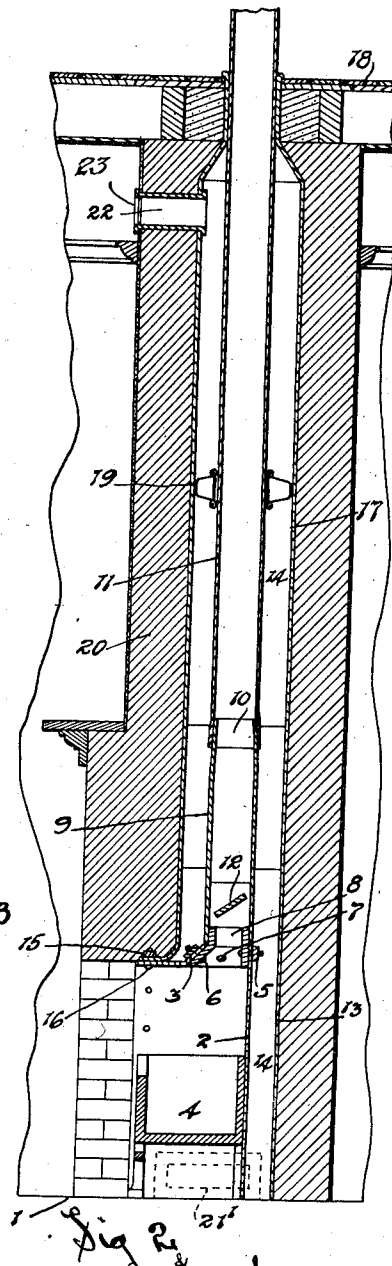
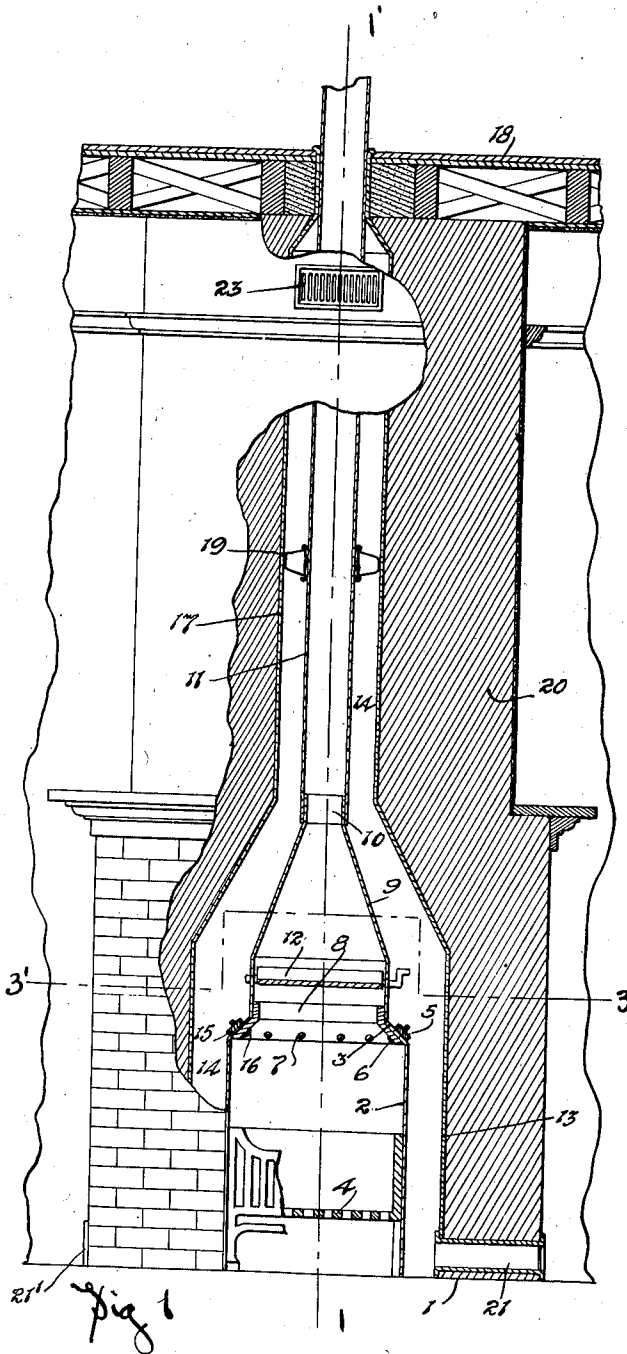


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 2 SHEETS—SHEET 1.



