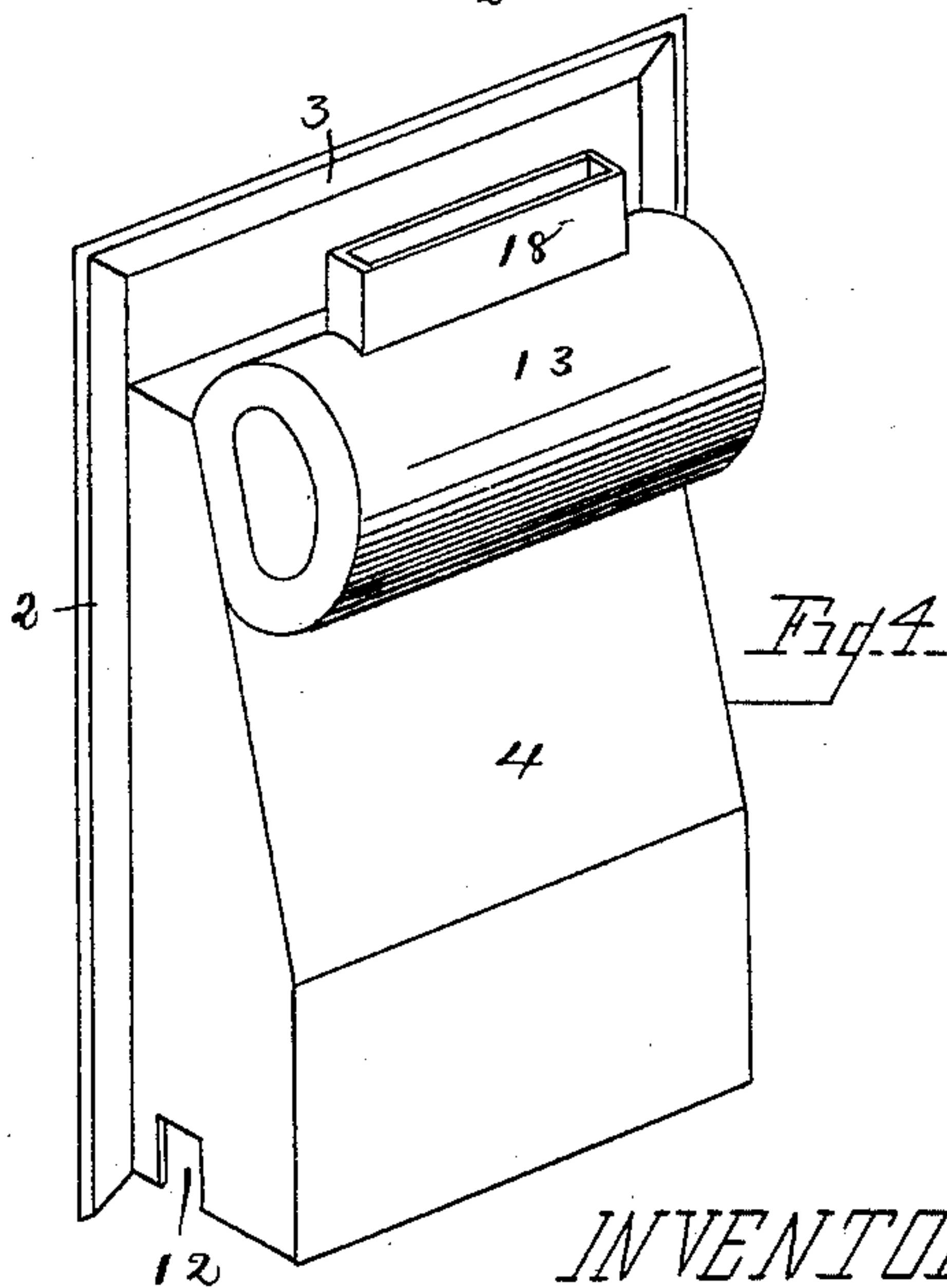
