

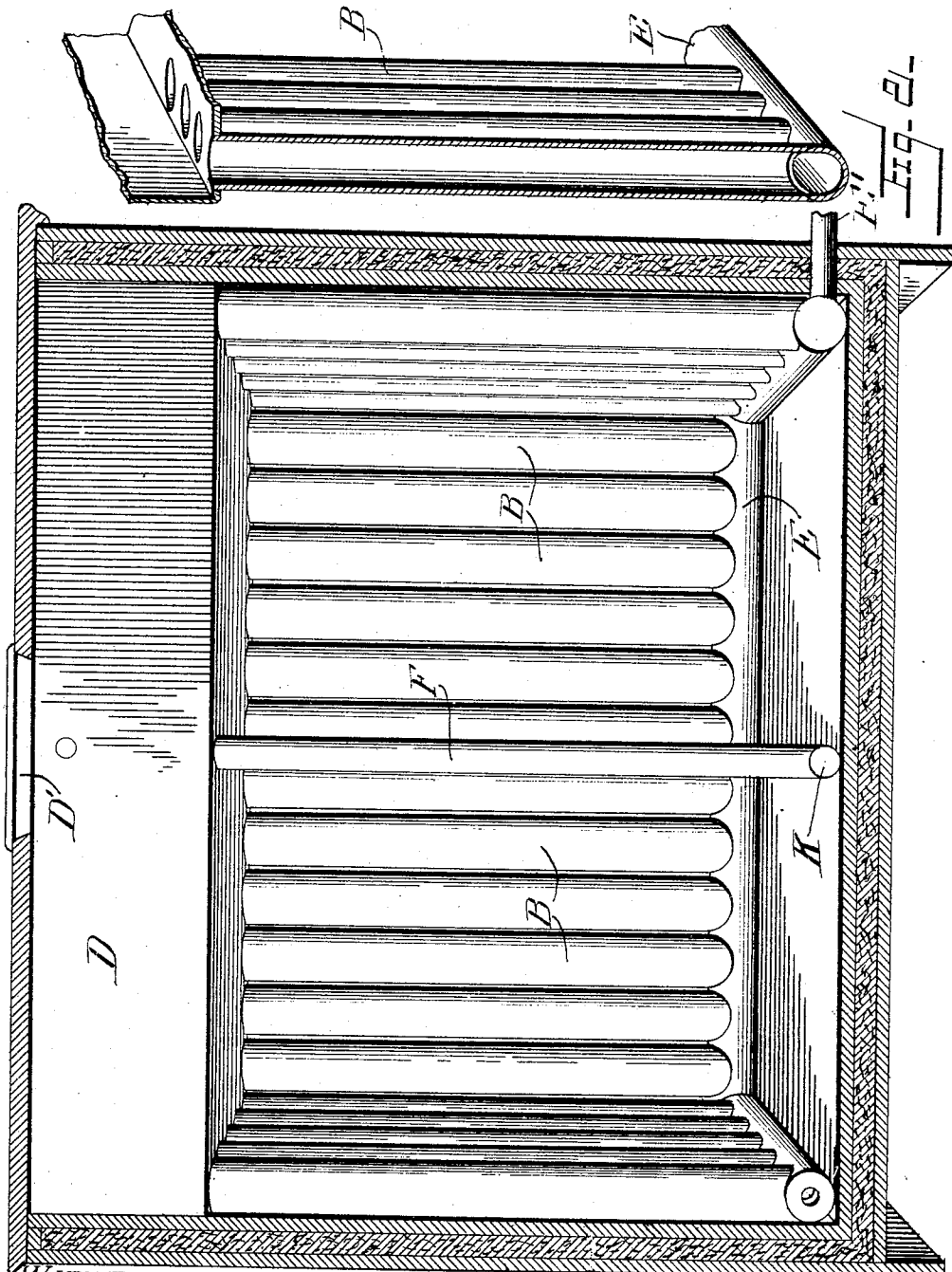
No. 782,834.

PATENTED FEB. 21, 1905.

F. V. DETWILER.  
REFRIGERATOR.

APPLICATION FILED APR. 23, 1904.