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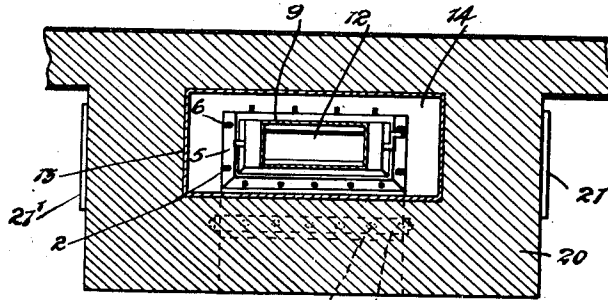


Fig 3

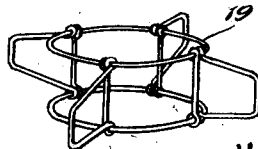


Fig 7

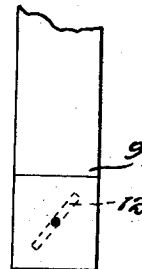


Fig 6

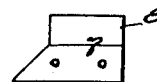


Fig 5

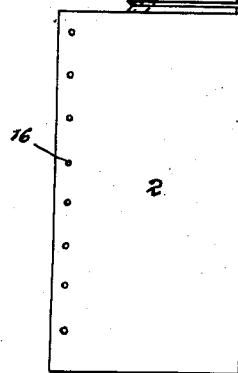


Fig 4

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UNITED STATES PATENT OFFICE.

ALEXANDER DUNCAN McLEOD, OF ARCOLA, SASKATCHEWAN, CANADA.

AUXILIARY FIREPLACE-HEATER.

1,361,389.

Specification of Letters Patent.

Patented Dec. 7, 1920.

Application filed September 3, 1919. Serial No. 321,505.

To all whom it may concern:

Be it known that I, ALEXANDER DUNCAN McLEOD, of the town of Arcola, in the Province of Saskatchewan, Canada, have invented certain new and useful Improvements in Auxiliary Fireplace-Heaters, of which the following is the specification.

The invention relates to improvements in auxiliary fireplace heaters and the general object of the invention is to provide a device designed to conserve and utilize the ordinary wasted heat in open fireplaces and thereby increase their heating capacity as a heating agent.

A further object is to provide a construction accomplishing the above object which can be readily installed when the fireplace is being built, requiring no change in the exterior appearance of the fireplace and in no wise decreasing its beneficial value as an open grate fire.

A further object is to arrange the parts so that they can be readily assembled and set up.

With the above more important objects in view the invention consists essentially in providing a hot air chamber around the fire box and pipe leading from the fire box and providing suitable air vents in connection with the air chamber to permit of the circulation of the air heated by the chamber within the adjacent room or rooms, the parts being arranged and constructed as herein-after more particularly described and later pointed out in the appended claim, reference being had to the accompanying drawings in which:—

Figure 1 is a view of a fireplace part in front elevation and part in vertical section.

Fig. 2 is a vertical sectional view through the fireplace, the section being taken at 1—1' Fig. 1.

Fig. 3 is a horizontal sectional view through the fireplace, the section being taken at 3—3' Fig. 1.

Fig. 4 is a side view of the fire box with the collar applied thereon.

Fig. 5 is a side view of the collar.

Fig. 6 is a side view of part of the hood.

Fig. 7 is a perspective view of one of the spacers for the pipe.

In the drawings like characters of reference indicate corresponding parts in the several figures.

