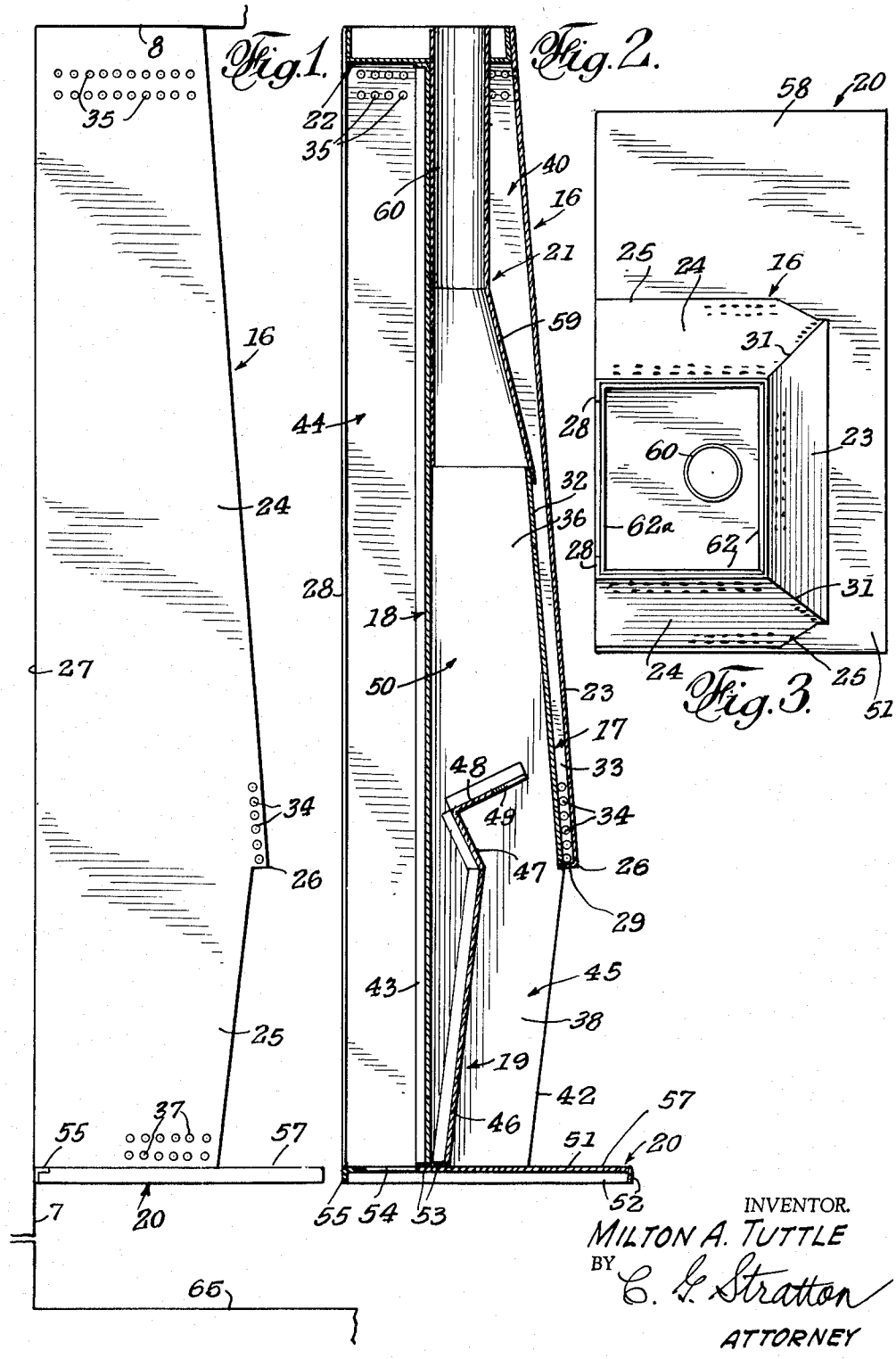
Oct. 6, 1964 M. A. TUTTLE 3,151,611

ALL-METAL JACKETED AND VENTED FIREPLACE

Filed July 2, 1962 2 Sheets-Sheet 1



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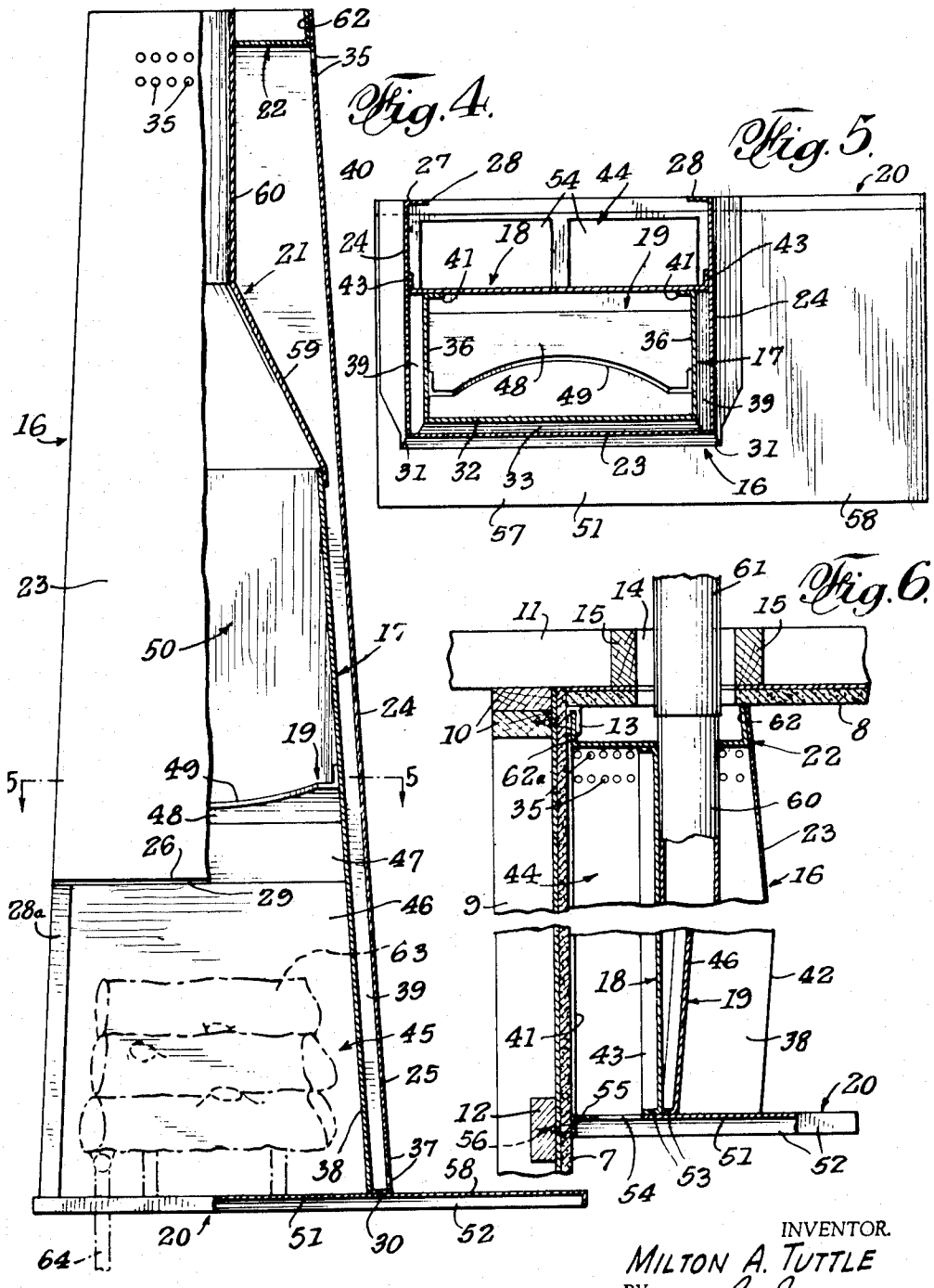

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ALL-METAL JACKETED AND VENTED FIREPLACE

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This invention relates to a fireplace structure.

