Feb. 10, 1942. B. S. PEDERSEN 2,272,428

HEATING SYSTEM

Filed Oct. 7, 1940

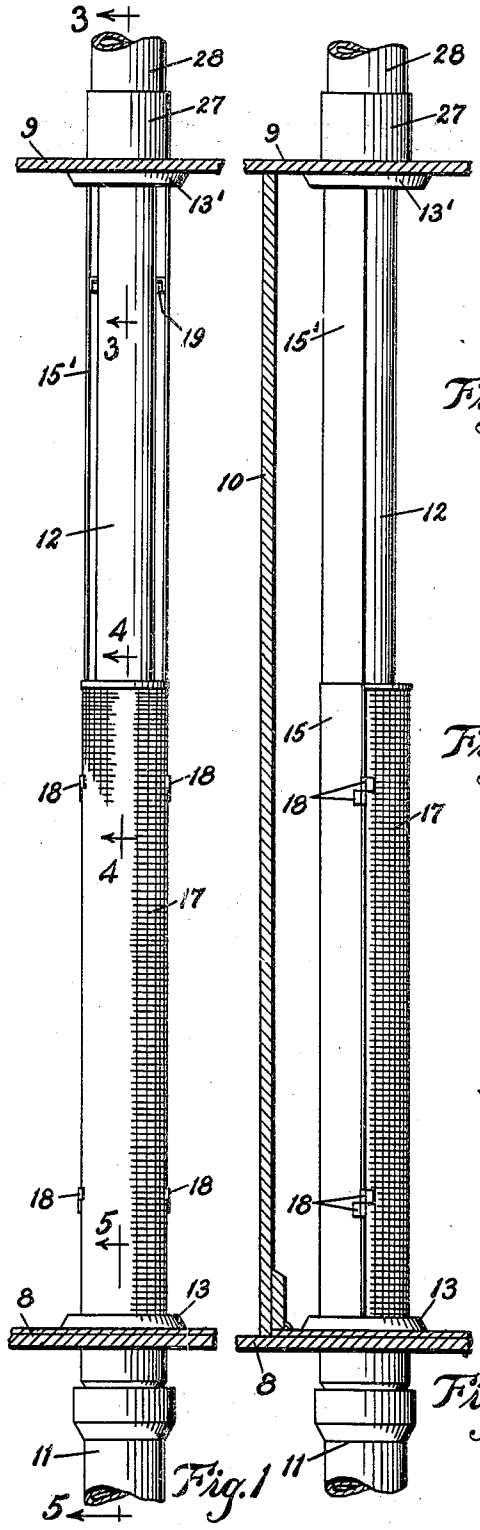


Fig. 1

Fig. 2

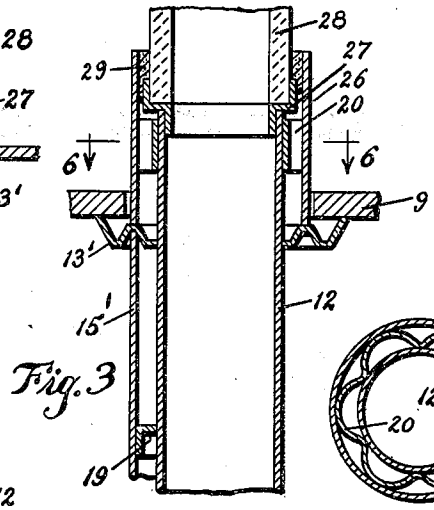


Fig. 3

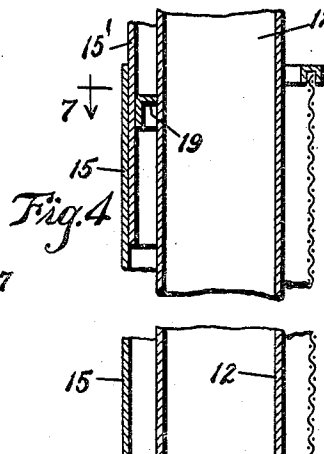


Fig. 4

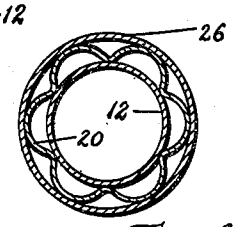


Fig. 6

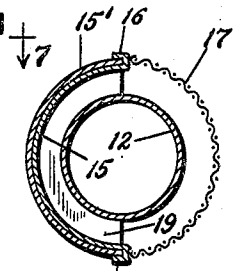


Fig. 7

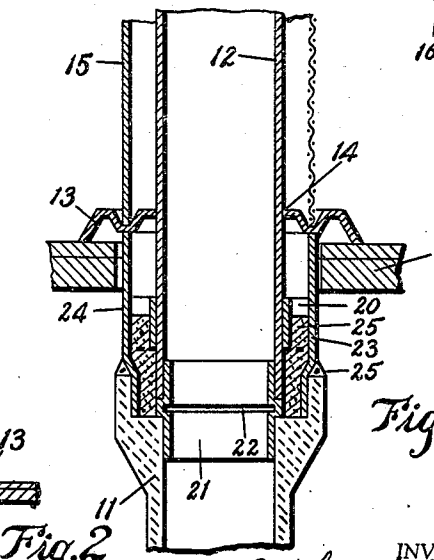


Fig. 5

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HEATING SYSTEM

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Application October 7, 1940, Serial No. 359,998

6 Claims. (Cl. 237—70)

My invention relates to heating systems, and more particularly to a system in which I make use of the hot gases and products of combustion which pass from a heating furnace, whether gas or other fuel, up through a pipe to the outside of the building.

It is an object of my invention to provide certain improvements in such a heating system wherein these hot gases and products of combustion will be conveyed up through a pipe in the room in which the heat is to be utilized, with provision for supporting said pipe and protecting the floor and ceiling from heat therefrom, and also with reflecting means for partially surrounding said pipe and for reflecting the heat from the pipe out into the room, and also providing a screen or guard to keep persons from coming in contact with the hot pipe in the room.

A great deal of heat is wasted in conveying these hot gases and products of combustion from gas furnaces, fuel furnaces and other heating furnaces which can be conserved and economically and effectively used, if the correct structure and arrangement is provided. It is the purpose of my invention to provide such proper equipment.

In order to further explain my invention, I have illustrated one practical embodiment thereon on the accompanying sheet of drawings which I will now describe. In the drawing:

Figure 1 is a front view of a pipe, reflector and guard extended up through the floor from the furnace pipe or flue and up through the ceiling;

Figure 2 is a side view of the same, showing a wall or partition;

Figures 3, 4 and 5, are three longitudinal sectional views, taken, respectively on the lines, 3—3, 4—4 and 5—5 of Fig. 1;

Figures 6 and 7 are cross sectional views taken on the lines 6—6, and 7—7, on Figs. 3 and 4, respectively.

Referring now in detail to the drawing, 8 designates a floor and 9 designates a ceiling, while 10 designates a wall or partition in the room in which the heating pipe is to be located.

