Aug. 19, 1924. 1,505,627

L. G. DE BELLESCIZE

FIREPLACE FOR DOMESTIC HEATING

Filed May 31, 1923

Fig. 1.

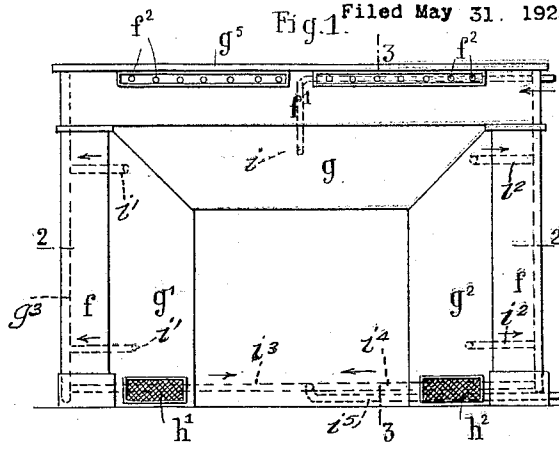


Fig. 3.

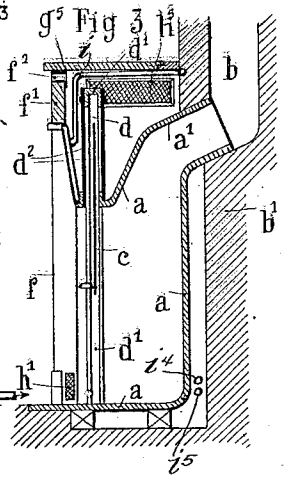


Fig. 2.

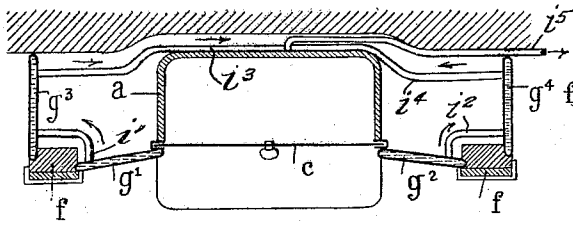


Fig. 4.

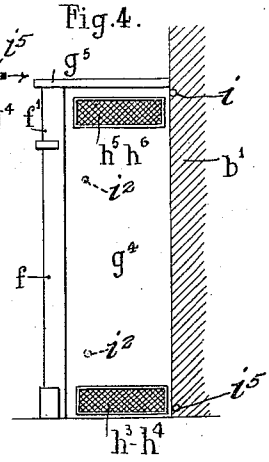


Fig 5

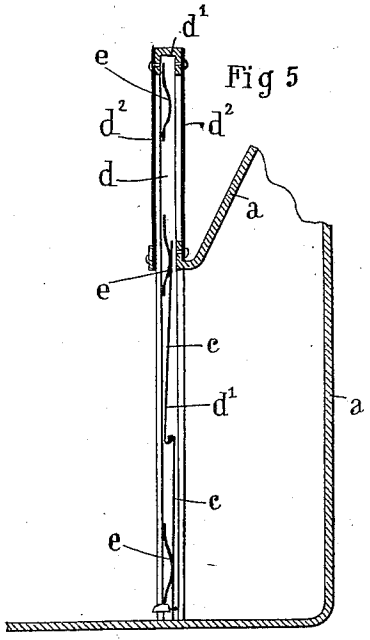
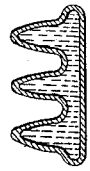


Fig. 6



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UNITED STATES PATENT OFFICE.

LÉON GONZAGUE DE BELLESCIZE, OF PARIS, FRANCE.

FIREPLACE FOR DOMESTIC HEATING.

Application filed May 31, 1923. Serial No. 642,684.

To all whom it may concern:

Be it known that I, LÉON GONZAGUE DE BELLESCIZE, citizen of the French Republic, residing at Paris, France, have invented certain new and useful Improvements in Fireplaces for Domestic Heating, of which the following is a specification.

This invention relates to fire places for domestic heating and is characterized by the fact that the frame casing members or walls of the fire place disposed around the grate and serving as the casing of a hot air radiator are formed as hollow metal radiating panels in which the water or steam from the boiler of a central heating installation may circulate.

The accompanying drawing illustrates by way of example one form of construction of the fire place according to the invention.

Figure 1 is a front elevation.

Figure 2 is a horizontal section on 2—2 of Figure 1.

Figure 3 is a vertical section on 3—3 of Figure 1.

Figure 4 is a side elevation corresponding with Fig. 1.

Figure 5 is a detail view to a larger scale.

Figure 6 is another detail view.

