

Dec. 13, 1932.

C. GWALTNEY

1,891,047

WALL AND PARTITION STOVE

Filed March 25, 1930

2 Sheets-Sheet 1

FIG. 1

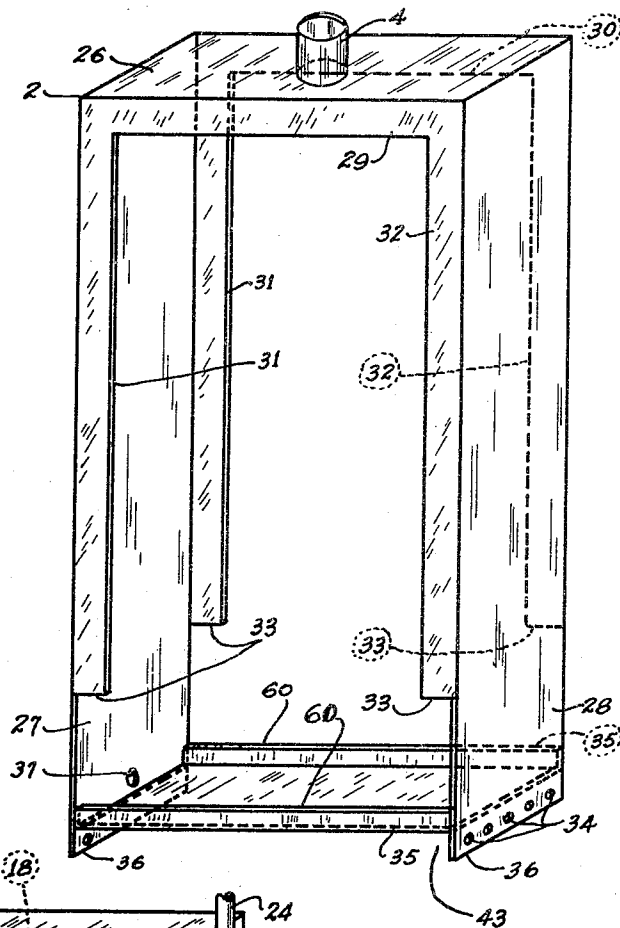
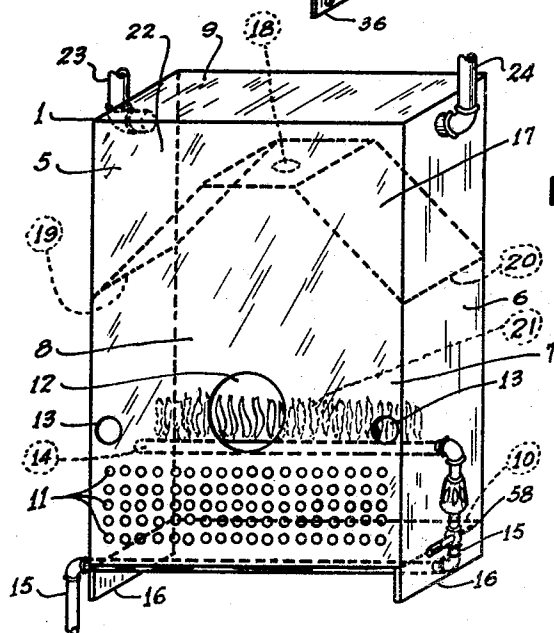


