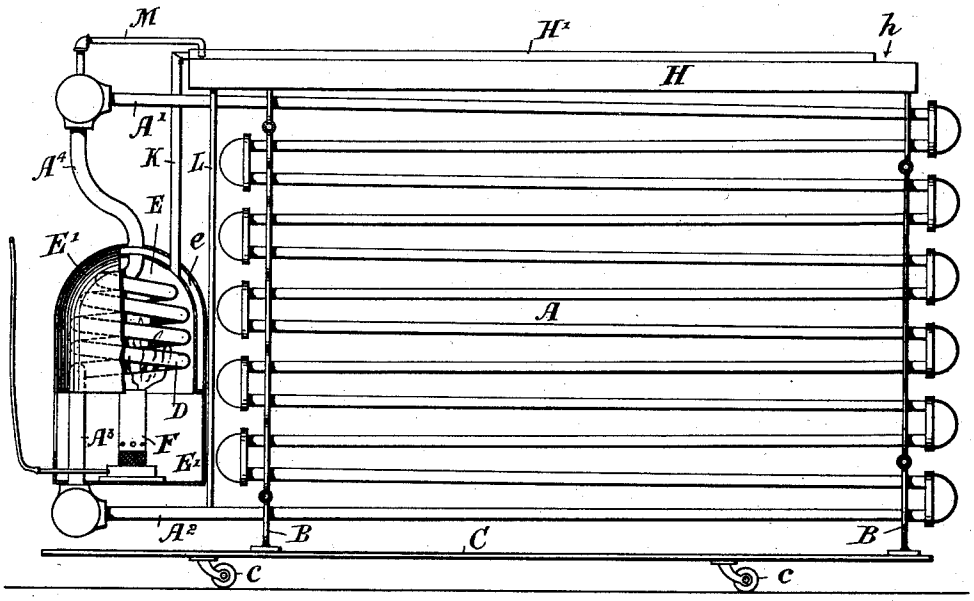
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A. WALKER.

HEATING APPARATUS.

No. 375,662. Patented Dec. 27, 1887.

Fig. 1.



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FIG. 2

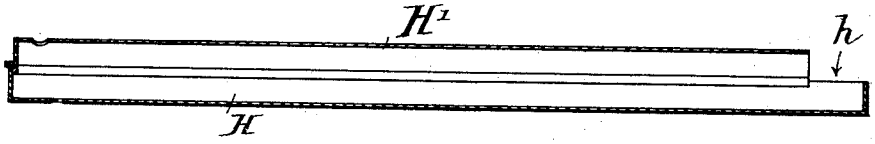
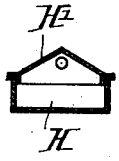


FIG. 3



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UNITED STATES PATENT OFFICE.

ALEXANDER WALKER, OF MONTREAL, QUEBEC, CANADA.

HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 375,662, dated December 27, 1887.

Application filed July 6, 1886. Renewed September 10, 1887. Serial No. 249,380. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER WALKER, of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have invented certain new and useful Improvements in Heating Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention has reference to that class of heating apparatus in which coal-oil or gas is used as the heat-generator, and which are employed in separate rooms independently of the system of heating in any building, and it is specially applicable in cases where there is no chimney-outlet.

The invention may be described as consisting in the addition to a coil such as is commonly used in heating systems of a supplementary coil connected to same by feed and return pipes, a heater for such supplementary coil, an expansion-tank, into which water is fed, connected with main coil, and a pipe through which products of combustion are taken from fire-chamber into said tank above water-space, the whole being mounted on a movable stand, so as to be portable.

For full comprehension of the invention reference must be had to the annexed drawings, in which Figure 1 shows a side view, partly broken away, of the appartus; and Figs. 2 and 3, respectively, longitudinal and transverse vertical sectional details enlarged of expansion-tank.

A is an ordinary coil of pipes carried in standards B B, secured to the plate or stand C, running on casters or wheels *c c*.

A′ A^2 are the terminal pipes of the coil, A^2 being connected to a pipe, A^3, communicating with a coil, D, arranged within a chamber, E, over which is placed an outer chamber, E′, leaving between E and E′ a water-jacket, *e*, and forming at its lower end a stand for the heater F, to be presently described. A pipe, A^4, taken from the coil D or water-jacket *e*, connects it with the main pipe A′, thus completing the circulation.

The heating medium may be a Bunsen or "atmospheric" burner connected with any source of gas-supply, or, where gas is wanting, an oil-lamp of sufficient heating-power.

H is an expansion-tank set above and extending the full length of the coil A, H′ being a cover, V-shaped, so as to leave a space above the surface of the water contained in it, this cover being somewhat shorter than H, so as to leave an opening, *h*. The other end of this tank H is connected by a pipe, K, with the inside of the chamber E, and a pipe, L, also connects it with the pipe A^2. An air-tube, M, is inserted in the top of pipe A′ and has its other end let into cover H′ of tank H.

The operation or working of the apparatus is as follows: The coils A and D are filled through the opening *h*, tank H, and pipe L, and the burner F being lighted the water in D is heated, starting the circulation, passing off by pipes A^4 and A′ and returning by pipes A^2 and A^3. The products of combustion pass from the chamber E through the pipe K into the space between the water in H and the under side of the cover H′, and, the water being heated, these products of combustion will be purified, and if not wholly taken up by the water will pass off as vapor.

Having thus described my invention, I beg to state that what I claim is as follows:

The combination, with a hot-water-circulation coil, of a supplementary coil connected to same by feed and return pipes, a heater for such supplementary coil, an expansion-tank into which water is fed, a pipe connecting said tank with main coil, and a pipe through which products of combustion are taken from fire-chamber into said tank above water-space, the whole being mounted on a movable stand, all as herein set forth, and for the purposes described.

ALEXANDER WALKER.

Witnesses:
OWEN W. EVANS,
W. MCFEAT.