May 17, 1938. J. B. TURNER 2,117,379

FORM FOR FIREPLACES

Filed May 14, 1936 2 Sheets-Sheet 1

Fig 1

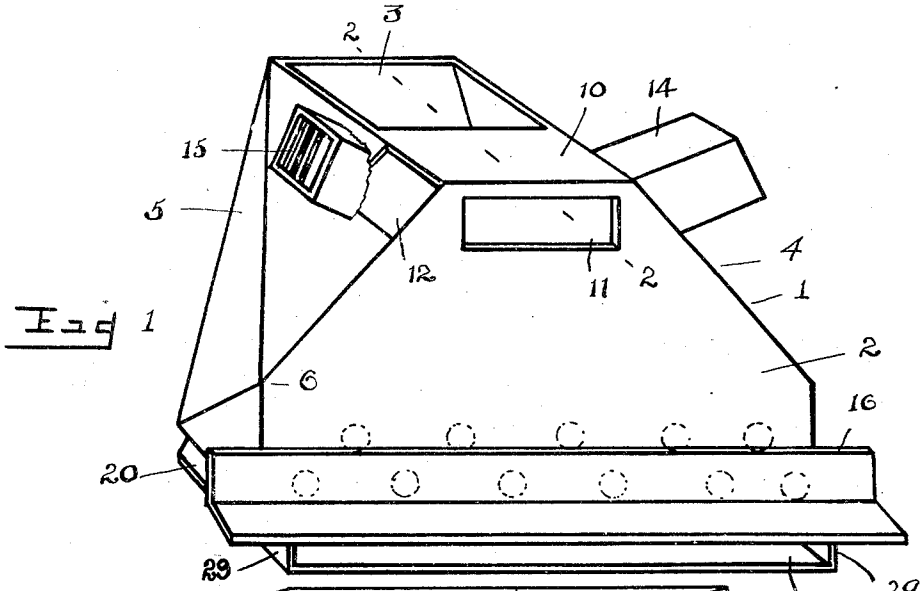
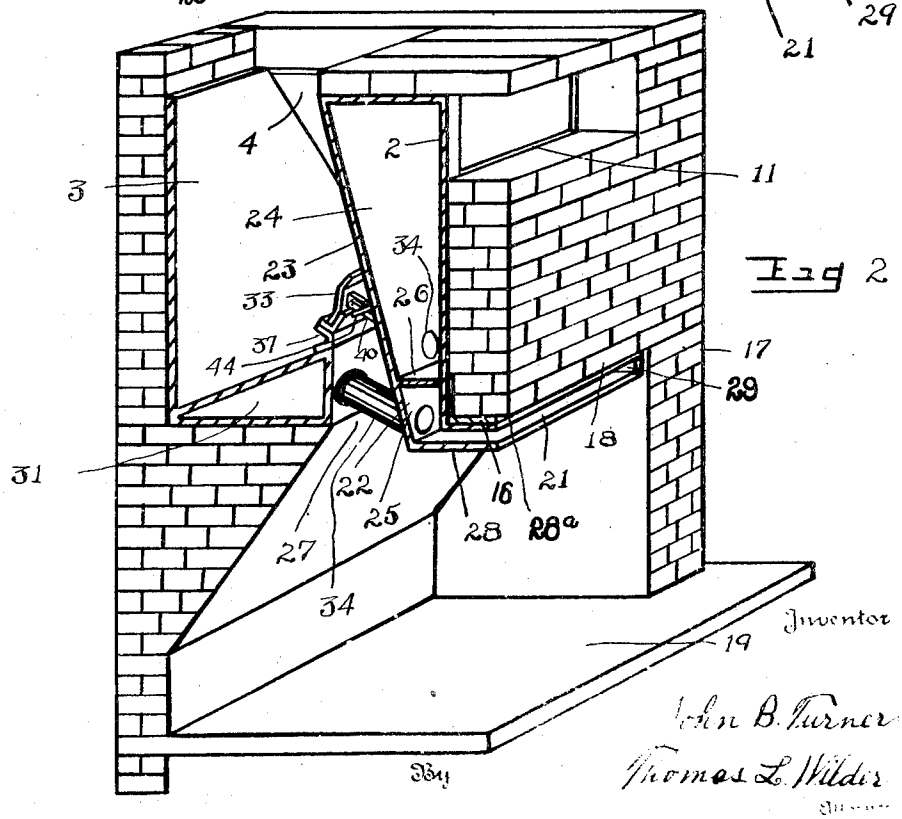