It will be understood that my invention can be applied to any kind of flue or pipe which carries off the hot gases and products of combustion from a furnace or heating plant of any kind. In the drawing, such a flue is designated 11, and is carried up to the floor 8, and my heating pipe, designated 12 is passed through the floor and connected with such flue in the manner which I will now describe.

A floor flange is designated 13 and is shown in section in Figs. 3 and 5, and is provided with a central opening through which my heating pipe 12 passes, as at 14. Said flange is also provided with an annular seat, of V-shape in which a semi-circular reflector 15 is seated at its ends, as clearly illustrated in Figs. 3 and 5, said reflector preferably being made in sections, 15 and 15' connected in telescopic relationship, as will be understood from Fig. 7, where the inner section is provided at its edges with grooves or slideways, designated 16, 16.

I also provide, in front of said heat pipe 12, to meet the opposite edges of the reflector 15, for a part of the height thereof, a screen or guard 17, held in place by registering hinge-like elements with pins therethrough, designated 18. Any connecting means, of course can be used.

I also provide at intervals, spacers, as 19, 19, between the heat pipe 12 and the reflector, of angle form in cross section, and of C-shape, as will be understood from Figs. 4 and 7. These spacers serve to prevent heat currents and air from passing upwardly further and to be reflected and directed outwardly into the room.

In order to properly insulate or protect the floor and ceiling from the heat of the pipe, I have provided therein corrugated spacers, as 20, 20, also seen in Fig. 6. I also provide a coupling element 21, Fig. 5, which fits down into the center of the flue 11, with an annular bead 22, and adapted to receive the lower end of said heat pipe 12, as shown clearly in said Fig. 5. An outer guard member, designated 23, is shown in the lower end of Fig. 5, through the floor, with the spacer 20, therein, serves to protect the floor, and the lower end of this guard is reduced in size to fit down into the flue 11, in the manner indicated at 24, and in order to properly seal the joint, I have provided a filler of cement, or other suitable sealing material, designated 25.

It will be noted that at the ceiling, I have provided a similar construction and arrangement, with the flange 13', similar to the floor flange 13, with the spacer 20, in an outer guard member 26, and with a coupler or connecting member 27, to receive the upper end of the heat pipe 12, and also to receive the lower end of a vent pipe or flue 28, which might extend up through an attic or other upper structure, as the case may be.

