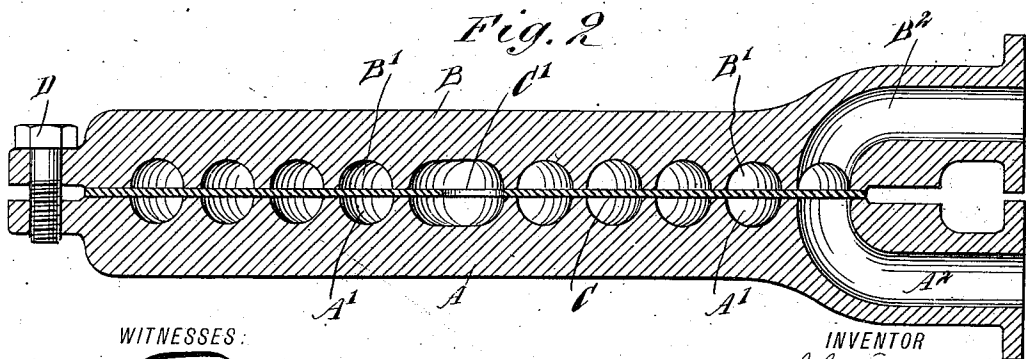
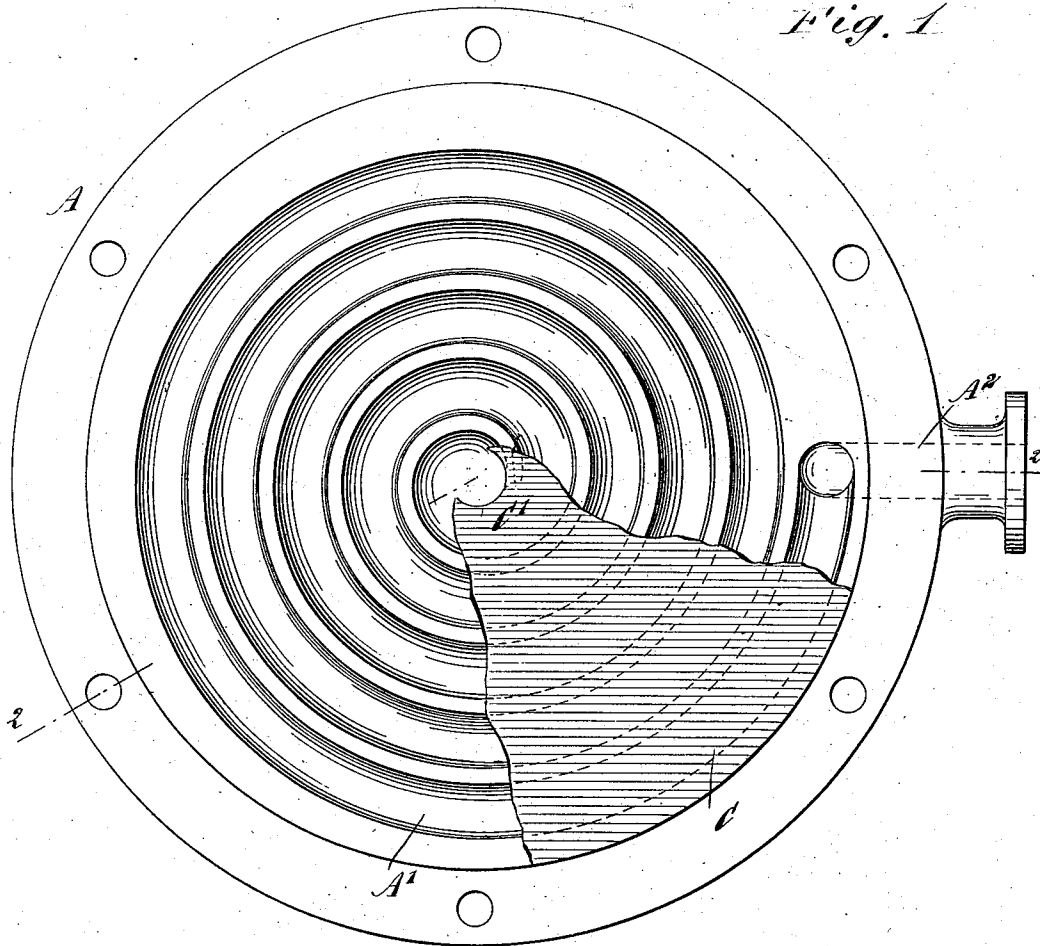


(No Model.)