2 SHEETS—SHEET 1.



WITNESSES  
*W. F. Hoyle.*  
*A. L. Hoyle*

*FIG. 1*

INVENTOR  
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BY  
*Franklin H. Hoyle*  
Attorney

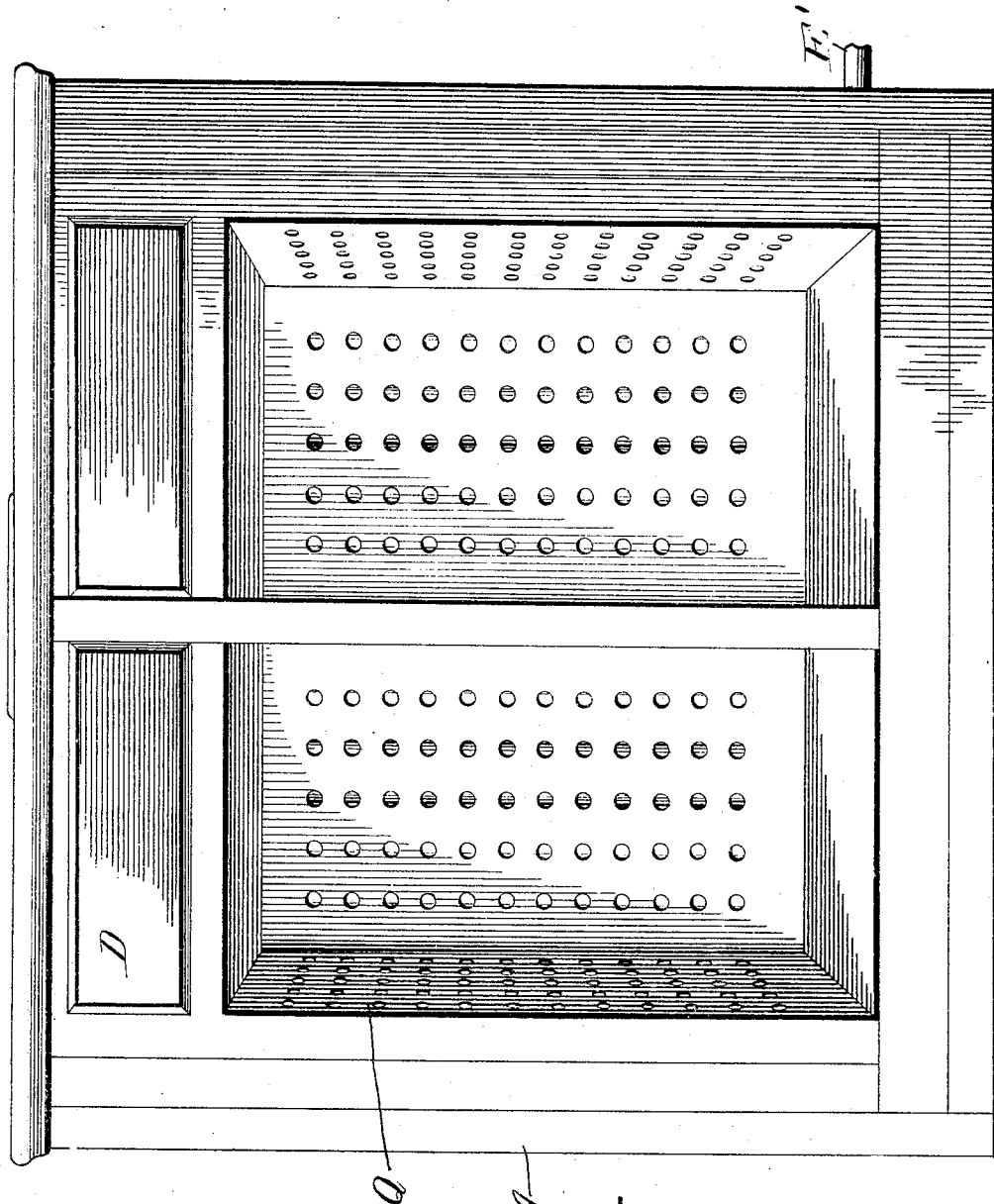
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2 SHEETS—SHEET 2.



