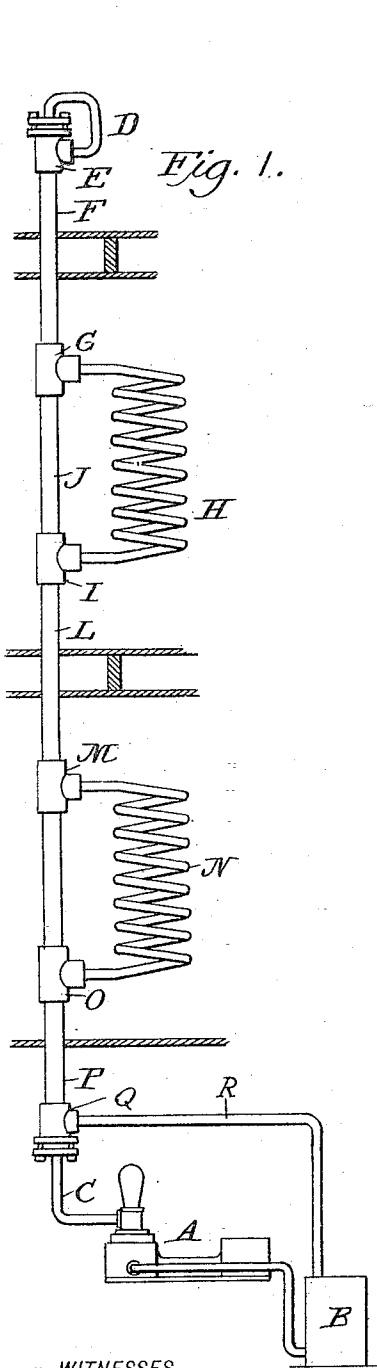


P. R. McCrary.
CIRCULATING APPARATUS FOR FLUIDS.

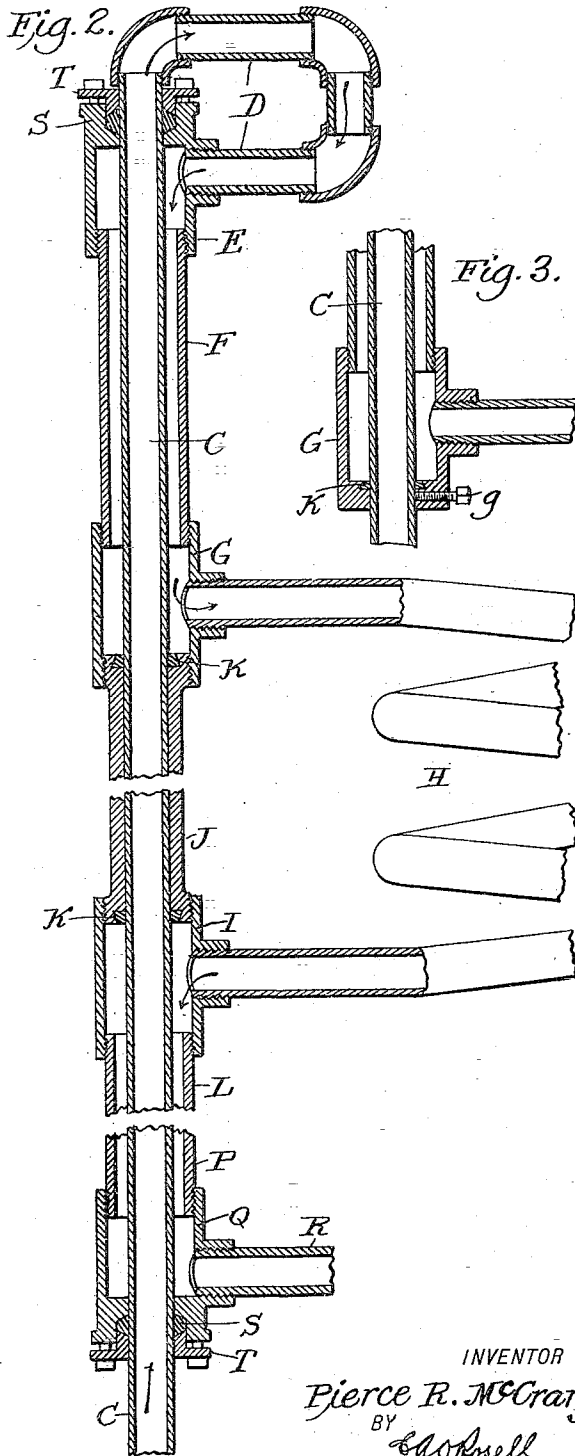
APPLICATION FILED AUG. 28, 1906. RENEWED MAY 20, 1914.

1,124,160.

Patented Jan. 5, 1915.



WITNESSES
James R. Duhamel,
William N. MacLean



INVENTOR
Pierce R. McCrary
BY
C. H. Howell,
ATTORNEY

UNITED STATES PATENT OFFICE.

