

Feb. 18, 1930.

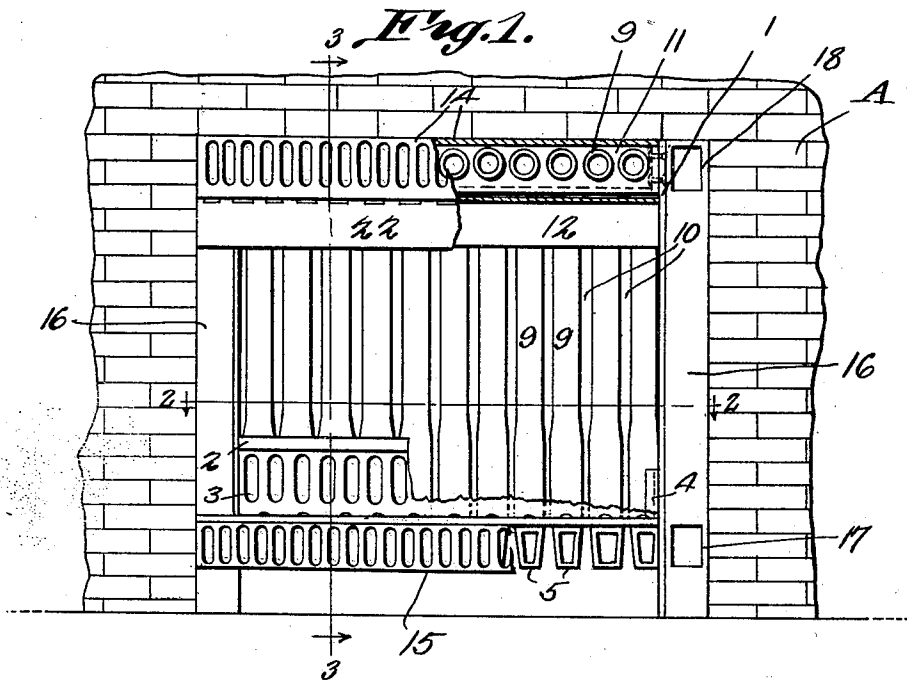
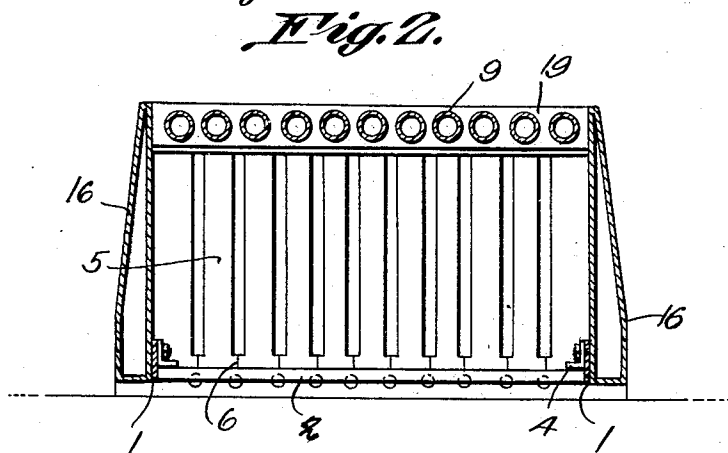
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1,747,259

HEATER FOR FIREPLACES

Filed July 9, 1928

2 Sheets-Sheet 1



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Fig. 3.

