No. 886,305. PATENTED APR. 28, 1908.

H. T. OFFTERDINGER.

PORTABLE HOT FLUID HEATING APPARATUS.

APPLICATION FILED APR. 2, 1906.

Fig. 1.

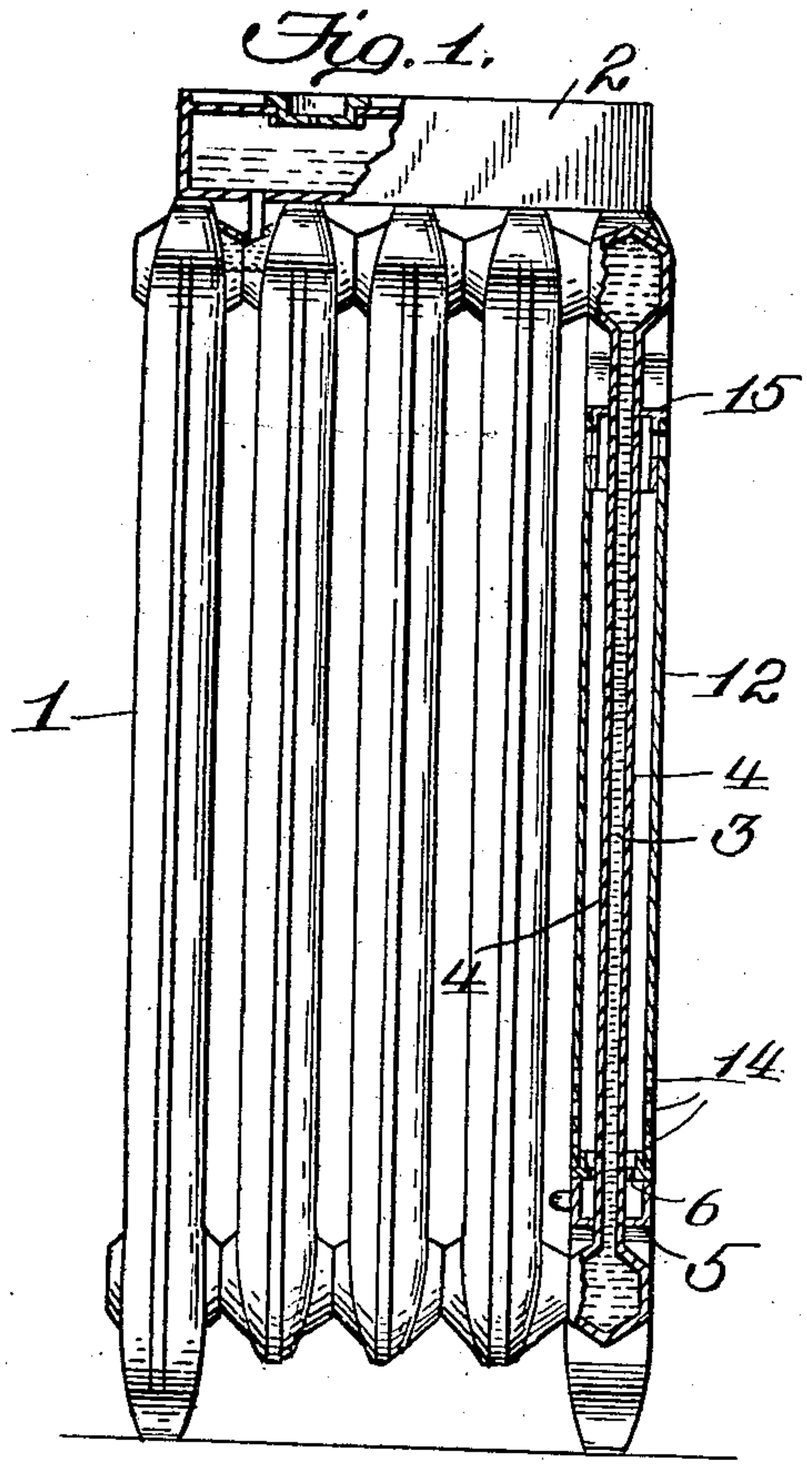

Fig. 2.