An object of the invention is to provide a vented fireplace of unitary construction and adapted to be installed, as a unit, by bolting the same to a wall of a room.

Another object of the invention is to provide a unitary fireplace that, when mounted in operative position, may be spaced above the floor, thereby being entirely hung from the wall.

A further object of the invention is to provide a fireplace of the character referred to that is wholly made of sheet steel to be light in weight, yet efficient to house a gas flame-generating unit.

This invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description and which is based on the accompanying drawings. However, said drawings merely show, and the following description merely describes, one embodiment of the present invention, which is given by way of illustration or example only.

In the drawings, like reference characters designate similar parts in the several views.

FIG. 1 is a side elevational view of a vented fireplace according to the present invention.

FIG. 2 is a longitudinal sectional view taken on a plane parallel to the plane of FIG. 1.

FIG. 3 is a plan view.

FIG. 4 is a front elevational view, partly in vertical section.

FIG. 5 is a cross-sectional view as taken on the line 5—5 of FIG. 4.

FIG. 6 is a broken longitudinal sectional view showing a preferred manner of mounting the fireplace on a wall.

FIG. 6 shows a wall 7 and a ceiling 8. The present fireplace is adapted to be mounted on said wall and against the ceiling so as to be spaced above the floor of a room having such wall and ceiling. The usual studs 9 of wall 7 mount crosspieces 10, where the ceiling beams 11 are joined to the studs, and a crosspiece 12, in vertical spaced relation to the crosspieces 10. It is contemplated that said crosspieces comprise the only support means for the fireplace.

According to the invention, the crosspieces 10 mount an inverted U-shaped retention clip 13.

The ceiling is provided with a clearance hole 14 that may be framed by the beams 11 and framing pieces 15.

The present fireplace comprises an outer jacket 16, an inner jacket 17, a back panel 18, a firebox deflector 19, a hearth 20 to which the lower edges of said jackets, deflector and panel are joined, as by welding, a flue 21, and a top plate 22. Said elements 15 to 22 are each preferably made of a suitable sheet metal, steel being preferred.

The outer jacket 16 comprises a front wall 23 that tapers toward the top, and side walls 24 that are bent from wall 23, are coextensive with said front wall and have lower portions 25 that extend below the lower edge 26 of wall 23. The portions of walls 24, above edge 26, are tapered toward the top while said lower portions are

tapered toward the bottom. The back edges 27 of the walls 24 are straight and are provided with inturned flanges 28. The sloping front edges of the lower portions 25 of the side walls are provided with flanges 28a; the lower edge 26 of wall 23 has a rearwardly directed flange 29; and the lower edges of the side wall portions 25 are provided with inturned flanges 30. The corners 31 formed between the front wall 23 and the side walls are preferably right angle corners.

The inner jacket 17 comprises a front wall 32 inwardly spaced from and preferably parallel to wall 23 to form a space 33 for passage of air from intake holes 34 in the side walls 24 of the outer jacket to outlet holes 35 in the upper ends of walls 23 and 24. Said wall 32 tapers similarly to the taper of wall 23 and extends from the flange 29, to which it is welded, part way toward the top of the fireplace. Said inner jacket has side walls 36 that are spaced from the side walls 24 to accommodate the mentioned air flow which also includes air supplied through intake holes 37 in the lower portions 25 of the side walls 24. The lower portions 38 of the side walls 36 are shaped similarly to the lower portions 25 of the outer jacket. FIG. 4 shows the space 39 and that the same is vertically coextensive with the height of the inner jacket. Said spaces 33 and 39 are joined to have a U form, as in FIG. 5. Above the upper end of the inner jacket 17, the same enlarges into a space 40.

