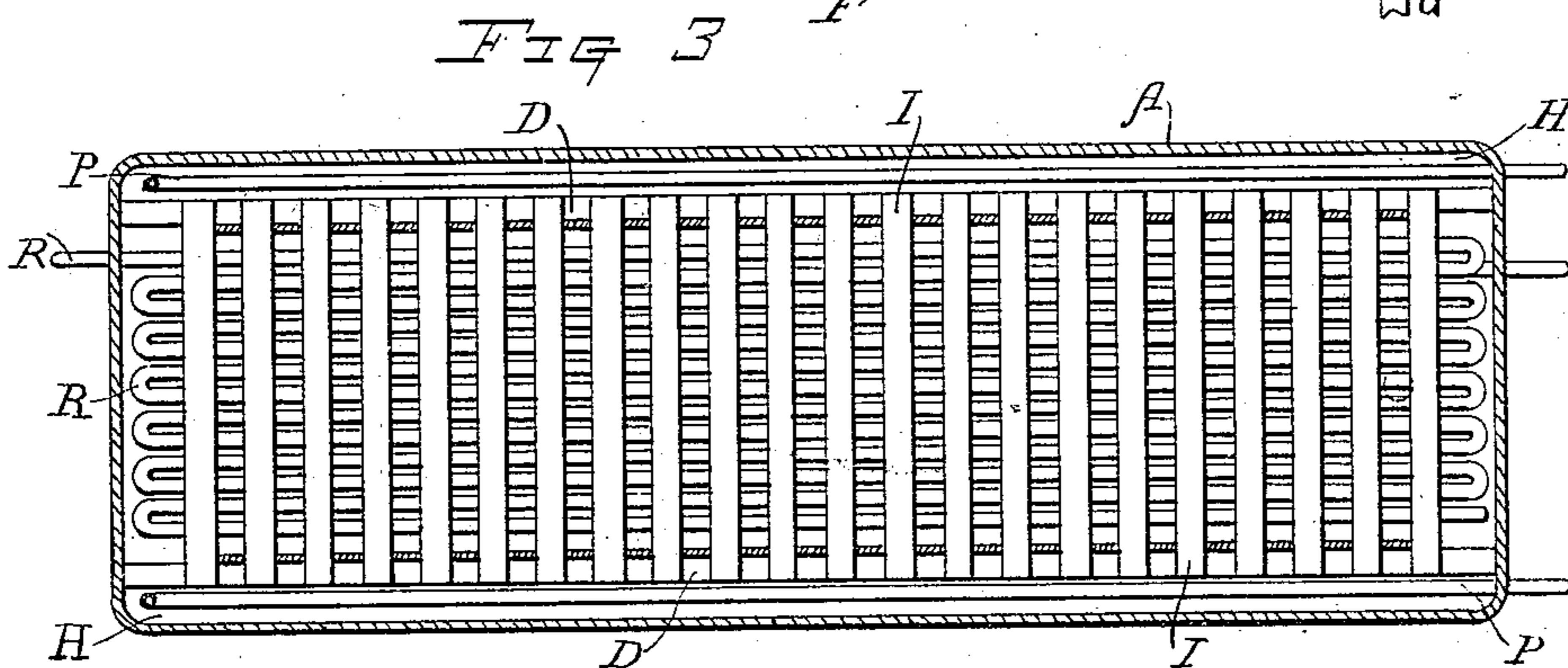