Fig 2



Inventor

John B. Turner

Thomas L. Wilder

May 17, 1938. J. B. TURNER 2,117,379

FORM FOR FIREPLACES

Filed May 14, 1936 2 Sheets-Sheet 2

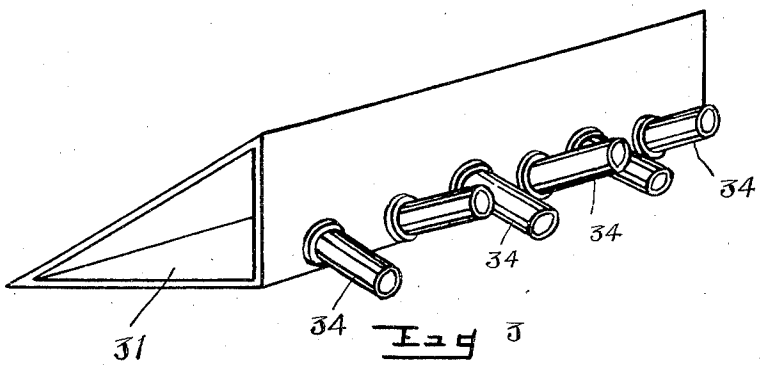


Fig 3

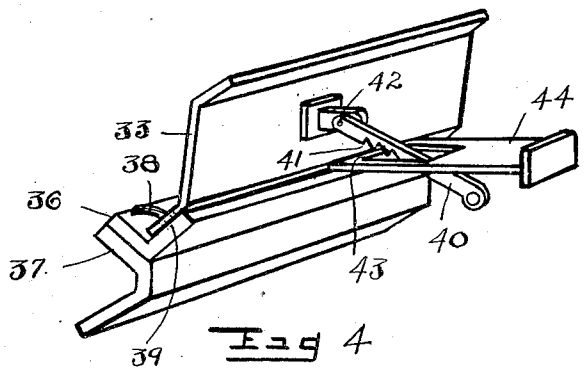


Fig 4

Inventor

John B. Turner

By Thomas L. Milder

Attorney

Patented May 17, 1938 2,117,379

UNITED STATES PATENT OFFICE

2,117,379

FORM FOR FIREPLACES

John B. Turner, Norwich, N. Y.

Application May 14, 1936, Serial No. 79,744

1 Claim. (Cl. 126—121)

My invention relates to a form for fireplace and I declare the following to be a full, clear, concise and exact description thereof sufficient to enable anyone skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings in which like reference characters refer to like parts throughout the specification.

The object of the invention is to provide a fireplace unit or form about which the brick masonry can be constructed. The advantages of such a form insures the proper proportions, whereby to effect a smokeless combustion of the fire and to conserve the heat therefrom that would under other conditions escape up the chimney.

Furthermore, the present invention is an improvement over my copending application filed Nov. 5, 1935, Ser. No. 48,632 in that it provides two heating chambers for collecting and distributing the heat in place of one in the former application.

The object will be understood by referring to the drawings in which

Fig. 1 is a perspective view of the device.

Fig. 2 is a central vertical section taken on the line 2—2 of Fig. 1.

Fig. 3 is a detail enlarged view showing a perspective of the rear heating chamber and connecting pipes attached thereto.

Fig. 4 is a detail enlarged view showing a perspective of a damper and immediate parts employed.

Referring more particularly to the drawings, the device embodies a form 1 preferably made of some suitable heat resisting metal. Form 1 has a front 2 and a rear side 3 disposed in parallel though spaced relation to each other. Each of the two enclosing sides 4 and 5 respectively is pyramidal in shape with the apex 6 disposed at the lower portion of the front surface 2. This pyramidal shape of the sides 4 and 5 results in each side having three surfaces at an angle to each other. The top portion of the form is partially covered by inclosing member 10 which extends from the front surface 2 more or less than half way back across the top leaving the remaining portion of the top open for the smoke and gases to pass up through the chimney.