FIG. 2



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2 Sheets-Sheet 2

FIG. 3

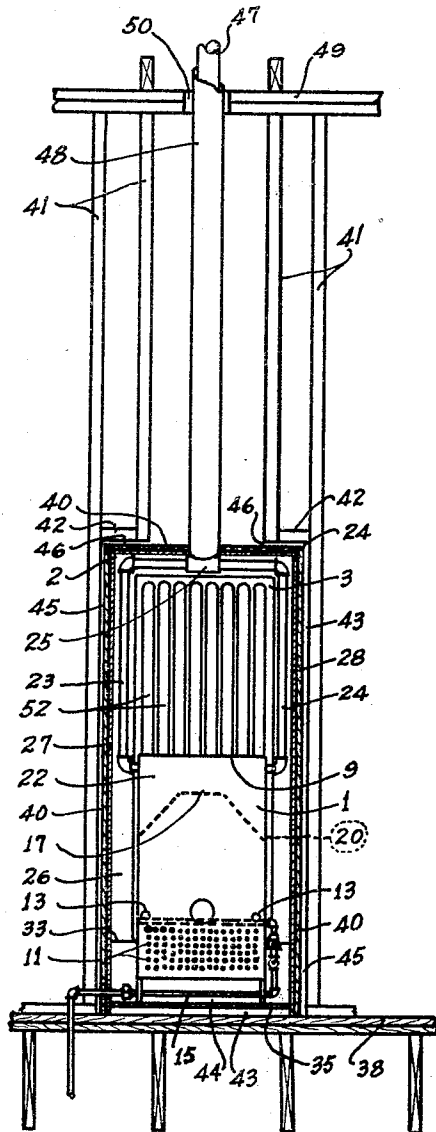


FIG. 4

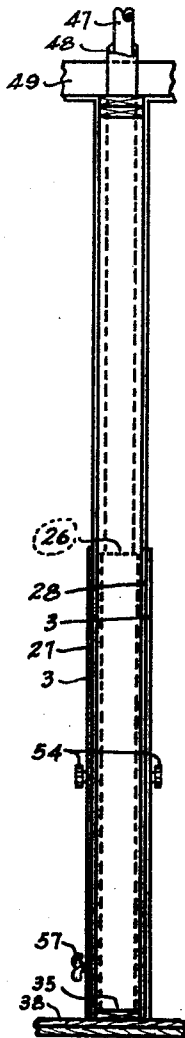
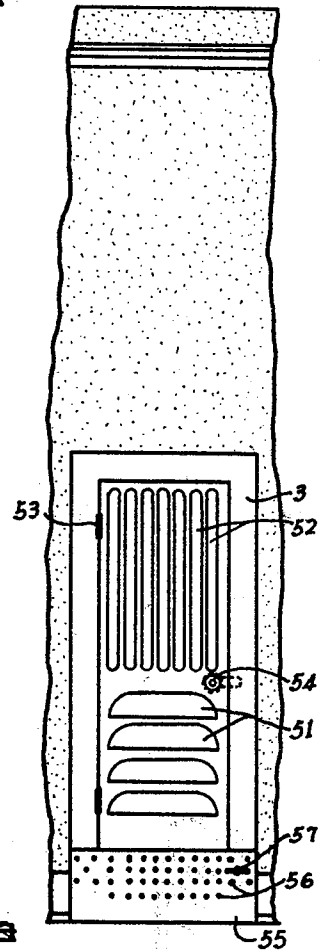


FIG. 5



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WALL AND PARTITION STOVE

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My invention relates to heating stoves adapted to be installed in walls and partitions.

The objects of my invention are to provide a device of this class which is new, novel, practical and of utility; which is designed to be positioned within a partition wall separating two rooms, in such a manner as to cast its heat directly into each of the two rooms; which will connect with an insulated flue, which also is within said partition, for the escape of gas fumes from the stove; a device which will be of a construction adequately insulated so as to eliminate any possibility of setting fire to the said partition or to the floor; which will provide a means for circulating heated air within the said adjoining rooms; a stove having two opposing faces each of which will be practically flush with the wall within which it is set; which will save use of the space usually occupied by two stoves; which will be neat and attractive in appearance; which will be safe; which will be economical in use and in installation; and which will be efficient in accomplishing all the purposes for which it is intended.

With these and other objects in view as will more fully appear, my invention consists in the construction, novel features, and combination of parts hereinafter more fully described, pointed out in the claims hereto appended, and illustrated in the accompanying two-sheet drawing, of which,

Figure 1 is a perspective view of the outer shell of the stove, its two opposing doors removed;

Fig. 2 is a perspective view of the stove showing fragments of its two vent pipes and of its supply line;

Fig. 3 is a front elevational view of the stove and its outer shell, disposed between the studs of a partition wall, its insulated vent pipe broken away and its front door removed;

Figure 4 is a side elevational view of the stove and shell installed as shown in Fig. 3; and

Fig. 5 is a front elevational view of a partition wall with my device installed therein.