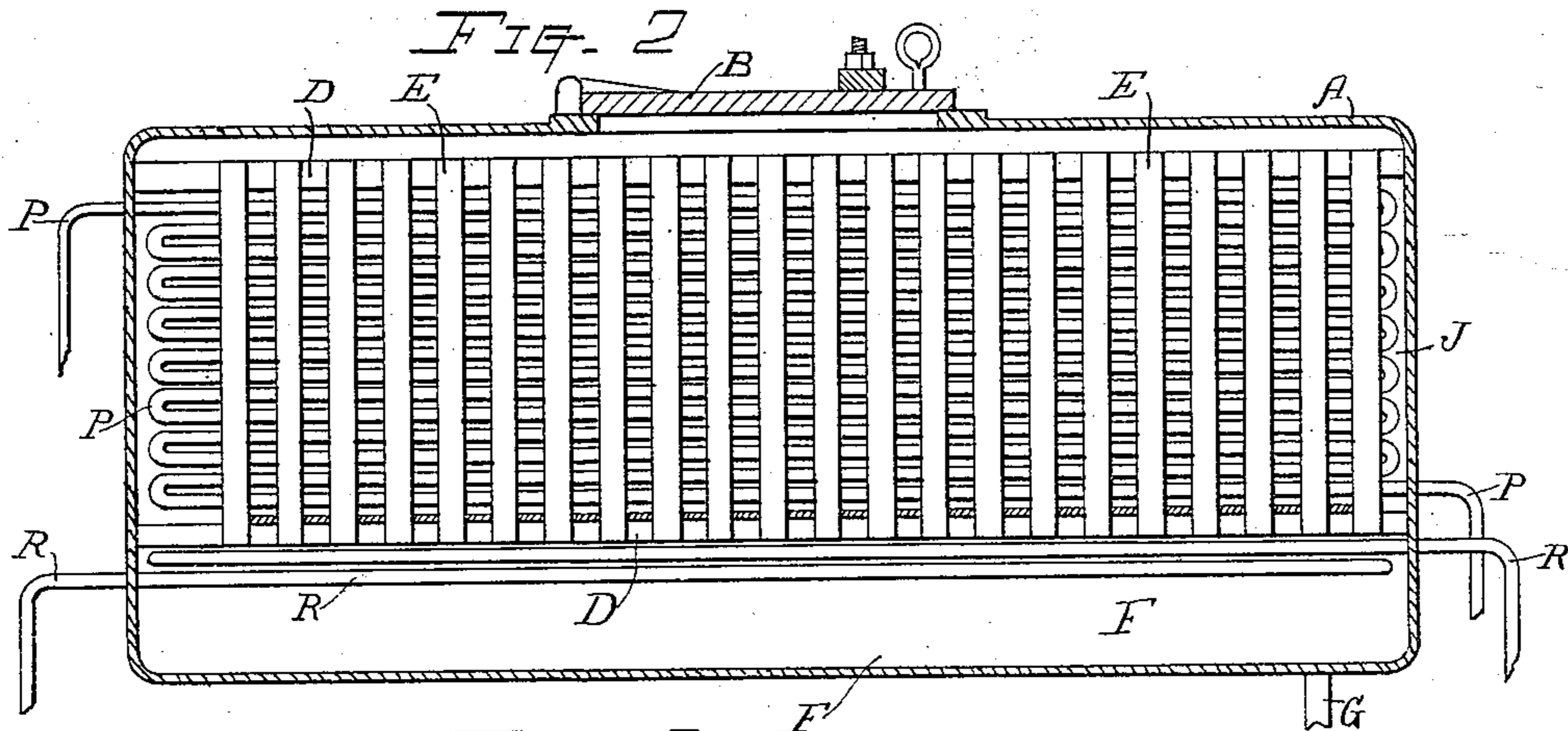
