June 10, 1941. J. G. MATHIS 2,245,074

FIREPLACE GUARD

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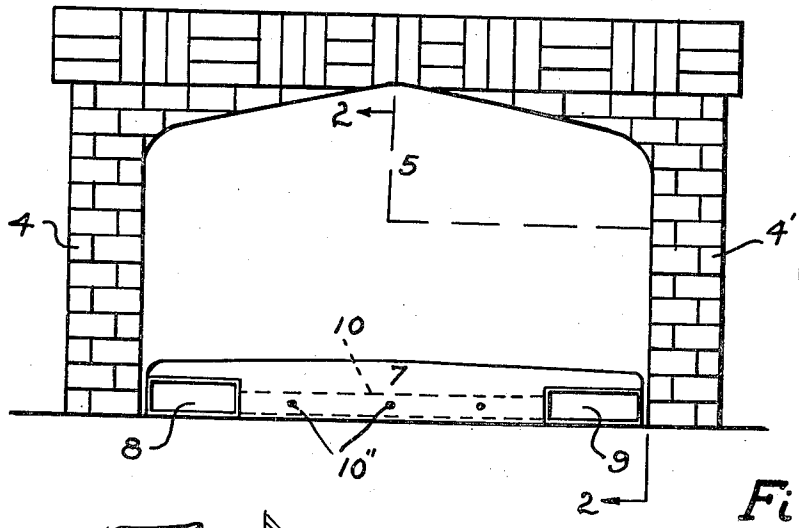


Fig. 1

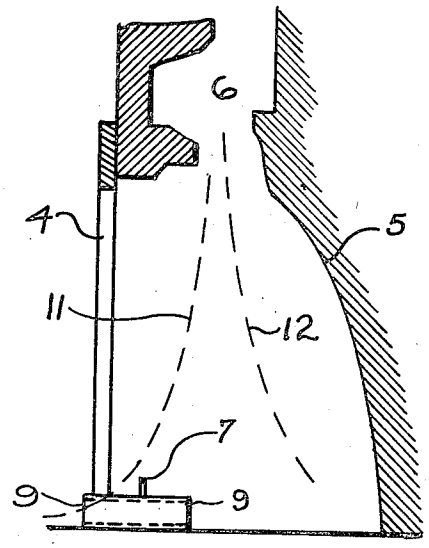


Fig. 2

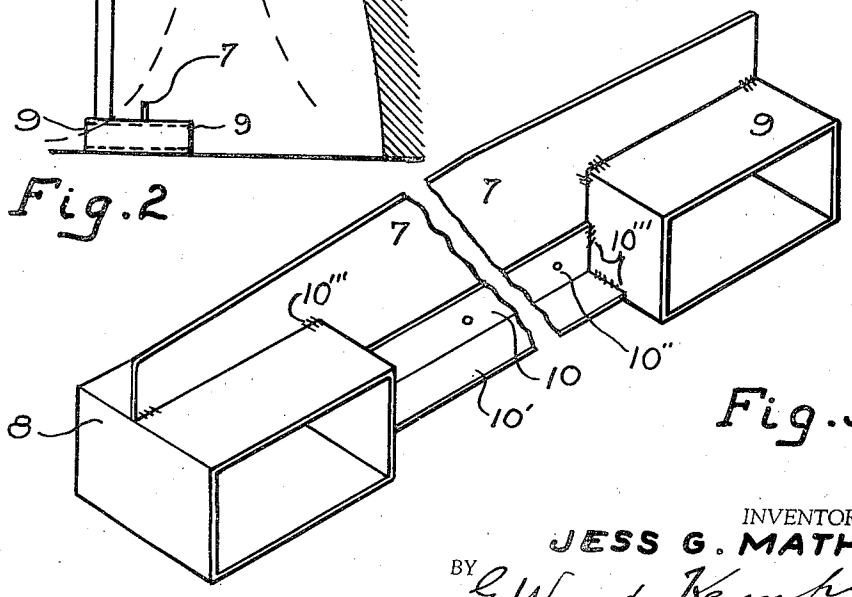


Fig. 3

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FIREPLACE GUARD

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1 Claim. (Cl. 126—120)

This invention relates to guards for fireplace and particularly to baffle guards for regulating drafts and heat and for preventing the escape of ashes from a fireplace.