The side walls 36 and their lower portions 38, of the inner jacket, have a lesser width than the side walls 24 of outer jacket 16, the rear edges of walls 36 having inturned flanges 41 that are forwardly spaced from the flanges 28 of the outer jacket. The lower edges of the side wall portions 38 are jointed by welding to the flanges 30, and the forward edges 42 of said wall portions are joined by welding to the flanges 28a.

The back panel 18 closes off the back of the inner jacket, as can be seen in FIGS. 2 and 5. Said panel 18 has the same shape as wall 23, but extends from the lower edge of the inner jacket upwardly beyond the upper edge of said inner jacket to a point short of the upper end of the outer jacket, as can be seen in FIG. 2. Said panel 18 is provided with side flanges 43 that are joined by welding to the inner faces of the walls 24, and the flanges 41 of the inner jacket are joined by welding to the forward face of said panel. It will be seen from FIGS. 2 and 5 that an air space 44 is provided rearward of the panel 18 that is open to the mentioned outlet holes 35 in the outer jacket walls 24.

The firebox deflector 19 serves also as a liner that closes the back of the forwardly open firebox 45 that is transversely defined between the wall portions 38 of the inner jacket 17. Said deflector comprises an upwardly and forwardly sloping panel 46 that has at its upper end an upwardly and rearwardly sloping portion 47, and, at the upper end of the latter portion, an upwardly and forwardly sloping portion 48. The forward edge of portion 48 is formed with a concavely formed edge 49 which affords an upper exit opening for the firebox 45 into the space 50 that is defined within the inner jacket 17 and its back panel 18.

The hearth 20 is shown as having a flat floor wall 51 with reinforcing flanges 52 around the perimeter of said wall. The flanges 30 of the outer jacket, and the flanges 53 on the lower edges of the back panel 18 and the deflector 19 are joined by welding to the top surface of said wall 51. Suitable air intake openings 54 are provided in said wall in communication with the air space 44. At the rear, said hearth is provided with a mounting or support member, shown as an angle 55 that, as shown in FIG. 6, is adapted to be secured to the wall 7, as by screws 56. The hearth that is shown extends forwardly from the firebox at 57, and laterally from the fireplace at 58 to

provide a ledge that may be used for a variety of purposes.

The flue **21** is here shown as comprising a funnel member **59** that is connected by welding to the upper portion of the inner jacket **17** and extends upwardly to terminate in a preferably circular upper end, and a vent tube **60** connected by welding to said funnel end and extending upwardly to the upper end of the fireplace. Gases of combustion in the firebox flow between the edge **49** and the adjacent portion of the wall **32**, into the inner jacket, and then through the flue **21** and through any suitable vent extension **61** through the ceiling and a roof thereabove, or, in exposed beam installations, directly through the roof.

The top plate **22** is fitted to the upper end of the outer jacket to close off the spaces **40** and **44** so that air flow is directed through the outlet holes **35**. The vent tube **60** extends through said plate which is held in place by welding of its flanges **62** to the inner faces of the jacket walls **23** and **24**.

The present fireplace is not intended to burn logs, coal or other such fuel. It is intended that the firebox be provided with a ceramic log unit **63** that is supported and preferably permanently secured to the hearth **20**, and is designed to provide a gas flame that is fed by natural or illuminating gas that is fed through a gas line **64** extending through the hearth.

Preferably before installation of the log unit **63** into the fire box, the above-described fireplace is lifted, as by a common auto jack, so that the rear flange **62***a* of the top plate **22** is raised into engagement with the retention clip **13**. While the fireplace is held raised by the jack, the screws **56** are applied to fasten the angle **55** to the wall stud **12**. Now, the jack may be removed since the fireplace will be firmly held in place by angle **55** and clip **13**. Thereafter the vent extension **61** and the gas logs **63** may be installed, as described.

