating outside of the refrigerator at any suitable point. A short drip-pipe *j'* conveys the water from the bottom proper into the main drip-pipe *j*. Both bottoms are formed slanting or on an incline to readily carry off the water, as is

evident. The upper bottom is supported by means of an interposed rack *k*, the space thus formed between the two bottoms being for the free circulation of air, the air being admitted between the two pipes *j j*. The lower or false bottom is for the purpose of catching and collecting any water that may condense or collect on the lower side of the upper bottom.

When ice is placed in the ice-chamber and the doors closed, the circulation of air will be about as follows: As the air in the ice-chamber becomes cooled, it falls or passes out into the chamber *C* through the open side *B*, then down to the bottom of the passage *C'*, and under the lower end of the double wall *I* and into the lower part of the provision-chamber. As the cold air drops down around the lower end of the fresh-air pipe *J'*, fresh air is gently drawn in and carried into the provision-chamber, as is evident. Then as the air in the provision-chamber becomes warmed it gently rises to the top of the same and passes up through the side passage *D* into the upper horizontal chamber *E* and out at the exit-opening *H*.

By the depending wall or partition *I* it will be perceived that I insure a thorough circulation of the cold and fresh air throughout the entire provision-chamber, thus keeping up a uniform temperature in the same and keeping the articles placed therein perfectly fresh and free from taint or offensive odors.

By extending the fresh-air pipe *J'* down near the bottom of the cold-air chamber *C'* before terminating it, it will be observed, I provide for cooling the fresh air before introducing it into the provision-chamber, thereby obtaining an abundance of fresh air

without reducing the temperature of the air in the provision-chamber materially. This construction of inlet-pipe also facilitates the drawing in of the fresh air, inasmuch as when the air in the extension *J'* becomes cool it has a tendency to drop out at the lower end of the pipe of its own accord, as is evident.

The advantage in forming the wall *I* double and non-conducting is to prevent the comparatively warm air of the provision-chamber reducing the temperature of the air in the cold-air chamber *C'*, and thereby retard the latter's downward passage.

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

In a refrigerator, the combination of the body thereof provided with an opening *H* in one of its sides, an ice-chamber so suspended in the refrigerator as to form, with the walls thereof, side passages *C* and *D*, this ice-chamber being constructed of non-conducting walls and having an open side *B* leading into the passage *C*, a non-conducting bridge-wall *G* over the top of the passage *C*, the inclined non-conducting partition *I*, depending from the bottom of the ice-chamber and extending to near the bottom of the refrigerator, forming passages *C'* and *c*, and a fresh-air inlet pipe *J*, provided with an extension *J'* extending to the lower end of the said passage *C'*, as and for the purposes herein set forth.

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

WILLIAM A. PRESTON.

Witnesses:

JAS. S. KIGHT,
JOHN KNAPP.