Furthermore, the front 2 has an opening at 11, whereby to allow the heated air to circulate outwardly. Each of the sides 4 and 5 likewise has openings 12, 12 to which may be attached hot air conducting pipes 14 having registers 15, 15.

There is welded or otherwise secured to front side 2 adjacent the lower edge an angle bar 16 which extends beyond the lateral edges of sides 4 and 5 to aid in supporting form 1 upon the masonry 17 and also to carry the masonry 18 over the top or lintel of the fireplace hearth 19. Furthermore horizontal plates 20, 20 are formed on the lower latter sides 4 and 5 to aid in supporting form 1 in masonry 17. Below angle bar 16 is an opening or channel 21 hereinafter mentioned through which the air is admitted to the front heating chamber 22. Front heating chamber 22 is formed by inclined partition plate 23 and is divided into an upper chamber 24 and lower chamber 25 by another partition plate 26 which is disposed in horizontal position across chamber 22. The upper chamber 24 is much larger than the lower chamber 25. Partition plate 23 is disposed at an angle to more or less overhang the flue opening 27, whereby the chambers 24 and 25 will receive the benefit of the heat passing up the flue 27 of the chimney.

Channel 21 above mentioned is made by extending the lower part of inclined partition plate 23 in a horizontal plane at 28 bending the ends upwards at 29, 29, to contact the lower surface of horizontal extension 28a of front wall 2, whereby to form an air channel 21.

There is also a rear heating chamber 31 located on the rear side of the flue opening 27 which may be closed by the usual damper 33, hereinafter mentioned. Front heating chambers 24 and 25 and rear heating chamber 31 are connected by a plurality of short tubes 34 which are disposed at regular spaced intervals across flue opening 27, whereby to receive the benefit of the heat from the hearth 19 of the fireplace as it passes up the chimney. Said short tubes connect the rear heating chamber 31 to the front chambers 24 and 25. Their unions with front chambers 24 and 25 alternate however, as respect said front chambers 24 and 25, whereby every other tube 34 is united at their front ends alternately to lower chamber 24 and upper chamber 25. Sufficient space is left between said tubes 34 to allow the smoke and gases of combustion to pass upwardly therebetween through the flue 27 of the chimney.

Damper 33 is removably attached to an angle iron 36 which is welded or otherwise secured to the free upper portion 37 of the casing of rear heating chamber 31. In removably attaching damper 33, shaped pins 38, 38 are employed and engage apertures 39, 39 made in the lower part of the damper 33. Said pins 38, 38 are rigidly mounted to one side of angle iron 36. The opposite free ends of arc shaped pins 38, 38 are

spaced from the other surface of angle iron **36**, sufficiently for engaging arc shape pins **38**, **38** in apertures **39**, **39** of damper **35**. A handle **40** having teeth **41** is pivoted at **42** to damper **33**. It engages the edge **43** of bracket **44** to hold damper **33** in given position. Bracket **44** is welded to partition **23**.

The construction of the device is effected by building the masonry **17** up to a certain location and placing the form **1** thereon. Thereafter the masonry is built around form **1** and conforms to its outlines, whereby to insure direct proportions to the fireplace.

When the fire is started on the hearth **19** of the fireplace the heat passing up through the spaces between tubes **34** will cause the air passing through the alternate tubes **34** that connect lower chamber **25** with rear chamber **31** to be heated and pass through the other set of alternate tubes **34** into the upper heating chamber **24** from whence the heat can be conducted by convection or circulation through front outlet **11** and registers **15** into the living room.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is as follows:

An air heating structure for a fireplace comprising a casing open at top and bottom to provide a flue passage, partition walls in said casing forming a lower rear air heating chamber, second partition walls in said casing spaced forwardly of said first walls and forming an upper front air heating chamber and a lower air inlet chamber, a plurality of pipes alternately connecting the rear chamber with the front air heating chamber and the air inlet chamber, walls extending from said inlet chamber to form a horizontal elongated inlet passage therefor and to provide a lintel for the fireplace, and air outlets formed in the casing in communication with the front air heating chamber.

JOHN B. TURNER.