It will be seen from FIG. 1 that the hearth is spaced above the floor **65** of the room having wall **7**, and that the fireplace is wholly hung from said wall **7** independent of the floor **65**.

While the foregoing has illustrated and described what is now contemplated to be the best mode of carrying out the invention, the construction is, of course, subject to modification without departing from the spirit and scope of the invention. Therefore, it is not desired to restrict the invention to the particular form of construction illustrated and described, but to cover all modifications that may fall within the scope of the appended claims.

Having thus described this invention, what is claimed and desired to be secured by Letters Patent is:

1. An all-metal vented fireplace comprising:
(*a*) a flat horizontal hearth plate provided with a peripheral stiffening flange and having an air-intake opening adjacent one edge of the plate,
(*b*) an upright outer jacket provided with a front wall having a lower edge spaced above the hearth plate and with side walls secured at their lower ends to the hearth plate, venting openings being provided in the lower and upper ends of said jacket,
(*c*) a member on the rear edge of the hearth plate to engage a support wall, the rearward edges of said side walls of the outer jacket being flush with said rear edge and disposed in engagement with the support wall when the hearth plate is in mounted position on said support wall,
(*d*) an inner jacket secured to said hearth plate and spaced from said outer jacket and provided with a rear wall panel forward of the air-intake opening in the hearth to define an air-passing space between said support wall and the wall panel open to said opening in the hearth plate and to part of said upper venting openings,

(*e*) said two jackets below the mentioned lower edge of the front wall of the outer jacket, defining a firebox above the hearth plate,
(*f*) a closure plate across the upper end of the outer jacket above the venting openings therein, and
(*g*) a flue connected to and constituting an upper extension of the inner jacket, said flue extending through said closure plate.

2. An all-metal fireplace according to claim 1 in which
(*a*) said rear panel spans between the sides of the outer jacket, the sides of the inner jacket being provided with flanges connected to said panel, and
(*b*) a firebox liner and deflector across the inner jacket forward of the panel and defining the back of the firebox in the inner jacket.

3. An all-metal vented fireplace comprising:
(*a*) a rectangular hearth provided with a transverse mounting member along the rear edge thereof for engagement with a support wall for said hearth, said hearth having an air-intake opening adjacent said rear edge,
(*b*) an outer jacket secured to and extending vertically from said hearth and having a front wall and side walls in U-shaped form with the front wall terminating above the hearth to define the upper end of a firebox opening between the side walls between the hearth and said front wall, and laterally directed upper and lower venting openings in said side walls,
(*c*) an inner jacket of U-shaped form secured to said hearth and spaced from the outer jacket and provided with a rear panel forward of the air-intake opening in the hearth to form an air passage defined, laterally, between the side walls of the outer jacket and, front to back, by said panel and the hearth-supporting wall, said passage being open at the bottom to the air-intake opening in the hearth and at the top to part of the upper venting openings, said two jackets defining between them a U-shaped air space open to the lower venting openings and the remainder of the upper venting openings,
(*d*) a closure plate across the upper end of the outer jacket above the upper venting openings,
(*e*) and a flue connected to and constituting an upper extension of the inner jacket, said flue extending through said closure plate.

4. An all-metal fireplace according to claim 3 in which
(*a*) said rear panel spans between the sides of the outer jacket, the sides of the inner jacket being provided with flanges connected to said panel, and
(*b*) a firebox liner and deflector across the inner jacket forward of the panel and defining the back of the firebox in the inner jacket.

5. An all-metal fireplace according to claim 3 in which the mentioned closure plate is provided with a vertical, rearwardly disposed mounting flange that cooperates with the mentioned mounting member on the hearth to mount the fireplace on the support wall.

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