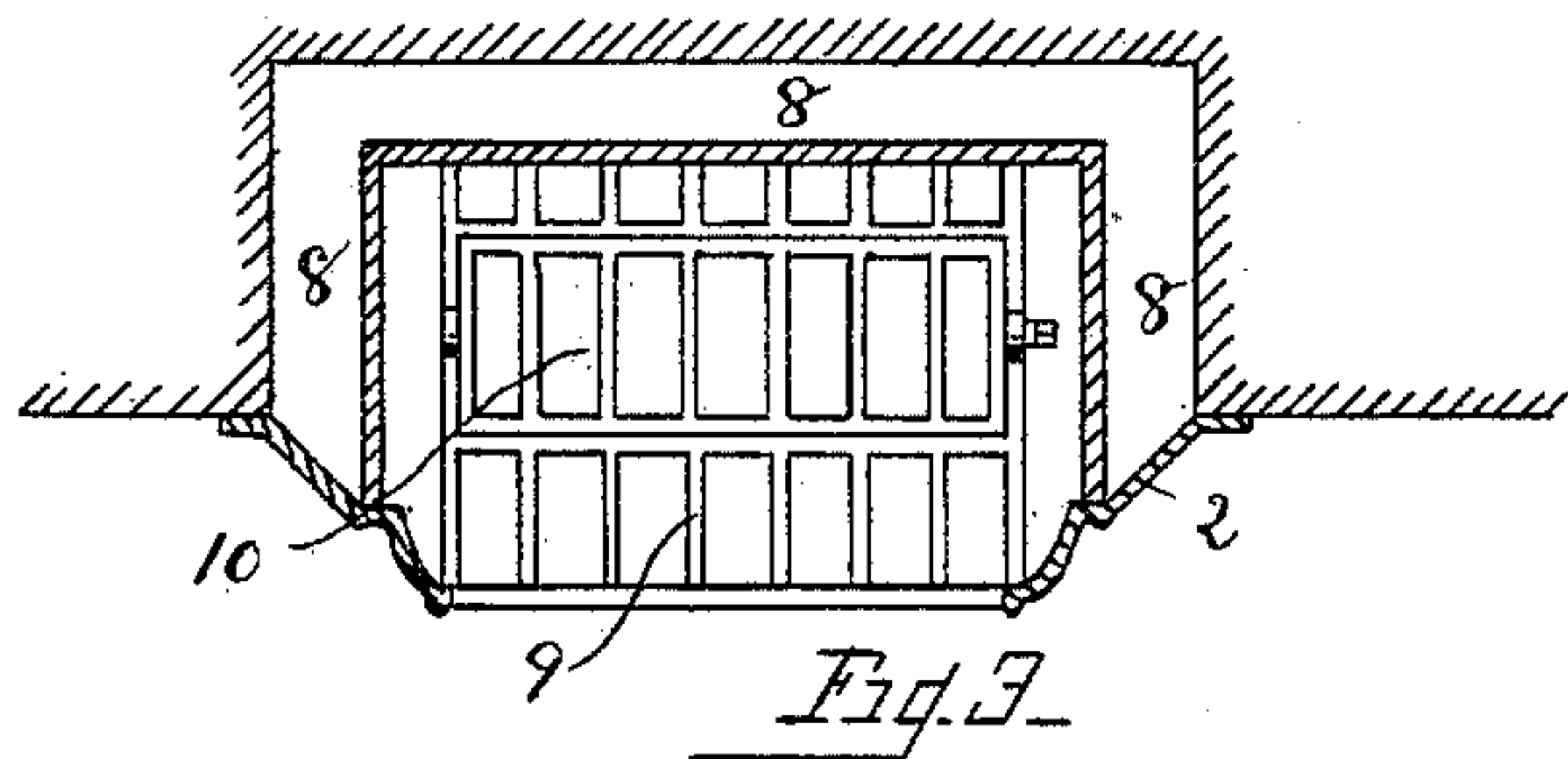