The base 1 of the fireplace is made from

cement as is customary and on this base the other parts are built up. 2 is the fire box which has the bottom thereof set in the cement base and is provided with an open front as customary and has the top part thereof at the back provided with an upwardly extending neck 3, the sides and front of the neck inclining upwardly at an angle of approximately 45 degrees while the back is vertical. Within this fire box the customary grate 4 is located. To the neck I securely rivet a circumscribing flat band 5 and then I drill suitable holes through the band and neck and tap these to receive set screws 6 which secure the collar 7 to the neck. The collar is formed with a bottom part complementary to the inner face of the neck and with an extending upstanding flange 8 which projects upwardly beyond the neck.

By providing the band and tapping it in the manner disclosed one can readily set up the collar by first inserting it in position within the neck and then inserting the screws from the inside and tightening them up.

The flange of the collar receives the hood 9, the bottom part of which is substantially rectangular to fit around the flange and the upper part of which flares upwardly and inwardly at the sides and terminates in a contracted circular end 10 which communicates with the lower end of the smoke pipe 11, this pipe passing upwardly of the building and terminating at the chimney. The lower part of the hood is fitted with a damper 12 of ordinary form which can be manipulated from the interior of the room.

The fire box and hood are contained within a receiving casing 13 spaced at the back and sides from the fire box and hood to provide an interior air chamber 14 utilized for heating purposes.

At the front the casing is flanged out around the front of the fire box and a flat band 15 is here also applied on the flange to which it is riveted and the band is drilled and tapped to receive fastening set screws 16 similar to screws 6. The upper part of the casing flares inwardly at the sides and is continuous with a sheet metal pipe 17 spaced from the pipe 11 to form a continuation of the chamber 14. In Figs. 1 and 2 of the drawings the pipe 17 is shown as extending upwardly to the first

floor 18 of the room where it closes in to the pipe 11 and thereby closes off the upper end of the air chamber.

Suitable spiders or spacers 19 are inserted between the pipes, such in the present instance being made from wire (see Fig. 7) so that they will not interrupt the circulation while serving to space and stay the inner pipe.

The pipe 17 actually forms a lining to the ordinary brickwork 20 of the chimney and fireplace.

From the above disclosure it will be apparent that the fire box as well as the smoke pipe 11 leading from the fire box is surrounded within the wall by an air chamber, the air in this chamber being naturally heated by the heat radiating from not only the back and sides of the fire box but also from the smoke pipe. The hot air chamber so provided is utilized to advantage in heating the room, cold air vents 21 and 21' being provided adjoining the ground floor to admit of cool air entering the bottom of the air chamber while a hot air vent 22 is provided at the top adjacent the ceiling, such permitting the hot air to pass from the air chamber into the room.

Obviously when the fireplace is in use the circulating heated air will add materially to the value of the fire place as a heating agent and will not detract in the slightest from its value as an open grate. The vent opening 22 can be provided with a suitable register 23 controlling the circulation.

While I have described the various parts

in detail, still it will be understood I do not wish to be limited to the precise construction shown as the various parts can be readily modified without in the least departing from the spirit of the invention which resides principally in the provision of a heating chamber surrounding the fire box and the smoke pipe and suitable inlet and outlet vents connecting with the chamber and arranged to effect an auxiliary air circulation within the adjacent room or rooms.

What I claim as my invention is:—

In an open grate fireplace, a fire box provided at the top and toward the rear with an upwardly extending neck, a band permanently secured to the outer side of the neck, said band and neck being provided with suitably spaced screw threaded openings, a collar inserted within the neck and extending above the same, screws securing the collar through the casing to the band, an upwardly flaring hood having the lower end mounted on the collar, a smoke pipe communicating with the upper end of the hood, an inclosed air chamber surrounding the fire box and smoke pipe, said air chamber extending for a considerable distance up the smoke pipe, a cold air vent opening to the bottom of the air chamber and a warm air vent leading from the top of the air chamber.

Signed at Arcola, this 4th day of August, 1919.

ALEXANDER DUNCAN McLEOD.

In the presence of—

NELLIE HOEY,
H. J. DARRACH.