PIERCE R. McCRARY, OF NEW YORK, N. Y.

CIRCULATING APPARATUS FOR FLUIDS.

1,124,160.

Specification of Letters Patent.

Patented Jan. 5, 1915.

Application filed August 28, 1906, Serial No. 332,386. Renewed May 20, 1914. Serial No. 839,898.

To all whom it may concern:

Be it known that I, PIERCE R. McCRARY, a citizen of the United States of America, and a resident of New York, N. Y., have invented certain new and useful Improvements in Circulating Apparatus for Fluids, of which the following is a specification.

This invention relates to apparatus for circulating fluids and is more especially adapted for use in connection with refrigerating apparatus where brine is forced through a series of distributing pipes or coils located at different points, at which the cooling effect of the brine is utilized.

One object of my invention is to obviate the necessity of two independent pipe lines; another is to equalize the temperature of the liquid passing through the distributing pipes.

In the accompanying drawing Figure 1 is a view in elevation of a system of piping embodying my invention. Fig. 2 is a vertical section on a larger scale showing details of construction. Fig. 3 is a sectional detail showing a modification.

In the drawing is shown a circulating pump A, connected with a brine tank, B, and with a supply conduit or riser C through which brine is forced from the tank B by the pump to the upper part of a building. At the upper end of the riser C is a return bend D which connects the riser with a sleeve E. The sleeve E surrounds the conduit C and is connected by a pipe F with a sleeve G. The pipe F surrounds the conduit or riser so as to form an angular passage between the pipe and the riser. Thus it will be seen that the return conduit consists of the series of sleeves E, G, I, etc., the pipes F, L, P, etc., and the coils or distributing means H, N, etc. A refrigerating coil, H, is connected with an outlet in the sleeve G, and the other end of said coil is connected with an inlet in the sleeve I. The sleeves G and I are similar in all respects. In the construction shown in Figs. 1 and 2, a spacing and supporting thimble J is screwed into the adjacent ends of the sleeves G, and I. The thimble J fits tightly around the riser C, and a packing K is shown, interposed between the riser C and the thimble to insure a tight joint. The sleeve I is connected by the pipe L and sleeve M with the next coil N (Fig. 1), and the coil N is connected through the sleeve O and the pipe P

to the sleeve Q, from which the pipe R leads to the tank B. The sleeves at the upper and lower ends of the riser are provided with packings S secured in place by followers T.

In Fig. 3 is shown a modification in which the thimbles between the sleeves are dispensed with. In this construction the adjacent ends of the sleeves of each pair are apertured to fit the riser closely and the sleeves are supported thereon by the screws g.

As will be understood, there may be any practicable number of distributing pipes or coils in the apparatus, all connected in substantially the manner described by means of sleeves and communicating pipes, the sleeves of each coil being closed at adjacent ends, so that the liquid is forced through the coils.

Although my invention is mainly designed for use in a refrigerating apparatus it is applicable to other uses such as hot water heating. In some of such uses slight modifications may be necessary and which will readily suggest themselves to those skilled in the art.

I have described and illustrated a vertical system of distribution, but it is obvious that the advantages of my system would also be obtained in a horizontal system of distribution.

On account of the fact that the liquor from the pump has to pass through sleeves containing liquor of progressively decreasing temperature, the refrigerating effect of the various coils is maintained at a minimum of variation.

In place of single distributing pipes between each pair of sleeves a plurality could also be used without departing from the spirit of the invention.

What I claim as new is:

1. In a circulating apparatus for fluids, the combination of a supply conduit and a return conduit consisting of a series of sleeves surrounding the former, coils connected with said sleeves and pipes connecting the sleeves and completing the return conduit.

2. In a circulating apparatus for fluids, a supply conduit and a return conduit, consisting of a series of sleeves, surrounding said supply conduit and arranged in pairs, each pair of sleeves being connected by distributing means, and one sleeve of each pair

being connected with the adjacent sleeve of the next pair by a pipe surrounding said supply conduit.

3. In a circulating apparatus for fluids
5 the combination of a circulating pump, a continuous supply conduit distributing means and a return conduit consisting of an end sleeve surrounding the supply conduit, additional sleeves surrounding the supply
10 conduit, the sleeves being arranged in pairs and one sleeve of each pair being connected with the adjacent sleeve of the next pair by a pipe surrounding said conduit.

4. In a circulating apparatus for fluids,
15 the combination of a circulating pump, a supply conduit, a return conduit consisting

of sleeves surrounding the supply conduit and arranged in pairs, the sleeves of each pair being connected by distributing means, and one sleeve of each pair being connected
20 with the adjacent sleeve of the next pair by a pipe surrounding said supply conduit, and thimbles on said supply conduit which engage the sleeves of each pair and support said sleeves in position and prevent direct
25 communication between them.

Signed at New York this 14th day of Aug. 1906.

PIERCE R. McCRARY.

Witnesses:

C. A. O. ROSELL,

D. D. LOVELACE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."