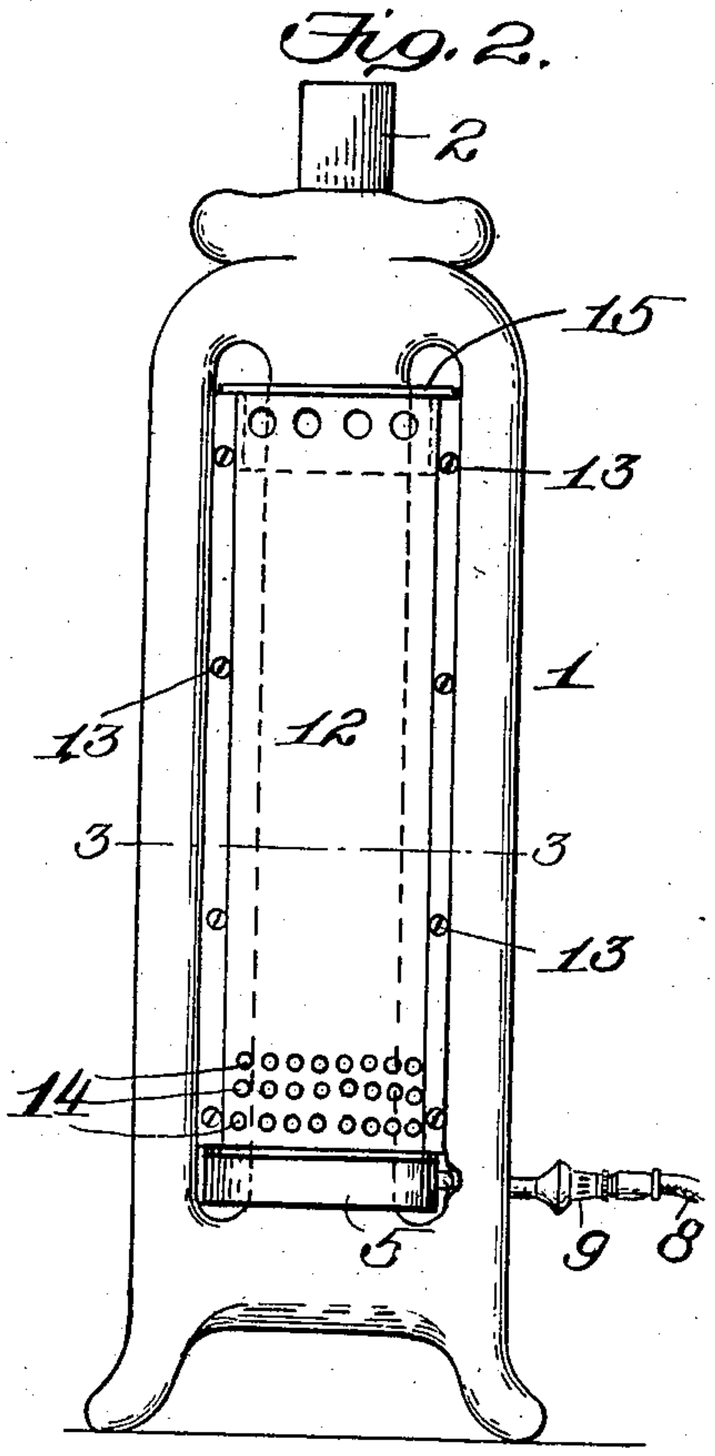

Fig. 3.

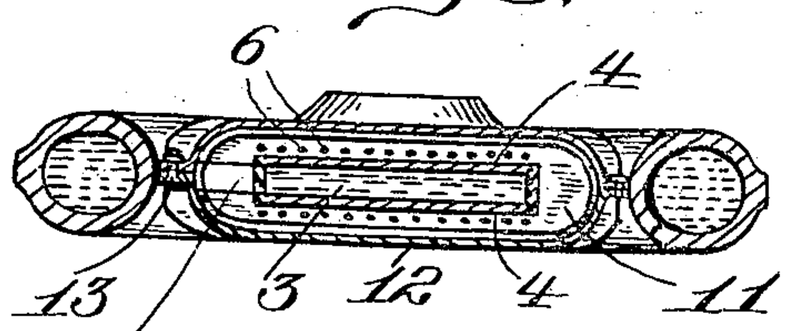

Fig. 4.

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UNITED STATES PATENT OFFICE.

HENRY THEODORE OFFTERDINGER, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO OFTE RADIATOR COMPANY, OF WASHINGTON, DISTRICT OF COLUMBIA, A CORPORATION OF VIRGINIA.

PORTABLE HOT-FLUID HEATING APPARATUS.

No. 886,305. Specification of Letters Patent. Patented April 28, 1908.

Application filed April 2, 1906. Serial No. 309,511.

To all whom it may concern:

Be it known that I, HENRY THEODORE OFFTERDINGER, a citizen of the United States, residing at Washington, District of Columbia, have invented new and useful Improvements in Portable Hot-Fluid Heating Apparatus, of which the following is a specification.

My invention relates to improvements in portable hot fluid heating apparatus, of the radiator type; that is to say, apparatus in which fluid is caused to circulate through a series of radiator sections, the combined sections making up the radiator being portable.

The object of the invention is to facilitate heating the circulating body of fluid in a manner and by a means associated with one of the columns or legs of the radiator.

Radiators of the type to which this invention is directed are chiefly, although not exclusively, useful to heat rooms or apartments, separate and apart from a permanent system designed to heat various rooms or apartments of a building. Such portable apparatus may be moved from place to place of a building, and used wherever there be a connection for fuel, such as gas from an ordinary gas fixture, or the like. In the uses for which such apparatus is ordinarily designed, it is a material consideration that the circulating body of fluid may be quickly and intensely heated, and it is also desirable that the radiator present the customary neat and ornamental appearance of such devices. Both considerations are fully met in an apparatus constructed according to my present invention.