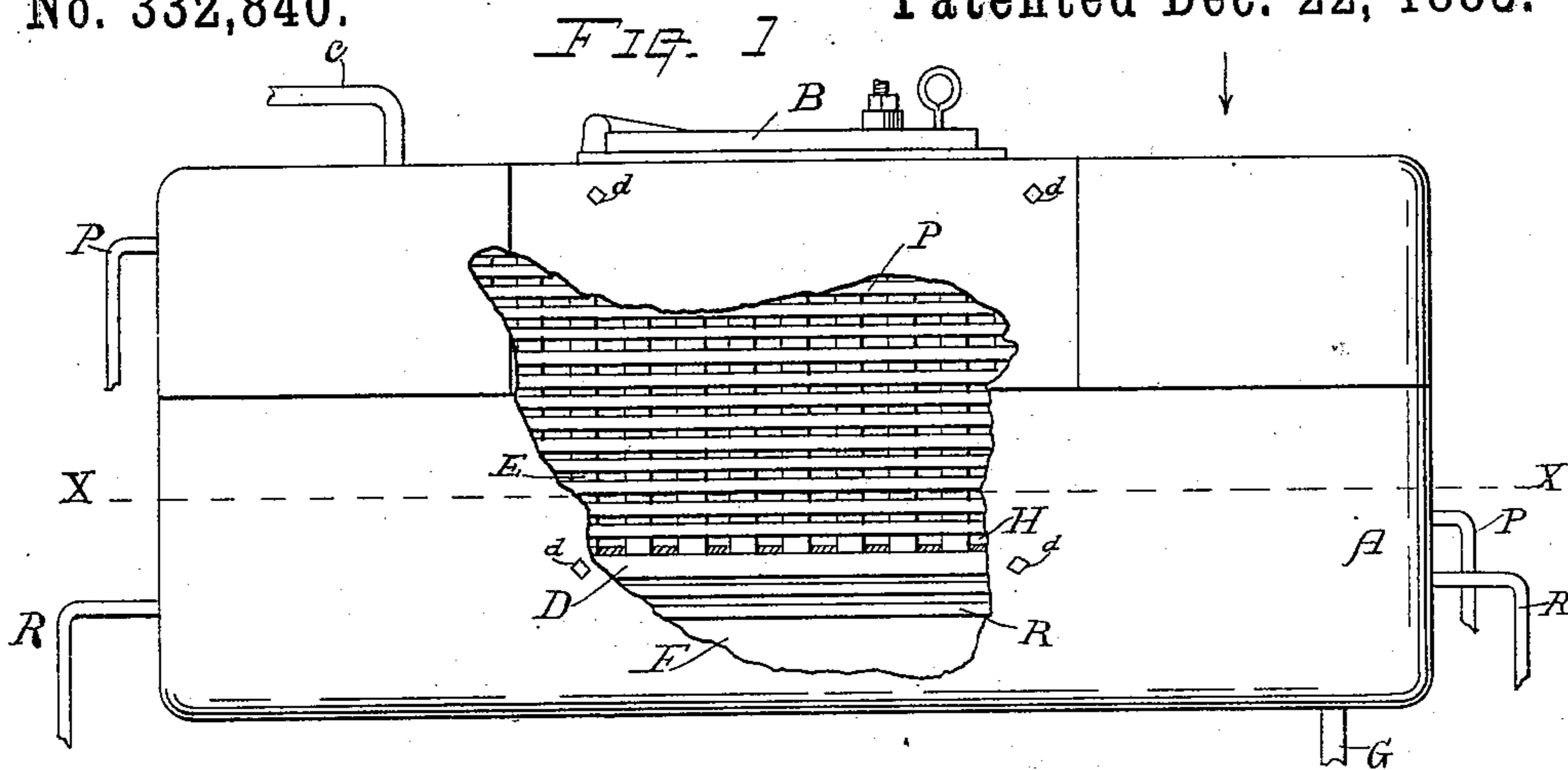