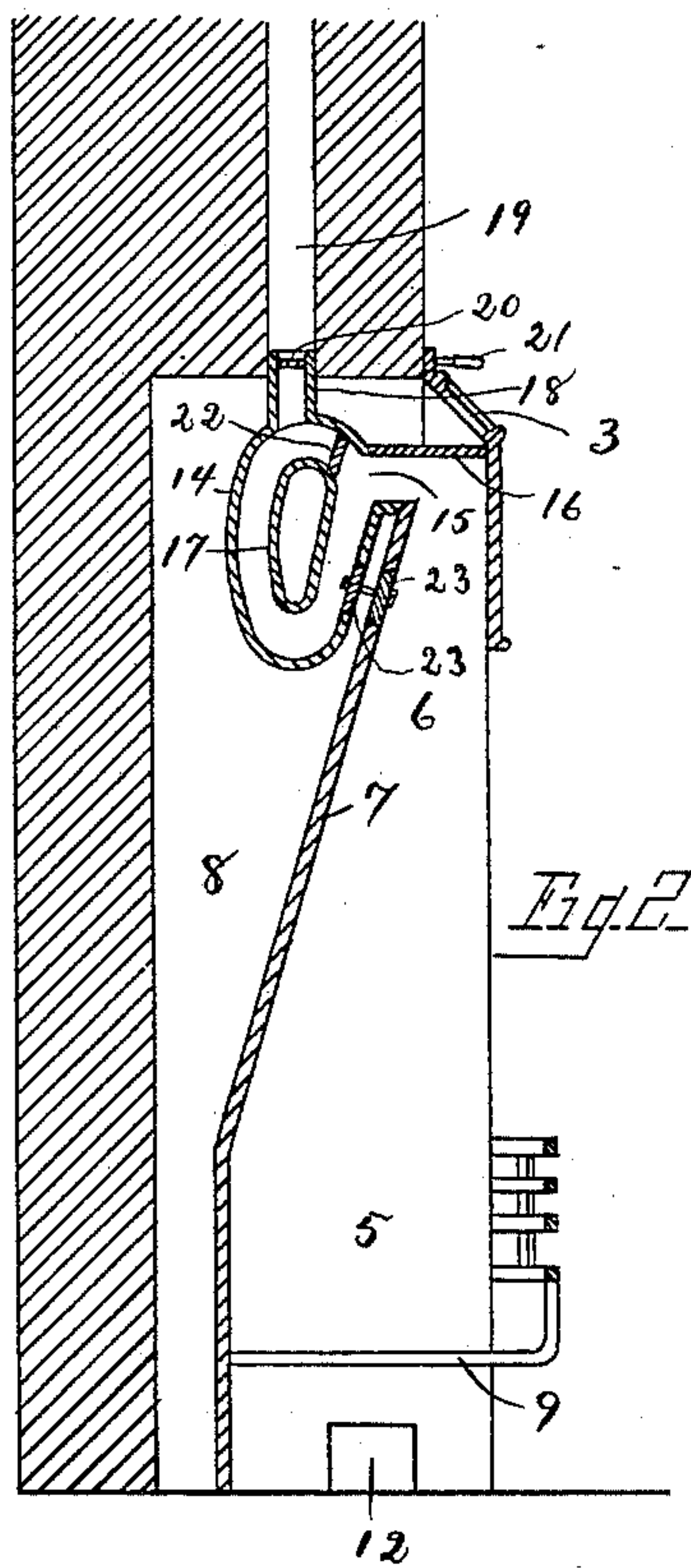