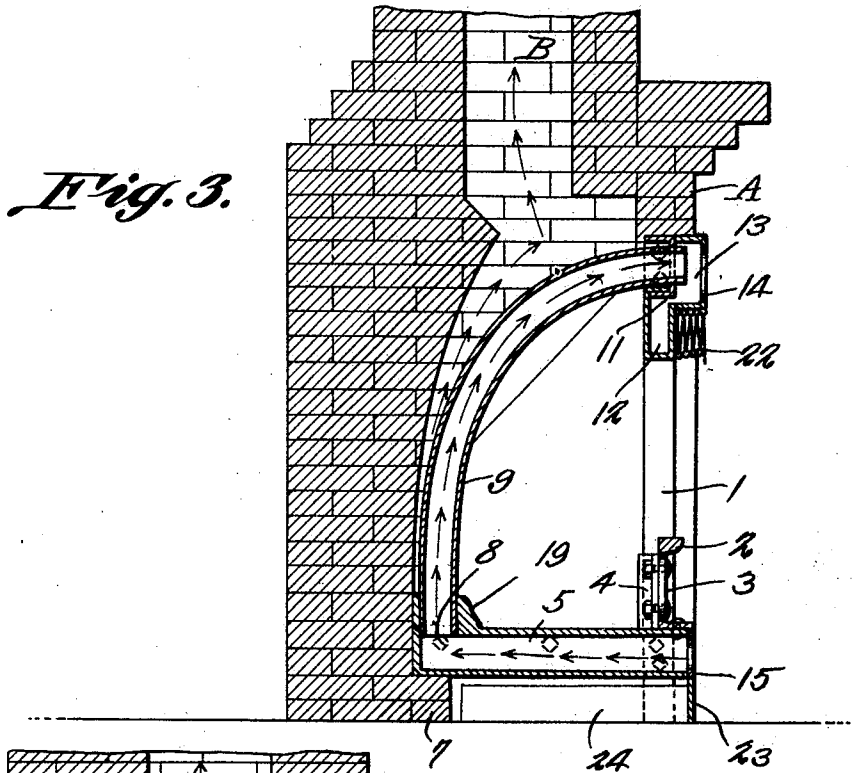
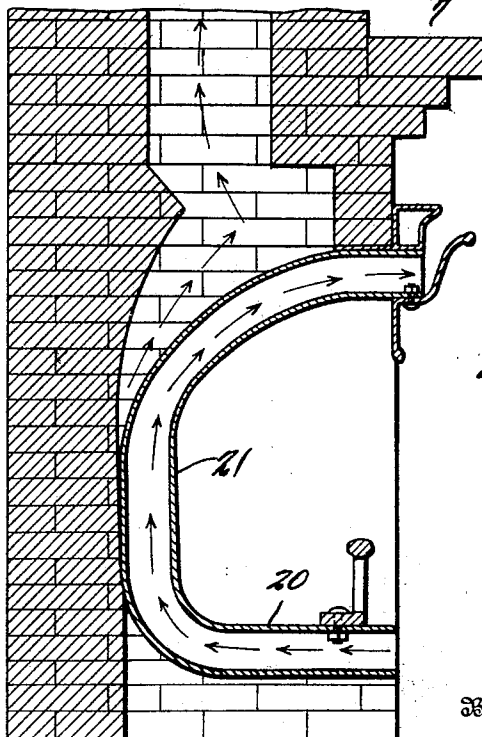


Fig. 4.

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UNITED STATES PATENT OFFICE

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HEATER FOR FIREPLACES

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This invention relates to a heater designed primarily for installation in fireplaces that have already been constructed, one of the objects being to provide an efficient and compact device of this character which, after being set up for use, will produce a circulation of heated air within the room in which the fireplace is located, there being a novel arrangement of flues through which the air flows, which are located where they will be quickly and thoroughly heated by the fuel in the fireplace.

Another object is to provide a compact structure of this type which can be easily set up for use, is durable in construction, and has means combined with it for supplying moisture to the heated air before it is delivered into the room.

With the foregoing and other objects in view which will appear as the description proceeds the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred forms of the invention have been shown.

In said drawings,

Figure 1 is a front elevation of a portion of a fireplace having the heater positioned therein, a portion of the heater being in section and a portion in front elevation.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is a section on line 3—3, Figure 1.

Figure 4 is a view similar to Figure 3 showing a slightly modified structure.

Referring to the figures by characters of reference A designates a fireplace structure of the usual type provided with a smoke outlet flue B.

The attachment to be set up within the fireplace includes side standards 1 connected, near their lower ends, by a transverse beam or channel strip 2 the web or intermediate portion of which has openings 3 formed therein whereby an attractive appearance is imparted

to the heating attachment. The ends of this channel strip are attached by angle brackets 4 or the like to the standards 1. The bottom flange of the channel strip 2 is fastened by bolts, rivets or the like to the top faces of hollow grate bars 5 the front ends of which are in alinement and open while the sides of the bars preferably contact at said front ends. These points of contact are indicated at 6. The grate bars are extended rearwardly from the contacting portions and are mounted at their rear ends on a suitable supporting structure such as a ledge 7 of masonry or the like. The rear ends of the bars are closed and openings 8 are provided in the tops of the grate bars near the closed ends. From their rear ends to their front contacting portions the grate bars are preferably tapered downwardly and reduced in width, thereby to provide clearance spaces between the bars through which ashes can gravitate freely.