WITNESSES  
*W. F. Doyle.*  
*a. L. Stough*

FIG. 3  
INVENTOR  
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BY  
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# UNITED STATES PATENT OFFICE.

FORREST V. DETWILER, OF BUTLER, PENNSYLVANIA, ASSIGNOR OF ONE-TWENTIETH TO JAMES H. FILSON, OF PITTSBURG, PENNSYLVANIA.

## REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 782,834, dated February 21, 1905.

Application filed April 23, 1904. Serial No. 204,610.

*To all whom it may concern:*

Be it known that I, FORREST V. DETWILER, a citizen of the United States, residing at Butler, in the county of Butler and State of Pennsylvania, have invented certain new and useful Improvements in Refrigerators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in refrigerators; and the object of the invention is to produce a device of this character in which cold water is caused to pass through tubes spaced apart and adapted to surround the compartments of the refrigerator, affording means for the circulation of air about the pipes and about the tank with which the tubes communicate, thereby generally improving the efficiency of the refrigerator and lessening the expense of running the same.

The invention consists in various details of construction and in combinations and arrangements of parts, which will be hereinafter fully described and then specifically defined in the appended claim.

My invention is illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which drawings similar letters of reference indicate like parts in the views, in which—

Figure 1 is an elevation of a refrigerator, showing the arrangement of the series of tubes lining the compartments thereof. Fig. 2 is an enlarged detail view of one series of tubes and tank communicating therewith; and Fig. 3 is a view of a refrigerator, showing tubes positioned in place with the perforated lining placed over the same.

Reference now being had to the details of the drawings by letter, A designates a refrigerator, which may be of any shape or size and with various shapes and sizes of compartments. Positioned within each compartment

of the refrigerator is a series of tubes, (designated by letters B.) These tubes may be of any size and of such a length as to conform to the size of the compartment in which they are used and are adapted to surround the three sides of the compartment. The upper ends of said tubes, which are spaced apart in order to allow the air to circulate about the same, are connected to a tank D, having a filling-aperture D', and in which tank cold water or any cooling agent may be placed. The lower ends of the tubes communicate with a horizontally-disposed pipe E. In the drawings I have shown a series of tubes or pipes F, which communicate at their upper ends with the tank D and communicate with a pipe K, which branches from the pipe E. Said series of pipes F form a central partition, whereby the apparatus is adapted for a two-compartment refrigerator. A suitable outlet-pipe E' may be provided for the pipe E, and when cold water is used as a cooling agent the same may be communicated to the tank D and allowed to flow through the pipes B and through the horizontal pipe E and make exit at any suitable location, thereby affording a continuous flow of water to the pipes, bringing the cool water against the tubes or pipes, which are made of thin metal and presenting cool surfaces to the air about the various tubes and pipes. While it has been demonstrated that cold water passing through the tubes about the refrigerator affords a low temperature within the refrigerator, other cooling agents, as brine or ice, may be employed.

A suitable lining Q, of metal or other material, having, preferably, perforations therein, is placed adjacent to the tubes or pipes, which will allow the cold air to circulate freely through the lining and about the pipes, and mineral-wool packing or other suitable material is provided, as is common in the art, to prevent the outside atmosphere influencing the temperature of the water in the pipes.

By the provision of a refrigerator embodying the features of my invention an economical means is provided for producing sufficient cold within the refrigerator to satisfactorily

keep articles without the use of ice, or when ice is used to use a small amount thereof to produce satisfactory results.

While I have shown a particular detailed construction of apparatus illustrating the features of my invention, it will be understood that I may make alterations, if desired, in the detailed construction of the same without in any way departing from the spirit of my invention.

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

A refrigerator comprising a casing, a tank supported in the upper end of the casing and provided with a series of marginal down-

wardly-depending pipes communicating with said tank, a horizontally-disposed pipe adapted to rest upon the bottom of the casing and communicating with said vertically-depend- ing pipes, a partition of vertical pipes communicating at their upper ends with said tank and at their lower ends with a branch of said horizontally-disposed pipe, and a perforated lining adjacent to the outer faces of said pipes, as set forth.

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

FORREST V. DETWILER.

Witnesses:

JAS. W. DRAPE,

J. LEONARD DETWILER.