

No. 714,248.

Patented Nov. 25, 1902.

M. A. SIMMONS.

COOLER.

(Application filed Aug. 20, 1902.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

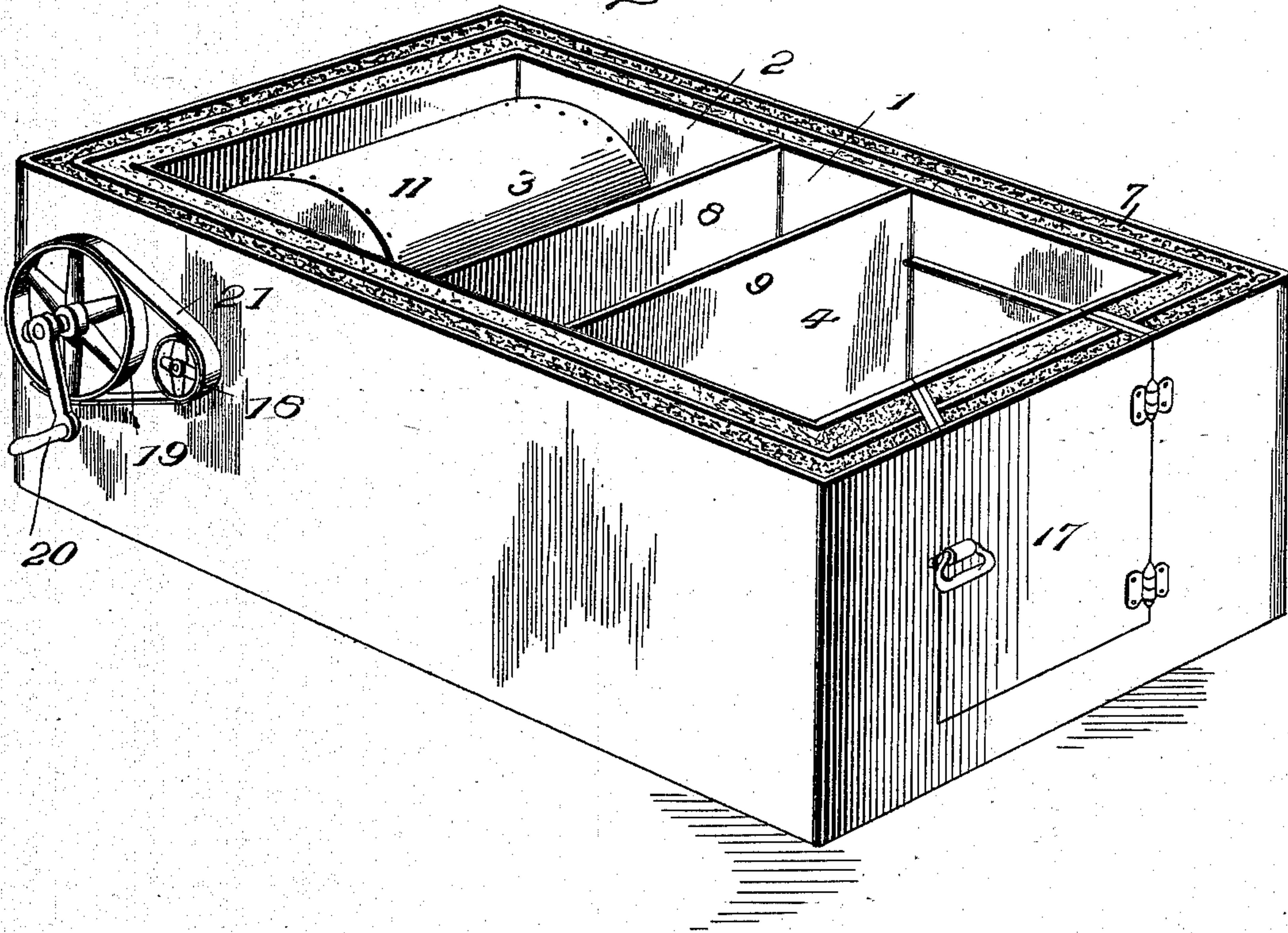
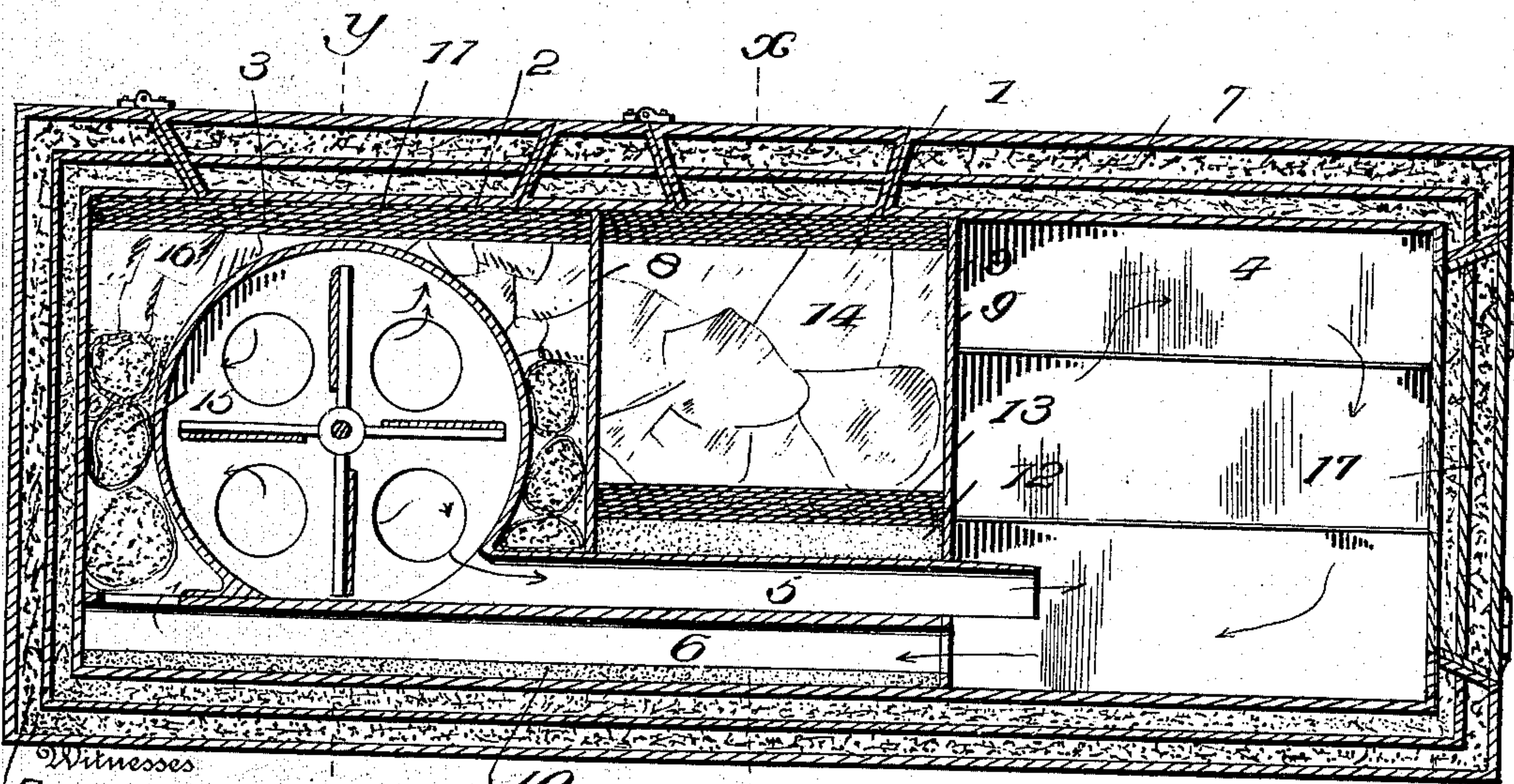


