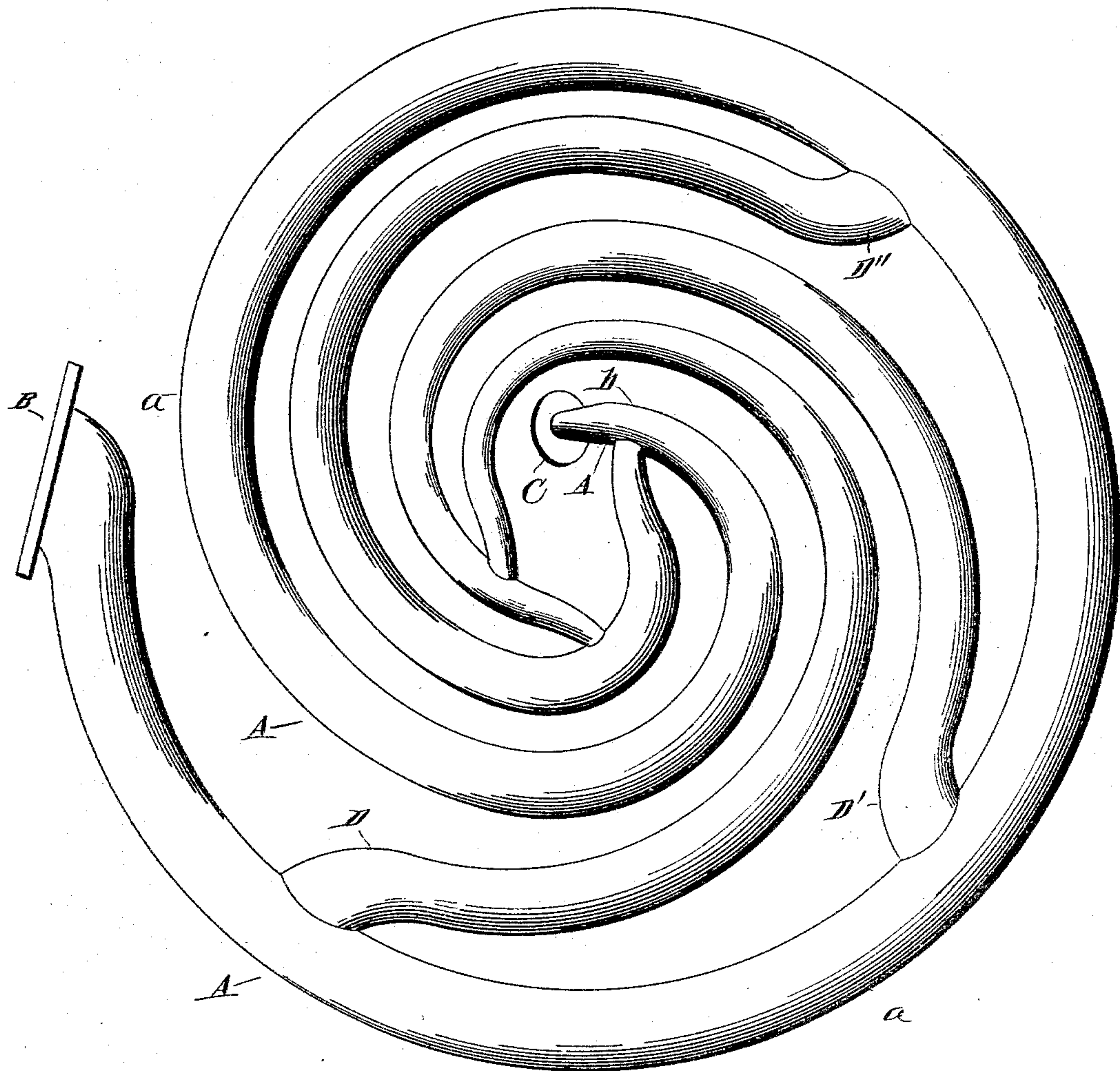


(No Model.)

L. F. HAUBTMAN.
STEAM HEATING COIL.

No. 412,088.

Patented Oct. 1, 1889.



Witnesses
C. B. Taylor
Phillips

Inventor
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UNITED STATES PATENT OFFICE.

LEON FRANÇOIS HAUBTMAN, OF NEW ORLEANS, LOUISIANA.

STEAM-HEATING COIL.

SPECIFICATION forming part of Letters Patent No. 412,088, dated October 1, 1889.

Application filed April 8, 1889. Serial No. 306,373. (No model.)

To all whom it may concern:

Be it known that I, LEON FRANÇOIS HAUBTMAN, a citizen of the United States, and a resident of New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Steam-Heating Coils; 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 drawing, and to letters or figures of reference marked thereon, which form a part of this specification.

The figure of the drawing is a representation of the invention.

This invention has relation to steam-coils for heating or evaporating liquids in open or closed vessels; and it consists in the novel construction and combination of parts, as hereinafter set forth.

When a heating-coil is made of one continuous piece of pipe, its action, especially when of large size, is defective in that the steam entering at one end of the coil and going out at the other end has a very long distance to travel, sometimes in large pans as much as two hundred feet, and the steam-pressure required to obtain a useful effect is very great and expensive as to fuel. Furthermore, the action of the steam is not perfect, as it becomes condensed before it reaches half-way through the coil.

In the accompanying drawing, illustrating this invention, the letter A designates the main coil extending from the inlet at B to the outlet at C near the center. This main coil A consists of a large circularly-disposed outer pipe *a*, which is continued in the spiral involute *b*, which gradually but somewhat quickly increases its distance from the outer portion *a*, as it turns toward the inner or outlet end. The outer circle of the main pipe is the main steam-pipe, and this pipe, after acting as the steam supply or distributor to the involute branch pipes, terminates in the part *b*, which is the main condensed water-pipe.

Connected to the inside wall of the main coil in its circular portions *a* are the outer or

inlet ends of the branch coils or involutes D D' D'', which are arranged in series, their junctions with the main supply-coil *a* being at regular distances apart, as indicated in the drawing. It will thus appear that the branch coil D'' leaves the main portion *a* of the outer supply-coil farther from its inlet than the branch coil D', the latter leaving said supply-coil farther from its mouth than the branch coil D. These branch coils or involutes occupy the interval between the outer portion *a* and its involute extensions *b*, and in order that these branch involutes may have approximate equal length they are joined to each other, respectively and in order, at their discharging ends, the last involute branch D'' being joined to and discharging directly into the discharge end—a condensation portion of this involute extension *b*—of the main coil.

The coil so constructed when supplied with steam has a very even and uniform action, and is designed to do very good and effective work with but little expenditure of fuel. The coil, furthermore, on account of its braced construction, has great strength and durability.

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

The steam-heating coil consisting of the main outer pipe-coil *a*, having connected therewith at regular intervals apart at their inlet ends the branch involutes D D' D'', the involute continuation *b* of the said main pipe forming the main condensing-pipe, the branch involute D'' connecting with the involute continuation *b*, the involute D' connecting with involute D'', and involute D connecting with involute D' about centrally of the plane of the main pipe-coil, substantially as set forth.

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

LEON FRANÇOIS HAUBTMAN.

Witnesses:

J. W. DAVIS,
E. A. DECKBAR.