(No Model.)

J. J. SAWIN.
TREATING LEATHER STOCK WITH NAPHTHA TO EXTRACT OILS
THEREFROM.

No. 332,840.

Patented Dec. 22, 1885.



WITNESSES;

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UNITED STATES PATENT OFFICE.

JAMES J. SAWIN, OF WORCESTER, MASSACHUSETTS.

TREATING LEATHER-STOCK WITH NAPHTHA TO EXTRACT OILS THEREFROM.

SPECIFICATION forming part of Letters Patent No. 332,840, dated December 22, 1885.

Application filed July 20, 1885. Serial No. 172,177. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. SAWIN, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and Improved Apparatus for Treating Leather-Stock with Naphtha to Extract Oils Therefrom; and I do hereby declare that the following is a full, clear, and exact description thereof, which, in connection with the drawings making a part of this specification, will enable others skilled in the art to which my invention belongs to make and use the same.

My invention relates to an improved apparatus for treating leather-stock with naphtha, and for drying leather-stock so treated in such a manner that the vapor thrown off from the leather by the drying process will be condensed and recovered; and my invention consists in certain novel features of construction of the apparatus, to be hereinafter fully described, and the nature thereof indicated by the claims.

Referring to the drawings, Figure 1 represents a side elevation of my improved apparatus, a portion of the side being broken away to show the interior arrangement. Fig. 2 is a central vertical longitudinal section through the parts shown in Fig. 1; and Fig. 3 is a horizontal longitudinal section on line *xx*, Fig. 1, looking in the direction of arrow, same figure.

In the accompanying drawings, the part marked A is a tank, made, in this instance, of rectangular shape, of plates of iron bolted together, and having an opening in the top part thereof of any suitable size, which opening is provided, in this instance, with a hinged cover, B, which can be securely bolted or fastened down. An inlet-pipe, C, extends through the top of the tank through which the tank can be filled after the cover B is closed. To the inner sides of the tank are secured, in this instance by means of bolts *d d*, beams D D, extending along the sides of the tank horizontally at the top thereof, and about one-quarter of the height of the tank from the bottom thereof to the beams D D are secured, in this instance, vertical cross pieces or bars E E, placed at a short distance apart, and so placed as to leave an open space or chamber, H, on each side of the tank, between the side of the tank and the cross-pieces E, the beams D D

forming the top and bottom of said chamber or space. Through the lower part of the tank, about one foot from the bottom thereof, a platform or open floor extends, as shown in Fig. 3, composed of the cross-pieces I, secured to or resting upon the lower beams, D, bolted, as before stated, to the sides of the tank. This floor divides the tank into two compartments—the upper part, J, or heating-chamber in which the bags or sacks containing the leather to be treated are placed, and the lower part, F, which I call the “cooling-chamber.” Around the sides of the tank in the upper compartment, J, extend coils of steam-pipes P. These pipes may extend horizontally, as shown in the drawings, or vertically up and down, if preferred. They are placed in the space H, before described, between the sides of the tank and the lattice-work formed by the beams D and cross-pieces E. The steam-pipes P may extend all around the tank A, or only on opposite sides thereof, as desired; but it is best to have them extend from the top to the bottom of the compartment J, as shown in Fig. 2, in order that a uniform heat may be thrown out in all parts of said compartment. The lattice-work around the sides of the tank on the outside of the pipes P prevents the leather coming in contact with the hot steam-pipes and being burned or scorched. One end of the coils of pipes P extends through the upper part of the tank, through which steam is admitted, and the other end through the lower part of the tank or of the compartment J, as shown in the drawings. Directly beneath the floor or bottom of the upper compartment, J, in the upper part of the compartment F, extend coils of pipe R, which are substantially parallel to the bottom of the tank, as shown in the drawings. The ends of the coil extend through the sides of the tank, to allow of cold water being pumped or run into the coil R, and also drawn off from the coil. Through the bottom of the tank A an outlet-pipe, G, extends, to allow of the naphtha being drawn off from the tank. I prefer to have the coils of cold-water pipes R extend through the upper part of the chamber or compartment F; but they may extend through the middle part or in the lower part of said compartment F, if desired.