Fig. 2.



Witnesses

For Invention  
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2 Sheets—Sheet 2.

Fig. 3.

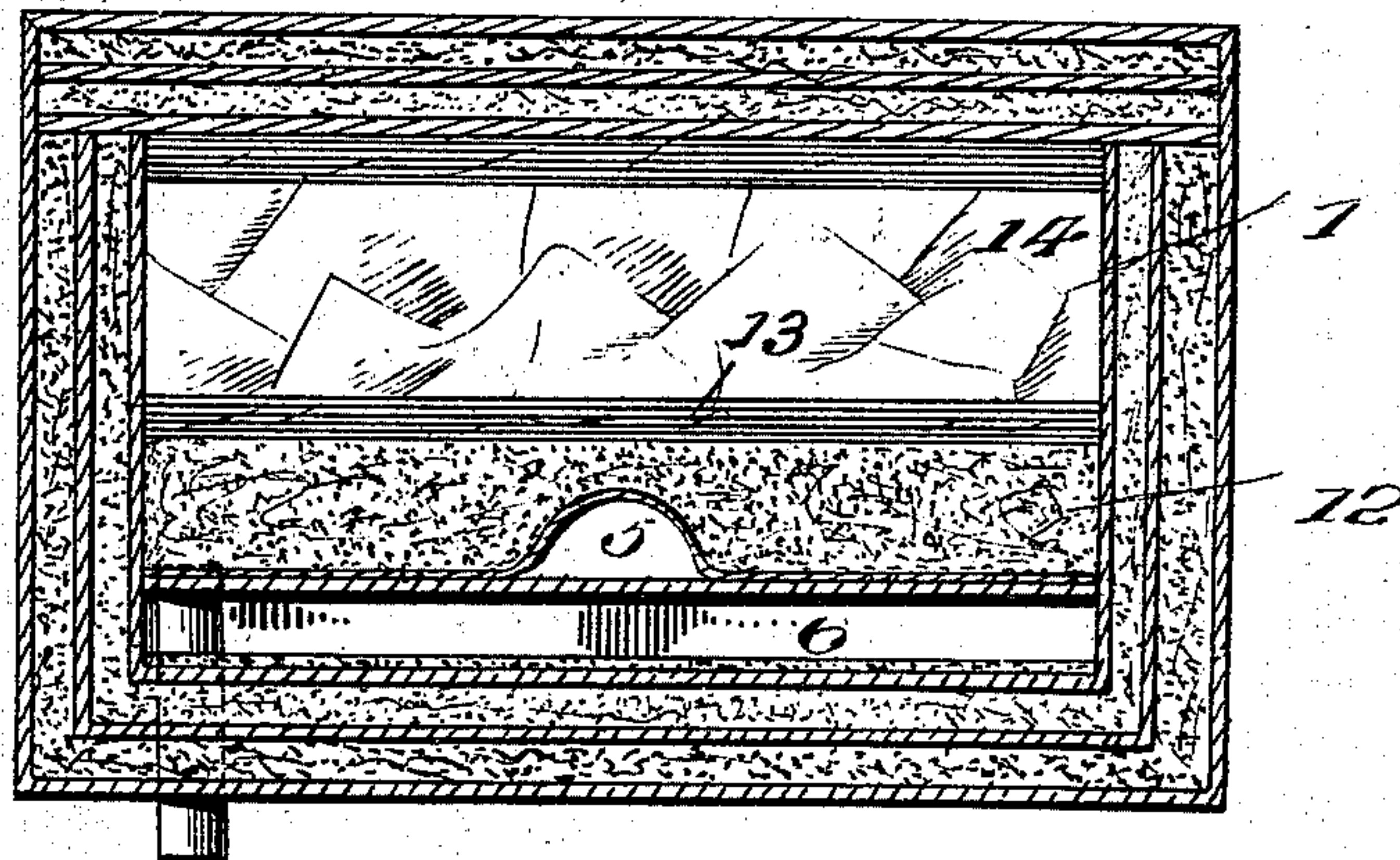


Fig. 4.