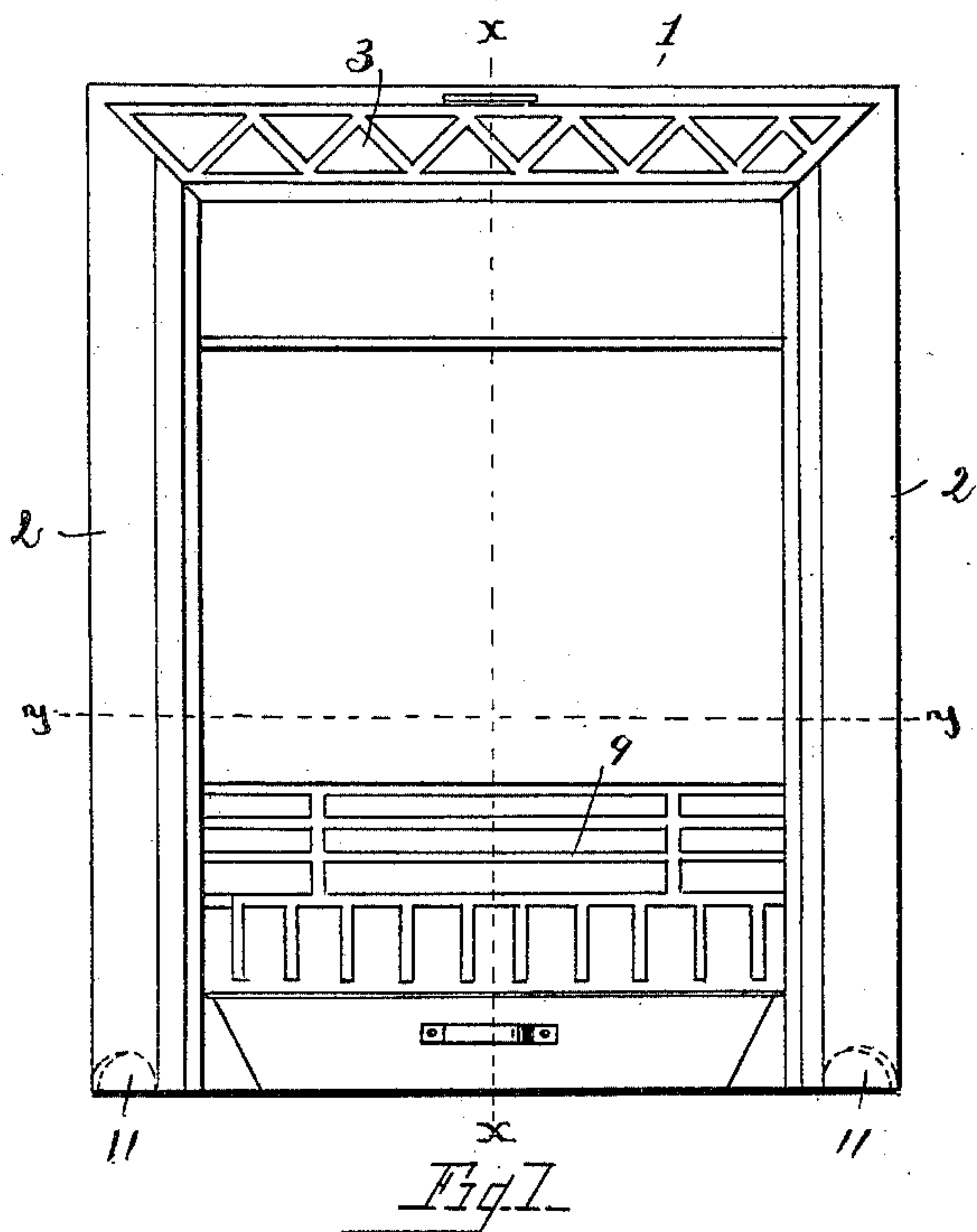