Like characters of reference designate like parts in all the figures.

It is understood that various changes in the form, proportion, size, shape, weight and other details of construction, within the scope of my invention may be resorted to without departing from the spirit or broad principle of my invention and without sacrificing any of the advantages thereof; and it is also understood that the drawings are to be interpreted as being illustrative and not restrictive.

One practical embodiment of the invention as illustrated in the drawings comprises;

A box stove 1, having an exteriorly insulated outer shell 2, the latter provided with a pair of oppositely disposed doors 3, and with a fume vent 4.

The stove 1 is substantially constructed of sheet metal, is box like in form, has a thickness approximately that of the thickness of a usual partition wall, has closed ends 5 and 6, a closed front and back, respectively 7 and 8, and a closed top 9 and bottom 10.

The said front 7 at its lower portion is provided with a plurality of small perforations shown as 11 for the admission of air, and thereabove, with a central hand hole shown as 12, to be used when igniting the gas. Other perforations shown as 13 through the front 7, but one each adjacent the respective ends 5 and 6, are for adding visibility to the flame, shown as 21, of the burner 14. The burner 14 is disposed centrally within the lower portion of the stove, may be of any suitable type and is supplied with gas by means of a usual pipe 15 attached thereto exterior to said side 6, and leading from a source of supply not shown. It will be noted that the bottoms 16 of the respective sides 5 and 6 extend somewhat below the level of the said stove bottom 10, and that the said burner 14 is disposed at a level slightly above that of the topmost row of said perforations 11. This disposition of the burner with relation to the said perforations 11 is had in order that the air passing through said perforations may readily pass to the underside of the burner 14.

Within the upper portion of the stove 1 is provided a sheet metal baffle plate 17, its upper central portion flat and provided with a vent hole shown as 18, its end portions bent

at an angle downward, its respective ends 19 and 20 securely attached by brazing, riveting or the like to the vertical sides 5 and 6 of said stove. It will be understood that the width from front to back of said baffle 17 will be that of the interior thickness of the said stove from front to back, and that such means as may be deemed necessary will be used to secure said baffle to said front and back plates 7 and 8. It will also be readily understood that the baffle 17 is designed to confine the fumes from the burner 14, and to direct the passage through the vent 18 into the compartment 22 of the stove above said baffle. As a means for carrying the fumes from said compartment 22, I provide, communicating therewith, the vent pipes, 23 and 24. The pipes 23 and 24 will enter compartment 22 respectively through the said stove sides 5 and 6, to which they will be affixed in any usual secure manner, adjacent the said top 9. Exterior to said sides 5 and 6, the pipes 23 and 24 extend vertically upward, as is best shown in Fig. 3, to a level just under the top of the said enclosing shell 2, and thence will converge to enter respective sides of the enlarged upstanding vent pipe 25. The said vent pipe 25, across the top is of a size to fit snugly within the lower end of the said vent pipe 4.

The enclosing shell 2 is also substantially constructed of sheet metal, has a solid top 26, perpendicular to which are its solid sides respectively 27 and 28. At its outer front and back edges, top 26 is flanged at right angles downwardly as shown at 29 and 30 respectively. Said sides 27 and 28 are flanged inwardly at right angles as shown at 31 and 32 from their tops to respective points shown as 33, at which points the flanges terminate abruptly. The lower end portions 36 of said sides 27 and 28 are respectively provided with a line of transverse perforations shown as 34. Slightly above the perforations 34 the shell 2 is provided with a substantial sheet metal bottom 35, securely attached as may be desired to the respective shell sides 27 and 28. Between said sides 27 and 28 and at both front and back, the bottom 35 is upwardly flanged at right angles as shown at 60. Centrally, the said shell top 26 is perforated for the insertion of the extending vent tube 4 which is rigidly secured to said top by brazing or the like. The extreme lower portion of the said shell side 27 is centrally perforated as shown at 37 for permitting the passage therethrough of the said gas supply pipe 15.