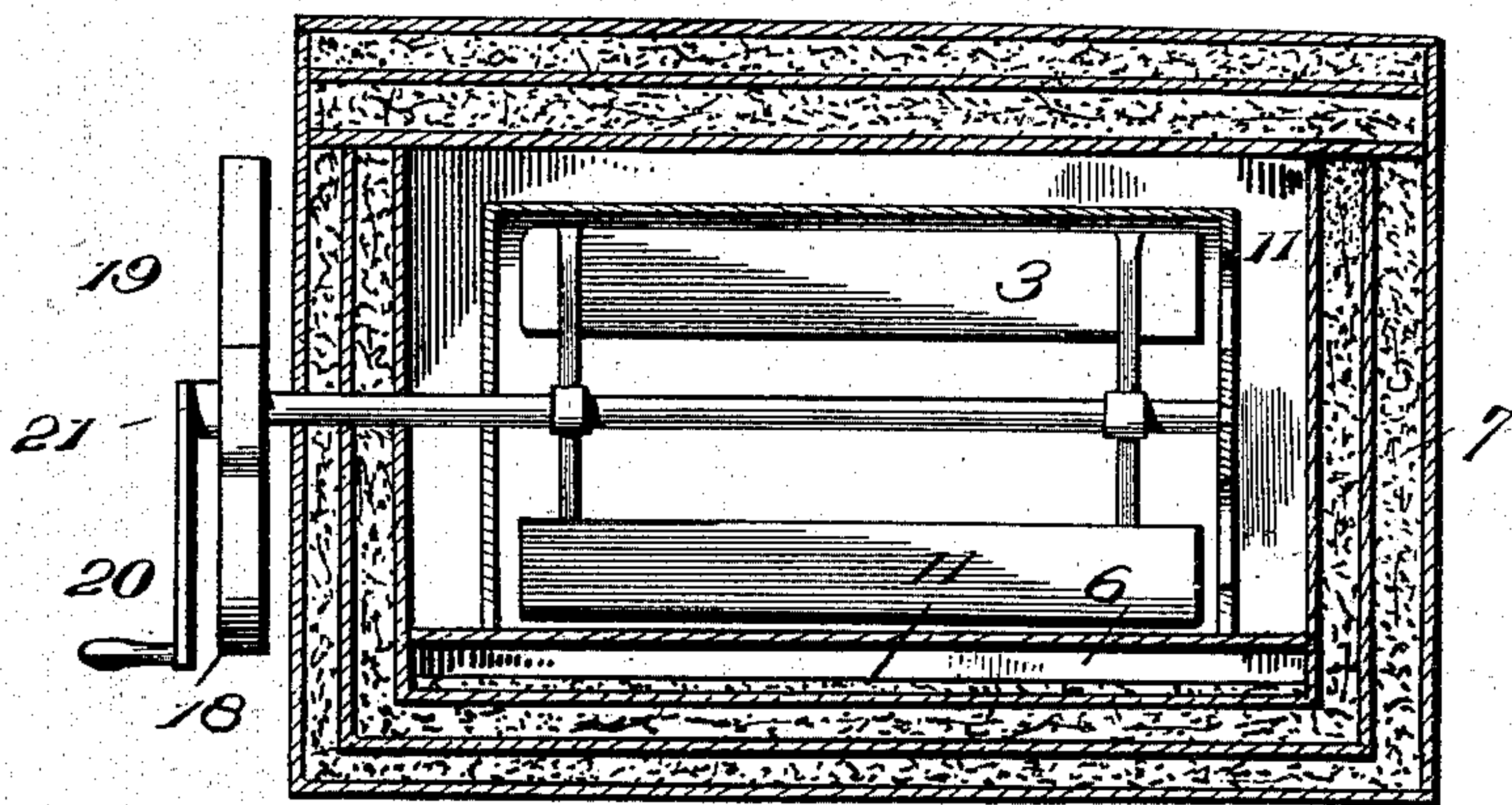
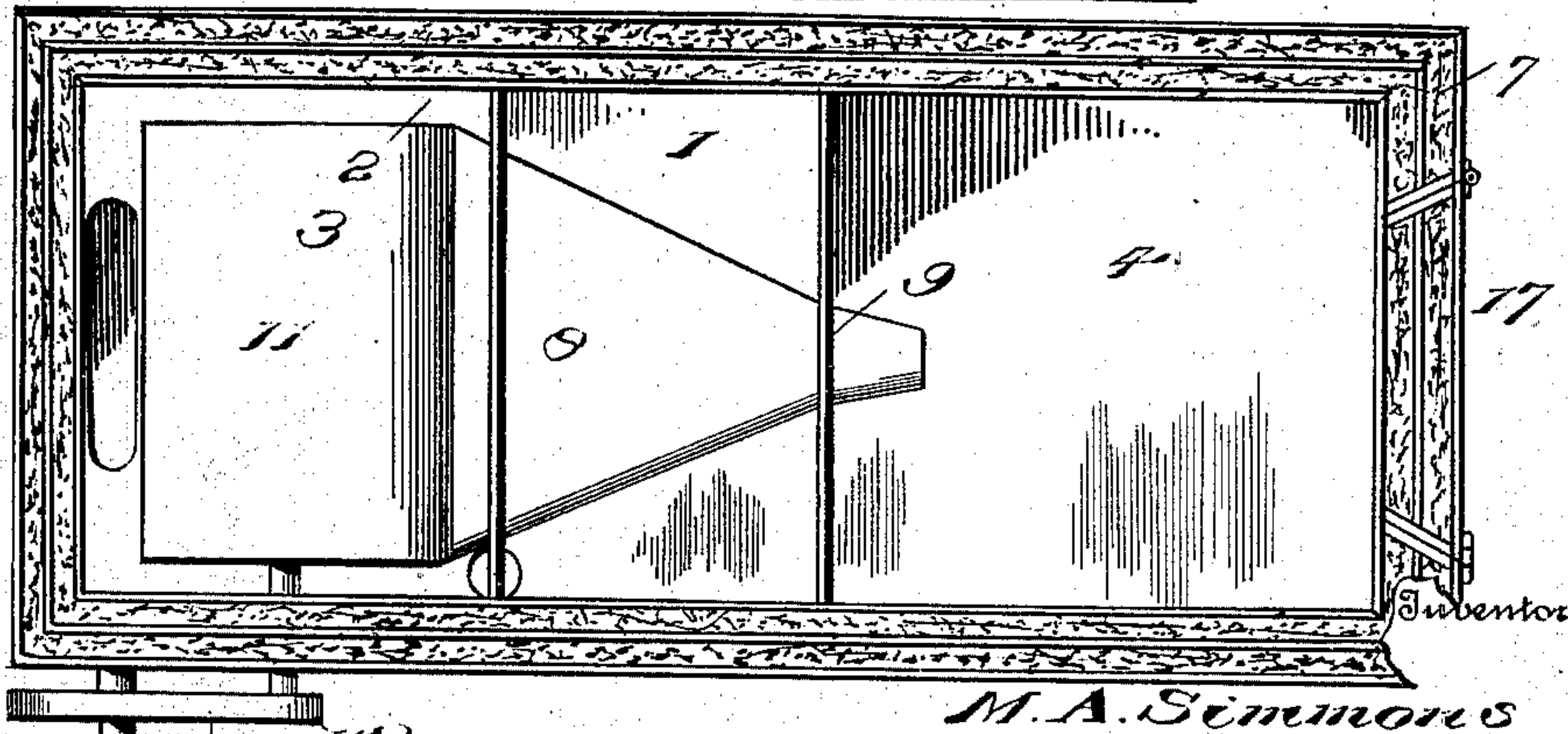