(No Model.)

D. TRACY.
HEATING AND RADIATING FIRE PLACE.

No. 462,748.

Patented Nov. 10, 1891.



WITNESSES

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UNITED STATES PATENT OFFICE.

DORIA TRACY, OF TOLEDO, OHIO.

HEATING AND RADIATING FIRE-PLACE.

SPECIFICATION forming part of Letters Patent No. 462,748, dated November 10, 1891.

Application filed February 20, 1891. Serial No. 382,150. (No model.)

To all whom it may concern:

Be it known that I, DORIA TRACY, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Heating and Radiating Fire-Places; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My invention relates to a heating and radiating fire-place, and has for its object to provide an inexpensive, ornamental, and insertible fire-place heater and radiator.

A further object is to construct a radiator with a hot-air drum arranged transversely of the same, whereby the products of combustion tending to escape through the flue are received therein and radiated therefrom.

A further object is to provide for withdrawing the cold air from the floor and conveying the same through ducts contiguous to the combustion-chamber and drum, whereby the same is heated and radiated through the apartment.

With these objects in view the invention consists in providing a supplemental radiator and heater for fire-places and wall-openings having direct radiation from the fire and tortuous passages for the escaping products of combustion, whereby the ascending heat is radiated, with means for causing a current of air to unite with the caloric current and be heated thereby.

In the drawings, Figure 1 is a front elevation of a complete fire-place. Fig. 2 is a transverse section on lines *x x*, Fig. 1, showing the fire-place in position in the wall. Fig. 3 is a horizontal section on lines *y y*, Fig. 1. Fig. 4 is a rear elevation of the fire-place.

1 designates the frame, comprising side wings 2 and open-work top 3, these portions being of any desired finish and ornamentation and of dimensions to overlap the edge of the wall-opening.

4 designates a rectangular three-sided box having a combustion-chamber 5, formed of parallel sides, and a deflecting upper portion 6, having an inclined rear side 7, said box be-

ing of less area in cross-section than the wall-opening, whereby there is formed an air-flue 8 on three sides of the combustion-chamber and deflector.

Within the lower portion of the box 4 is located a grate 9, preferably constructed with a shaking portion 10, also made removable to allow of inserting within the grate an oil or gas burner, thereby adapting the fire-place as an article of manufacture to any location, relating to the fuel of such locality. Leading to the air-flue 8 from within the room are openings 11, (shown in dotted lines, Fig. 1,) whereby the atmosphere of the room of lowest temperature is drawn into flue 8 and quickly heated by impinging against the heated rear side of the combustion-chamber and deflector. I may, however, form an opening 12 upon each side of the combustion-chamber below the grate and cause the air to enter from beneath the grate and pass into the flue 8, as shown in Figs. 2 and 4.

13 designates a drum of novel construction. As shown in the drawings, the drum is of oblong shape in cross-section, this form being given when economy of space is required; but it will be apparent that it may be of any desired shape in cross-section.

Drum 13 is of a length equal to the width of radiator 7, and comprises an outer shell 14, having an opening 15 coincident with the top of the radiator, and a hood or deflector 16, which extends across the upper end of the radiating portion 6 of box 4, whereby the products of combustion in rising strike the deflector and pass through opening 15 into the drum and around an inner shell 17, thereby heating the drum and radiating therefrom to pass out through the openings of the frame portion 13.

18 designates a smoke-flue formed in the drum and leading to the chimney 19, whereby the smoke from the combustion-chamber may escape therethrough, there being a damper 20, controlled by a lever 21, whereby the draft may be regulated.

22 designates a plate arranged longitudinally of the drum to cause the products of combustion to pass around the inner shell 15 of the drum.

From the above description the operation will be readily understood. A fire being

started in the combustion-chamber, the heat is deflected into the room by radiator 6, a portion, however, rising, due to the draft of the chimney, and strikes hood 16 and passes into
5 the drum, heating the same to a degree to cause great radiation of heat therefrom, which escapes through the openings of the frame portion 3 into the room. The rarefaction of
10 air in flue 8 causes a draft at openings 11 or 12, as the case may be, and the cold air from the floor is drawn into the flue and heated in its ascent and more fully as it passes around the drum and through the opening in the inner shell and is radiated into the room.

15 In order to be enabled to clean the outer shell of the drum of soot or ash deposit, I provide a removable door 23, which allows access thereto.

It will be seen that the entire supplemental
20 fire-place and radiator can be made as an article of manufacture and different sizes kept in stock in order to supply any demand.

It will be understood that the combustion-chamber and other parts subjected to intense

heat may be lined with fire-brick or analogous 25 non-conducting material.

What I claim is—

1. In a heating and radiating fire-place, a combustion-chamber, a radiator, a drum having a central shell, a deflector for deflecting the 30 products of combustion within the drum, and a plate arranged longitudinally of the drum for causing the products of combustion to pass around said shell.

2. In a heating and radiating fire-place, a 35 combustion-chamber, a radiator above the same, a drum arranged transversely of the radiator and formed with an opening through which the products of combustion may pass, and a central shell within the drum having 40 an opening centrally thereof.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

DORIA TRACY.

Witnesses:

WILLIAM WEBSTER,
CARROLL J. WEBSTER.