In the form of attachment illustrated in Figures 1, 2, and 3, the openings 8 in the rear end portions of the bars 5 receive the lower ends of rear flues 9 which extend upwardly and forwardly so as to overhang the grate bars 5, these flues being reduced in transverse area along their upper portions so as to provide spaces 10 through which products of combustion can flow freely to the flue B.

The forward upper ends of the flues 9 are extended into and suitably secured to a header plate 11 which extends transversely within the upper portion of the fireplace opening and is attached at its ends to the upper portions of the standards 1.

Depending from the header 11 and extending longitudinally thereunder is a water container in the form of a trough 12 open at the top into a space 13 provided back of a grille plate 14 suitably secured at its ends to the standards 1. Another grille plate 15 is mounted in front of the open end of the grate bars 5 and is fastened at its ends to the standards 1.

If desired there may be mounted in each side portion of the fireplace opening a side casing 16 constituting a supplemental air heating means, this casing extending through-

out the depth of the fireplace opening and being provided, adjacent its bottom with an air inlet opening 17 and, adjacent its top, with an air outlet opening 18. Where these supplemental casings are employed they are arranged between the side walls of the fireplace opening or recess and the standards 1. Where they are not used the standards 1 are fitted close to the side walls of the fireplace opening.

It will be apparent that the parts constituting this heating attachment can be readily assembled and set up within the fireplace. The grate bars 5 will support the fuel, air being supplied thereto through the spaces between the bars. The burning fuel will heat not only the bars 5 but also the flues 9 and air entering the bars 5 at their front ends will flow therealong through the openings 8 and thence upwardly through the flues 9 from which it will be discharged back into the room through the grille 14.

Referring to the flues 9 these are extended at their lower ends into a transverse tubular member connecting the bars 5, as shown in Figures 2 and 3. Instead of providing the arrangement of grate bars and flues shown in Figure 3, the same can be constructed as in Figure 4 wherein the tubular bars 20 are made integral with the upwardly extending flues 21.

For the purpose of partly or entirely shielding or screening the fuel in the attachment, a shutter or screen 22 may be provided. In the structure as shown in Figure 3 this screen is in the form of hingedly connected slats of metal adapted to be folded together and folded in front of the trough 12 when not in use. By lowering this shutter, however, it can be caused to drop entirely across the opening above the strip 2. The space below the grate bars can be closed by the front end 23 of an ash pan 24 removably mounted under the grate bars.

By arranging the trough 12 as shown, the heat from the burning fuel will cause the water to vaporize and this vapor will mix with the hot air as it escapes from the flues 9.

What is claimed is:

1. A heating attachment for fireplaces including tubular grate bars open at their front ends, said front ends being wider than the remaining portions of the bars and contacting with each other, the narrower portions of the bars forming openings therebetween for the escape of ashes, air flues extending upwardly and forwardly from and communicating with the rear portions of the grate bars, the upper portions of these flues being of reduced widths thereby to provide spaces of increased size for the passage of gaseous products of combustion.

2. A heating attachment for open fireplaces including side supporting means, a transverse strip connecting the supporting means, tubular grate bars open at their front ends, said

front ends being wider than the remaining portions of the bars and contacting with each other, the said ends being disposed beneath and secured to the cross strip thereby to be supported, the narrower portions of the bars forming openings therebetween for the escape of ashes, air flues extending upwardly and forwardly from and communicating with the rear portions of the grate bars, the upper portions of these flues being flattened transversely thereby to provide spaces of increased size therebetween for the passage of gaseous products of combustion, and transverse means connecting the side supporting means for supporting the upper front ends of the air flues.

3. A heating attachment for open fireplaces including side supporting means, a transverse strip connecting the supporting means, tubular grate bars open at their front ends, said front ends being wider than the remaining portions of the bars and contacting with each other, the said ends being disposed beneath and secured to the cross strip thereby to be supported, the narrower portions of the bars forming openings therebetween for the escape of ashes, air flues extending upwardly and forwardly from and communicating with the rear portions of the grate bars, the upper portions of these flues being flattened transversely thereby to provide spaces of increased size therebetween for the passage of gaseous products of combustion, and transverse means connecting the side supporting means for supporting the upper front ends of the air flues, and means below the open upper ends of the air flues for partly or entirely closing the spaces between the front ends of the grate bars and the air flues thereby to retard or prevent the direct flow of heated air from the upper ends of the air flues into said space.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

JEFFERSON F. PIERCE.