J. E. KOESTER.
HEATING AND COOLING COIL.

No. 576,859.

Patented Feb. 9, 1897.



WITNESSES:

C. Nixon
Geo. E. Koester

INVENTOR

J. E. Koester
BY *[Signature]*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JULIUS EDWARD KOESTER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF
TO AUGUST H. BLANCK AND WILLIAM DANNHEIM, OF SAME PLACE.

HEATING AND COOLING COIL.

SPECIFICATION forming part of Letters Patent No. 576,859, dated February 9, 1897.

Application filed April 13, 1896. Serial No. 587,328. (No model.)

To all whom it may concern:

Be it known that I, JULIUS EDWARD KOESTER, of New York city, in the county and State of New York, have invented a new and Improved Heating and Cooling Coil, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved heating and cooling coil which is simple and durable in construction, more especially designed for heating or cooling liquids and arranged to permit of conveniently cleaning the coil to remove sediment, &c.

The invention consists of a coil comprising grooved sections and a division-plate or partition separating the grooved sections and having an opening for connecting the adjacent ends of the grooves with each other to cause the liquid to first pass through the groove in one section and then through the groove in the other section.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a plan view of the bottom section with part of the division-plate in place, and Fig. 2 is a sectional side elevation of the improvement on the line 2 2 of Fig. 1.

The improved coil is provided with two sections A and B, and a division-plate or partition C, placed between the two sections to separate the same, the sections being connected with each other by suitable bolts D for clamping the division-plate in position between the two sections.

In the section A, on the face next to the division-plate C, is formed a groove A', preferably made spiral, as indicated in Fig. 1, the outer end of the groove being connected with an inlet-opening A², adapted to connect with the liquid-supply. The other section B is formed on its inner or under face with a similar groove B', and the inner ends of the two grooves A' B' are connected with each other

by an opening C', formed in the division or partition plate C. The outer end of the groove B' leads to an outlet B², connected with a discharge-pipe.

Now it will be seen that by the arrangement described the liquid entering the inlet A² can readily flow through the spiral groove A' to the middle or center of the said section A, to then pass through the opening C' into the inner end of the groove B', and then pass along the same in an outward direction to finally pass into the outlet A² and through the discharge-pipe. If desired, the liquid can pass in a reverse direction—that is, first circulate through the section B and then out through the section A.

In order to clean the coil, the bolts D are removed and the sections taken apart to expose the faces of grooves A' and B', so that said grooves can be readily cleaned of sediment and other impurities. The partition-plate C can be readily washed to remove any impurities adhering thereto. It will be seen that this coil is very simple in construction, can be readily cleaned, and subjected to a high or low temperature, so as to heat or cool the liquid flowing through the coil. It is further evident that three, four, or more sections may be connected with each other, with intervening plates to circulate the liquid through a desired number of connected grooves.

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

1. A coil, comprising two or more grooved sections, and a division-plate or partition separating said sections and having an opening for connecting the adjacent ends of the grooves with each other, and causing the liquid to first flow through the groove in one section and then through the groove in the other section, substantially as shown and described.

2. A coil, comprising two or more grooved sections each formed on its face with a continuous groove leading to an inlet or outlet, and a division-plate or partition between the sections for separating the grooves, said division-plate being formed with an opening for connecting adjacent ends of the grooves

with each other, substantially as shown and described.

3. A coil comprising two or more sections provided with grooves in their opposing faces, a division-plate or partition separating said sections and located between said opposing faces, said division-plate being provided with an opening leading from the groove of one section to that of the adjoining section, as and for the purpose set forth.

4. A coil comprising two or more sections provided with continuous spiral grooves in their opposing faces, a division-plate or partition located between said opposing faces and provided with a transverse aperture leading from the groove of one section to that of adjoining section, the groove being provided at a distance from said connecting-aperture, with openings adapted to serve as an inlet

and an outlet respectively, as and for the purpose set forth.

5. A coil comprising two or more sections provided with continuous spiral grooves in their opposing faces and openings at the outer ends of said grooves, said openings being adapted to serve as an inlet and an outlet respectively, and a division-plate or partition located between said grooved faces of the sections and provided with an approximately central aperture leading from the inner end of the groove in one section to the inner end of the groove in the adjoining section, as and for the purpose set forth.

JULIUS EDWARD KOESTER.

Witnesses:

AUGUST H. BLANCK,
WILLIAM DANNHEIM.