With the foregoing objects in view, the invention consists in a portable hot water apparatus or radiator possessing the features hereinafter described and illustrated in the accompanying drawing.

That which is regarded as new will be set forth in the clauses of claim appended to the description.

In the accompanying drawing illustrating that which I regard as the best known embodiment of my invention—Figure 1 is a part elevation and part sectional view of a radiator provided with my invention; Fig. 2 is an end view; Fig. 3 is a horizontal sectional view; and Fig. 4 is a detail perspective of the burner.

In the said drawing the reference numeral 1 designates a hot water radiator which consists of numerous heat radiating columns through which the water is caused to circulate, and which, not being connected, with the stationary heating system may, if desired, be provided with an extension box or tank 2. In the drawing I have illustrated a radiator of the three-column type. One of the columns or legs, for instance the central leg of one end section of the radiator, is modified in its construction to present a tube 3 having opposite, parallel, relatively wide, closely associated walls 4, and connecting end walls, constituting a fluid passage communicating at its upper and lower ends with the circulation passages of the radiator structure, and characterized by the fact that the water which passes therethrough is compelled to assume the form of a film, the attenuated character of which is most susceptible of responding to the influence of heat applied to the tube, through which it passes, and which will be referred to as the heating tube. Combined with the heating tube, to surround the same, is a burner 5, the jet orifices 6 of which extend across and in close relation to the broad flat walls 4, of the heating tube. This burner is preferably, and as shown, of the Bunsen type, having a conduit 8 for the supply of fuel, such as gas or oil, and a regulable means 9 for the supply of atmospheric air.

The burner, in order that it may be combined with the heating tube to surround the same, is, in the preferable construction, provided at one end with removable plates, 10, which, when removed, leave the burner open-ended, in which condition it may, in vertical position, be inserted into the space between the heating tube 3 and an adjacent leg or column of the radiator, and then swung downward into horizontal position to embrace the heating tube as shown in Figs. 1, 2 and 3, the openings in the end of the burner permitting the accomplishment of this adjustment. When arranged in the horizontal, heating-tube-encircling position shown, the end plates are inserted to provide a continuous closed fuel passage or ignition chamber 11 within the burner.

Combined with the burner and surrounding the heating tube for the purpose of con-

fining the flame of the burner to exert its greatest efficiency upon the tube and the fluid passing therethrough, is a jacket 12, conforming substantially to the external configuration of the tube, and preferably rounded at its ends, and of cross-sectional dimension conforming to the like dimension, in one direction, of the column or columns of the radiator, so that when the burner and the jacket or chimney are combined together in relation to the heating tube, they are included in the space normally occupied by the radiator and present a structure which does not appreciably differ in appearance from the usual standard make radiator. They are also protected by the outer legs or columns of the radiator, and are therefore free from accident or injury, with which they might otherwise meet. In order that the chimney may be fitted, in combination with the burner, to surround the heating tube, the same is composed of two sections suitably connected together, as by means of bolts and nuts 13 as shown. When desired, the connection of the two sections of the chimney may be loosened and the chimney removed.

The chimney or jacket, at its lower end, adjacent the jet orifices of the burner, is provided with openings 14, to supply oxygen for combustion, and at its upper end is provided with a slip-cap 15, having openings to more or less register with and therefore more or less open or entirely close similar openings in the jacket, for the purpose of regulating the draft. The slip-cap may, like the jacket or chimney, be of sectional construction to enable it to be fitted to surround the heater tube.

The desirability of a portable hot water heating apparatus such as may be shifted from place to place, or installed in various situations, and the surrounding body of fluid of which may be quickly heated to accommodate emergencies, where stable or temporary, but efficient and quickly responding action is desired, has been felt, and the want is fully supplied by this invention in a simple manner, and one in which the fuel supplying and confining elements are included within the normal area of the radiator, protected from otherwise possible injury, and preserving the normal customary appearance of hot-water radiators.

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

1. A portable hot water radiator, one of the columns of which consists of relatively broad closely associated walls to compel the fluid to pass therethrough in a thin film, a burner having removable end plates whereby it is adapted to be positioned to surround said column, and a heat-confining jacket composed of sections connected together and arranged to surround said column.

2. A portable hot water radiator, one of the middle columns of the end section of which consists of relatively broad closely associated walls to compel the fluid to pass therethrough in a thin film, a burner combined with and surrounding said column at the lower end thereof, and a heat-confining jacket associated with said burner and surrounding said column, said burner and jacket being arranged within the normal area of the radiator and protected by the outside columns.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY THEODORE OFFTERDINGER.

Witnesses:
GEO. W. REA,
A. V. CUSHMAN