In the use of open fireplaces where fuel is used and burned for heating rooms, it has been the practice to permit the fire to draw air for combustion from the floor level across the entire front of the fire. The air currents thus flow inward on floor level and slightly above toward the rear of the fireplace, and thereby carry the flames and heat rearwardly toward the back of the fireplace. The heated air and gaseous combustion products then flows upward and is pressed against such back wall toward the chimney flue, in spaced relation from the front of the fireplace and from the room, whereby much of heat does not radiate outward to warm the room as desired. Quantities of ashes are also formed from the burned fuel, which in practice gradually spread outward upon the hearth and thence into the room, especially when fresh supplies of fuel are fed to the fire.

Objects of this invention are therefore, to provide means for regulating and directing the flow of air from the room in suitable directions for drawing the flames and heat forwardly toward the front of the fireplace and room, for heating the latter, and also for conducting suitable supplies of air for combustion to the sides of the fire level with the base thereof, and further to prevent the spread of ashes forwardly from the fireplace.

Particular objects are to provide a relatively low guard or baffle plate across the front of the fireplace between the side walls thereof, to prevent the spreading of ashes and especially for deflecting currents of air from the lower part of the room, upward toward the chimney flue.

Another particular object, is to provide air ducts, at each end of the guard adjacent the side walls of the fireplace, and preferably in tubular form, across the ends of the guard for maintaining the guard in perpendicular position, are for conducting supplies of air rearwardly to the sides of the fire and at the base thereof.

With these and other objects hereinafter shown, I have illustratively exemplified my invention by the accompanying drawing, of which:

Figure 1 represents a front elevation of a fireplace with the guard across the front thereof.

Figure 2 represents a cross section, taken on line 2—2 of Fig. 1.

Figure 3 represents an enlarged detail perspective view of the guard and tubular ducts.

Like numerals on the different figures represent like parts. Numerals 4 and 4' represent side walls of a fireplace with the usual back wall 5, and chimney or flue 6 above for the escape of smoke and gases from a fire.

7 represents my baffle guard, or fender member. This is preferably formed of sheet metal, for convenience in lifting and moving the same and for gathering heat from the fire and reflecting the same outward into the room in front thereof. 8 and 9 represent passageways or tubular ducts, affixed to the ends of the guard and at right angles therewith, with bases on the same plane as that of the guard between. These tubes are preferably extended a short distance from each side of the guard, to provide a base to prevent the guard from tipping and to maintain the same in perpendicular position between the walls, and also to conduct currents of air for the fire to the sides thereof and level with the base of the flames, whereby the flames will not be carried backwardly from the room.

In order to prevent ashes from working forward and beneath the guard, any angle plate as 10 is preferably attached to the rear side of the guard, with the lower edge of the angle iron extended backward to provide an apron 10', upon which any loose ashes will tend to gather, rather than to work outward upon the hearth in front of the fender. The plate 10 also tends to provide rigidity between the fender and tubular ducts. Connections may be provided as by rivets 10'' and spot welds 10''', in the usual manner, for attaching sheet metals.

Experiments have shown that a sufficient supply of air for suitable combustion of fuels will flow through the ducts at the ends of the fender to each side of the fire, and level with the base of the flames. Additional currents of air will flow toward the fireplace near the floor, and will be diverted upwardly by the baffle and thence as indicated by dotted line 11 in front of any flames. Such upward flow tends to create a suction behind the same, which tends to draw the flames and heat forwardly as indicated by the dotted line 12 away from the back of the fireplace and toward the room, whereby a greater degree of heat is radiated outward into the room, than in cases where my baffle is not used.

Experiments have also shown that practical and important beneficial results are so obtained in a fireplace approximately three feet wide, by the use of a front baffle approximately three inches in height between the sides of the fireplace, with ducts at the ends of the baffle approxi-

mately four inches wide, and slightly narrower than the baffle.

While I have illustrated and described my invention by specific drawing and specifications, I do not limit my invention specifically thereto, but desire to protect the same as broadly as the state of the art permits.

Having described my invention I claim as new:

A baffle guard for a fireplace having a chimney flue, comprising a solid sheet metal plate, for disposition across the front of a fireplace between the side walls thereof for deflecting currents of air upward from in front thereof toward the chimney flue, tubular supports attached to the plate at right angles thereto, the bases of said supports extending across the ends of the guard for maintaining the same in perpendicular position and for conducting supplies of air for combustion to a fire behind the guard on a level with the base of the fire adjacent the rear thereof, and an apron extended backwardly from the base of the guard to prevent spread of ashes from behind the guard and provide rigidity between the guard and tubular supports.

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