Fig. 5.



Witnesses

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By

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# UNITED STATES PATENT OFFICE.

MARCUS A. SIMMONS, OF TECUMSEH, OKLAHOMA TERRITORY.

## COOLER.

SPECIFICATION forming part of Letters Patent No. 714,248, dated November 25, 1902.

Application filed August 20, 1902. Serial No. 120,410. (No model.)

*To all whom it may concern:*

Be it known that I, MARCUS A. SIMMONS, a citizen of the United States, residing at Tecumseh, in the county of Pottawatomie, Oklahoma Territory, have invented certain new and useful Improvements in Coolers, of which the following is a specification.

The primary object of this invention is the provision of a safe or refrigerator of novel formation for the storage and preservation of fruits, vegetables, meats, fish, and food of all kinds, the air being kept dry and caused to circulate when required, either at intervals or continuously, according to the specific use of the machine.

While, as stated, the essential feature of the invention is the conservation of food by a cool dry atmosphere, yet the invention is susceptible of a wide range of utility in cooling houses, places of assemblage, conveyances, and structures of every variety affected by changes of temperature.

In its embodiment the cooler comprises chambers, a refrigerant in said chambers consisting of common salt (chlorid of sodium) and ice kept separated by gunny-sacks, burlap, absorbent or fibrous material, means for connecting the chamber to be cooled with the refrigerant-chambers, and means for circulating air through the refrigerant-chamber 2 and the chamber to be cooled.

A further purpose of the invention is the utilization of salt in a dry state as a packing or filling for the walls of the chambers, cooler, or device, this filling having been found to give the best results both in economy of ice and retention of cold.

Another novel feature of the invention is a passage provided with a layer of salt, over which the air in its circulation is caused to pass and is purified and divested of its humidity.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the

invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a cooler embodying the invention, the cover being omitted. Fig. 2 is a central longitudinal section. Fig. 3 is a transverse section about on the line X X of Fig. 2. Fig. 4 is a section similar to Fig. 3 about on the line Y Y of Fig. 2. Fig. 5 is a top plan-view, the cover being omitted.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The machine or cooler comprises in its structural organization a series of refrigerant-chambers 1 and 2, a fan 3 for establishing a circulation of air, a chamber 4 to be cooled and which in the present instance is adapted to receive the provisions or other articles to be cooled or conserved, and passages 5 and 6 for the circulation of the air, substantially as indicated by the arrows in Fig. 2. The chambers 1, 2, and 4 are preferably incased by hollow walls, in the space of which a filling of common salt (chlorid of sodium) is packed, this having been found to give the best results in preventing heat from the surrounding atmosphere reaching the internal structure of the cooler. To further exclude the heat and prevent the penetration thereof to the interior of the device, the latter is surrounded by sawdust or other material. For general use an outer space 7 encompasses the cooler and receives the sawdust or other packing. In some locations this outer casing is not necessary, as the packing material may be piled around the structure, the latter way being preferred when space and looks are no object and a matter of economy is the desideratum. In the particular construction illustrated the casing, box, or body of the structure is subdivided by means of partitions 8 and 9 to form the several chambers. The space 6 is below the chambers 1 and 2 and communicates at one end with the chamber 4 and at its opposite end with the rear portion of the chamber 2. The bottom of this space or passage 6 is provided with a layer of salt to the depth of an inch, more or less, over which the air from the chamber 4



is caused to pass preliminary to being cooled before again entering the chamber 4. The air in passing through the passage 5 and over the layer of salt 10 is purified and rendered somewhat dry, the excess of humidity being removed therefrom by the salt, because of its affinity for moisture.

The means for creating a positive circulation of air through the chamber 4 consists, essentially, of a fan 3 of any construction and a casing 11 and is located in the chamber 2. A passage or flattened tapering spout 5 extends from the casing 11 through the lower portion of the chamber 1 into the chamber 4, so as to discharge the air from the fan into said chamber 4. The ends of the fan-casing open into the chamber 2, as indicated most clearly in Figs. 2 and 4, and the air passing from the passage 6 into the chamber 2 enters the fan-casing 11 and passes from thence through the passage 5 into the chamber 4. The chambers 1 and 2 are supplied with a refrigerant to cool the air in its passage there-through, the refrigerant found to give the best results being common salt (chlorid of sodium) and ice. The chamber 1 has its lower portion provided with a layer of salt 12 to the depth of two inches, more or less, over which gunny-sacks 13, burlap, or any fibrous or absorbent material is placed. A block of ice 14 is arranged upon the layer 13 and is separated from the layer of salt 12 by means of the layer 13. The chamber 2 receives packages of salt, as shown at 15, said packages being bags or sacks of any size, dependent upon the capacity of the machine and the space to be filled. These packages 15 are piled into the chamber 2, so as to nearly or quite fill the same, and upon the top thereof is placed blocks of ice 16. The chambers 1, 2, and 4 are covered by a top having double walls, the inner walls having its space packed with salt and the outer wall having its space filled with sawdust.

Access is had to the chamber 4 by means of a door 17, which may be located at any convenient point. The means for circulating air through the chamber 4 may be operated either by means of a motor or by hand, according to the purpose of the cooler. For con-

venience of operating the fan the mechanism illustrated has been shown and consists of a pulley 18, applied to the projecting end of the fan-shaft, and a drive-pulley 19, operable by means of a crank 20, a band-pulley 21 connecting the pulleys 18 and 19.

A machine or cooler embodying the invention is adapted to have the air circulate through the cooling-chamber 4 either by a continuous operation of the fan or a running thereof at intervals. The circulation of the air serves to purify, dry, and cool the same, all of which are essential to a conservation of articles of food. The machine is economical in the utilization of the refrigerant, which needs to be replaced only at long intervals apart. The chamber 4 instead of being utilized for storage of food or in the capacity of a refrigerator may be a compartment, room, structure, or other habitable place to be cool in warm weather. It will thus be seen that the invention is susceptible of a wide range of utility.

Having thus described the invention, what is claimed as new is—

The herein-described refrigerator consisting of a box, vertical partitions subdividing the box into a series of horizontally-arranged chambers, the intermediate chamber adapted to receive a refrigerant and one end chamber receiving the provisions, a fan arranged in the other end chamber and adapted to be surrounded by a refrigerant, a flattened tapering spout connecting the fan-casing with the provision-chamber and extended through the lower portion of the intermediate chamber, a passage arranged below the spout and adjacent thereto and connecting the provision-chamber with the lower rear portion of the chamber having the fan and supplied with a layer of salt, and non-conducting material surrounding the box, substantially as described.

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

MARCUS A. SIMMONS. [L. S.]

Witnesses:

JESSIE W. CHISHOLM,  
GENEVIEVE MATTHEWS.