The fire place consists of a cast-iron body a open at the front and provided at the top with a flue a^1 through which the products of combustion escape. This flue a^1 terminates at the foot of a chimney or smoke shaft b provided in the wall b^1 a short distance in front of which, is the fire place.

The fire place a may be closed at the front by a screen c of sheet metal, formed in the known manner in one or more parts and accommodated, when raised, in a fluid tight chamber d. This chamber is adapted to prevent the smoke from passing into the interior of the casing of the fire place and is constituted by an iron frame of U-shape in section and of inverted U-shape in outline and by two sheet metal plates d^2 riveted to the upper transverse limb and along a certain length of the vertical limbs of the frame. The vertical limbs of this inverted U-shaped frame serve at the same time as guides for the screen c; they are provided internally with springs e (Fig. 5) which secure by pressure the raised screen at the required height.

The fire place casing comprises, on its front face, vertical uprights f and an upper mantel piece f^1, of masonry and marble, as usual, and hollow cast iron panels g, g^1, g^2, between the former and the body a. At the side faces, the fire place casing comprises hollow cast iron panels g^3, g^4. The heating fluid (vapor or liquid) is led in by conduit i in the upper panel in front of g, and then passes in the panels g^1, g^2 by the conduits i^1, i^2 connecting the panels g^1, g^2 to the lateral panels g^3, g^4. The heating fluid, after cooling leaves panels g^3, g^4 by conduits i^3, i^4, connected to a discharge header i^5.

The panels g^1, g^2, g^3, g^4 are provided at the bottom with openings fitted with gratings h^1, h^2, h^3, h^4 through which the air passes into the interior of the frame of the fire place. These gratings are removable for the purpose of cleaning. The air which is heated by contact, either with the panels g, g^1 or with the body a or with the two simultaneously, escapes at the top of the frame through holes f^2 provided in the mantel piece and through openings fitted with gratings h^5, h^6, provided at the top of the side panels g^3, g^4. The mantel board g^5 of marble is removable so as to permit of cleaning all the apparatus enclosed in the frame.

Instead of admitting air through the gratings h^1, h^2, h^3, h^4, air may be admitted from the floor, or from the interior of the space to be heated or from the outside. The panels g to g^5 may be provided, as illustrated in Fig. 6, with a corrugated inner surface for the purpose of increasing the heating surface.

The fire place above described has the advantage of rendering the radiators of the central heating installation invisible whilst retaining the usual appearance of the fire place; when the central heating is stopped it may be used for any kind of fuel; by reason of the fluid tightness and thinness of the walls of the grate surrounded by an air circulation it forms a small hot air radiator of high calorific efficiency.

By completely lowering the movable screen the admission of air into the grate may be reduced sufficiently to convert it into a true slow combustion stove. If however the central heating installation is in use, the hot water or steam circulates through the hollow panels; if the heating surface obtained is insufficient by reason of the cubic capacity to be heated supplementary radia-

tors of any suitable type may be placed between the fire place *a* and the casing. Finally if desired the two methods of heating may be used simultaneously.

It will be understood that the invention is not limited to the details of construction described and that it may be carried into effect according to any modification based on the same principle; for example the shape and arrangement of the fire place *a* may be modified as also those of the panels for the circulation of water. For example fins or the like may be provided on the outer surface of the fire place *a* for increasing the radiation surface, and the mounting of the screen enclosing the front opening of the fire place *a* may be modified.

What I claim is:—

1. A fire place for domestic heating, comprising a fire place body, a fire place casing adapted to form the outer casing of a hot air radiator, hollow metal panels provided in the walls of said casing, and means for circulating a heating fluid from the boiler of a central heating arrangement in said hollow metal panels.

2. A fire place for domestic heating, comprising a fire place body, a fire place casing adapted to form the outer casing of a hot air radiator, hollow metal panels constituting the side and front walls of said casing, and means for circulating a heating fluid from the boiler of a central heating arrangement in said hollow metal panels.

3. A fire place for domestic heating, comprising a fire place body, a fire place casing adapted to form the outer casing of a hot air radiator, hollow metal panels provided in the walls of said casing, air openings at the bottom of said panels, and means for circulating a heating fluid from the boiler of a central heating arrangement in said hollow metal panels.

4. A fire place for domestic heating, comprising a fire place body, a fire place casing adapted to form the outer casing of a hot air radiator, a fluid tight chamber at the front upper part of the said fire place body, adapted to prevent smoke from passing into the interior of the fireplace casing, hollow metal panels provided in the walls of said casing, and means for circulating a heating fluid from the boiler of a central heating arrangement in said hollow metal panels.

In testimony whereof I have signed my name to this specification.

LÉON GONZAGUE de BELLESCIZE.