The operation of my improved apparatus

will be readily understood from the drawings, in connection with the above description, and is as follows: The leather-stock to be treated, generally contained in bags or sacks, is thrown
 5 into the upper compartment, J, of the tank, through the opening in the top of the tank. The bags or sacks rest upon the floor or platform in the lower part of the tank, before mentioned. After a sufficient number of bags have been
 10 placed in the compartment J the cover B is closed and fastened, the outlet-pipe G is also closed, and naphtha is admitted into the tank through the inlet-pipe C, filling the compartments F and J. After the naphtha has acted
 15 on the leather to extract the oil therefrom, which it holds in solution, it is drawn off from the tank through the outlet-pipe G, and steam is admitted into the pipes P, surrounding the upper compartment, J, which contains
 20 the leather acted on by the naphtha. At the same time cold water is admitted into the coil of pipes R, directly beneath the chamber J, and extending in the cooling-chamber F. The steam in the pipes P heats uniformly
 25 the air in the chamber J, causing the naphtha remaining in the leather-stock and bags to be evaporated. This naphtha-vapor is heavier than the air, and it therefore sinks and passes through the bottom of the chamber
 30 into the cooling-chamber F, which is kept cool by the cold water running through the pipes R, where the naphtha-vapor is condensed. The naphtha so condensed in the cooling-chamber F is drawn off through the
 35 outlet-pipe G and none of the naphtha is lost. I have shown in the drawings a tank of rectangular shape, having an opening in the top thereof; but I do not limit myself to such a shaped tank for carrying out my invention,
 40 for a square tank or a round tank may be used, if preferred, and the steam-pipes P, instead of extending only upon two sides of the upper compartment, J, as shown in the drawings, may extend around on all four sides, if
 45 preferred. The lattice-work forming the sides and bottom of the upper compartment, J, may be made in any other form desired, having the cross-pieces run slanting or angular or crossing each
 50 other. The main object of this lattice-work is to prevent the leather-stock coming in direct contact with the steam-pipes. Any equivalent device may be used in lieu thereof, and the lattice-work may be dispensed with
 55 entirely, the upper compartment being formed by the sides of the tank itself, and a perforated or opened partition or division running through the lower part of the tank, to form the floor upon which the leather-stock rests or is
 60 placed. My apparatus may be used, if preferred, simply as a drying-tank, the leather-stock having been first immersed in naphtha in some other suitable tank, and taken there-
 65 from and placed in the drying-chamber J of my apparatus, when the operation of drying

and condensing the naphtha will be the same as previously described, after the naphtha has been drawn off from my apparatus.

The main feature of my invention is the
 70 combining, in a single tank or receptacle, of a heated chamber for drying the leather-stock, and a cooling-chamber for condensing the naphtha evaporated from the stock; and I am
 75 enabled to do this by arranging the steam-pipes around the sides of the drying-chamber, as described, and the cold-water pipes directly under the drying-chamber in the cooling-chamber.

I have described my improved apparatus
 80 when used for treating leather stock; but I do not wish to limit myself to this, for my apparatus can also be used for treating wool-stock or other stock for the purpose of extracting
 85 oil therefrom, and for drying the same and condensing the surplus naphtha.

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

1. In a tank for treating leather or other
 90 stock with naphtha, the combination, with the heating-chamber for drying the stock, having coils of steam-pipes extending around two or more sides of said chamber, of the cooling-chamber having a coil or coils of cold-water
 95 pipes, substantially as and for the purpose stated.

2. In a tank, A, the combination, with the heating-chamber J, having coils of steam-pipes
 100 P extending around one or more sides of said chamber, for the purpose stated, of the cooling-chamber F, having coils of cold-water pipes extending therein, for the purpose stated, substantially as set forth.

3. In a tank, A, the heating-chamber J, hav-
 105 ing a lattice-work extending around the sides thereof, and steam-pipes extending between said lattice-work and the sides of the tank, in combination with a cooling-chamber, F, having coils of cold-water pipes R extending
 110 therein, and an opened lattice-work or floor above said pipes, separating the said cooling-chamber F from the heating-chamber J, substantially as described, and for the purpose stated.

4. A tank, A, constructed with the heating-
 115 chamber J, having steam-pipes P, for the purpose stated, and a cooling-chamber, F, having cold-water pipes R, for the purpose stated, substantially as set forth.

5. A tank, A, having one or more openings
 120 in the top thereof, provided with covers, an outlet-pipe, G, an inlet-pipe, C, coils of steam-pipes P in the upper part of the tank, and coils of cold-water pipes R in the lower part
 125 of the tank, the ends of said coils projecting through the sides or ends of the tank, substantially as set forth.

JAMES J. SAWIN.

Witnesses:

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 FRED. W. SMITH.