Cement or other composition filler, as 29, is provided at the upper end the upper outer guard 26, as indicated at 29.

Thus I have provided a practical and econom-

ical heating pipe, properly supported and protected from the floor, with heat reflecting means around one side thereof for reflecting the heat out into the room, and with screen guard means in front to prevent accidental contact with the hot pipe.

It will be understood, of course, that the pipe, the reflector, and the screen guard, are all made of bright, or ornamental material or finish so as to be unobjectionable in the room and to give neat finish and design to the structure.

I am aware that changes in details can be made without departing from the spirit of my invention, and I do not, therefore, limit my invention to the showing made for explanatory purposes, except as I may be limited by the hereto appended claims.

I claim:

1. In a heating system, a heating pipe extended up through the floor into a room and connected at its lower end with a flue from a heating plant, whereby to convey hot gases and products of combustion up through said pipe as a source of heat therefor, a floor flange around said pipe at the floor to space said pipe from the floor through which it passes, reflector means around one side of said pipe, lengthwise thereof and spaced therefrom for reflecting heat therefrom out into the room, and open guard means around the opposite side of said pipe to prevent accidental contact with the hot pipe.

2. In a heating system, a heating pipe extended up through the floor into a room and connected at its lower end with a flue from a heating plant, whereby to convey hot gases and products of combustion up through said pipe as a source of heat therefor, a floor flange around said pipe at the floor to space said pipe from the floor through which it passes, reflector means around one side of said pipe, lengthwise thereof, seated at its lower end in said floor flange, spacing it from said heating pipe, with semi-circular spacer interposed between said heating pipe and said reflector means and adapted to stop upflow of heat and air currents between said heating pipe and said reflector means and to deflect them out into the room, and a semi-circular screen guard in front of said heating pipe, seated at its lower end in said floor flange and spaced from said heating pipe to prevent accidental contact therewith.

3. In a heating system of the character referred to, in combination with a heating pipe to carry hot gases and products of combustion, up through a room, of floor and ceiling flanges through which said pipe passes, semi-circular guard means around and spaced from said heating pipe at the floor and ceiling, semi-annular spacer means in said guards around said pipe, a composition filling between said guard means and said heating pipe, reflector means around one side of said heating pipe in the room for reflecting heat out into the room, and a screen guard in front of said pipe to prevent accidental contact with said heating pipe, and means for connecting the lower end of said heating pipe with a flue conveying hot gases and products of combustion to pass upwardly through said heating pipe.

4. In a heating system, in combination with a room, floor and ceiling, of a heating pipe extending from one to the other and therethrough, means for connecting the lower end thereof with a flue for hot gases and products of combustion to be conveyed upwardly through said heating pipe for heating the same, said connecting means including an outer tubular guard member around said pipe and spaced therefrom and connected with a flue, spacer means between said guard member and said heating pipe, a composition filler therein between said pipe and guard, an inner coupling member in the lower end of said heating pipe and in the center of said flue, a floor flange on the floor around said heating pipe, a reflector member of C-shape around one side of said heating pipe to reflect heat out into the room, said reflector being seated at its lower end in said floor flange and spaced from said heating pipe, and a screen guard around the front of said heating pipe and connected at its edges with the edges of said reflector.

5. A heating system for a room, including a heating pipe to be extended through the floor and through the ceiling, means at the floor for connecting the lower end of said pipe with a flue for gases and hot products of combustion from a furnace, said means including an inner coupling member extended into the end of said pipe and down into said flue, an outer tubular guard member with spacer means between said pipe and said guard member, said guard member extending through the floor around said pipe and spaced therefrom, a floor flange around said pipe and over the upper end of said guard, the lower end of said guard member being coupled into said flue, a sealing matter in said guard member around said pipe, a reflector around said heating pipe in the room for reflecting heat out into the room, and a semi-circular guard member around the front of said pipe and connected at its edges with the edges of said reflector to prevent accidental contact with said heating pipe.

6. In a heating system of the character referred to, in combination: a heating pipe extended up through a room from floor to ceiling, means for connecting a source of hot gases and products of combustion therewith, as a heating medium therefor, semi-circular reflector means around one side of said pipe in said room and spaced therefrom for reflecting heat outwardly therefrom into the room, a semi-circular screen guard in front of said pipe to prevent accidental contact therewith, and means for spacing and sealing said heating pipe from the floor opening through which it passes, including a floor flange around said pipe.

BERNHARD S. PEDERSEN.