In Figure 3 the stove 1 is shown assembled within the shell 2, the lower ends 16, as best shown in Fig. 2, of the respective stove sides 5 and 6 are resting upon the bottom 35 of the shell 2, the lower projecting ends 36 of said shell sides 27 and 28 are resting upon the floor 38. In this view the front door 3 is removed and an unobstructed view is had of the upper

portion of the rear door 3 and its slotted construction. Exteriorly across the top 26 and down the sides 27 and 28 of the said shell 2 is shown a covering of a cementitious asbestos heat insulation 40, while adjacent thereto, but not contacting same are respectively shown the wall's bridge plates 42 and wall studs 41.

In Fig. 3 is also shown the respective insulating air spaces 43, 44, 45, and 46. Numeral 43 designates the air space between the said shell bottom 35 and the floor 38; numeral 44 designates the air space between the said stove bottom 10 and the said shell bottom 35; numeral 45 indicates the air space between the said asbestos insulation 40 and said wall studs 41; and numeral 46 indicates the air space between said insulation 40 and said bridge plates 42.

In the installation here shown, the upper portion of the said vent pipe 4 of shell 2 is received within the lower end of the longer vent pipe 47 which passes on upward through the attic and roof not shown. Said vent pipe 47 is covered in any usual or desired manner with suitable heat insulation shown as 48, and neither pipe nor insulation is permitted to contact wood or other inflammable structure. The ceiling plate 49 is shown cut away at 50.

In Fig. 5 is shown one of the plurality of rectangular doors 3, of sheet metal, provided at its lower portion with a plurality of horizontal louvres 51, and thereabove, with a plurality of vertical louvres shown as 52. Each of said doors 3 are hinged as shown at 53, and each is provided with a latch 54. Below the respective doors 3, the bottoms of which are flush with said lower ends 33 of the respective said flanges 31 and 32, said shell front 7 and back 8 are each provided with a removable plate 55 having a plurality of perforations shown as 56, and a single perforation, not shown, through which extends the handle 57 of the gas valve 58. It is to be understood that the said stove 1 and said shell 2 are of such relative sizes and shapes that when placed one within the other, the box like structure of the stove will not contact the walls, the top or the bottom of the shell 2, except where the said bottom ends 16 of the said stove sides 5 and 6 rest upon the said bottom 35 of the shell 2.

In operation, when the device is assembled as shown in Fig. 3, and when enclosed as shown in Figs. 4 and 5, it will be apparent that air to feed the flame 21 will enter, first, through the perforations 56 of plates 55, thence through perforations 11 of stove front 7. The fumes of the flame will rise and pass through perforation 18, vents 23, 24 and 47, and thence out of the building. Heat generated within the stove and radiated by the front, back, top and sides of same will be circulated thereabout within the confines of the shell 2 and will find means of exit through

the plurality of louvres 52 in the upper portions of the two oppositely disposed doors 3. Cool air will be drawn in through the louvres 51, below the upper louvres 52. By this means a rapid circulation of warm air will be had within each of the rooms served by the single device.

Obviously, the invention is susceptible of embodiment in forms other than that which is illustrated in the accompanying drawings and described herein, and applicable for uses and purposes other than as detailed, and I therefore consider as my own all such modifications and adaptations and other uses of the form of the device herein described as fairly fall within the scope of my invention.

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

1. A stove having a burner, an inclosed element for housing said burner, and an enclosing element for said inclosed element adapted to be disposed in a wall of a building, said enclosing element embodying a box-like structure having closed sides and top and a raised bottom, and an open front and back, and having a heat insulating covering upon its sides and top, said inclosed element embodying a box-like structure of smaller dimensions than said enclosing element, having closed sides, top, front and back, and having a raised bottom, said front and back having a plurality of perforations in their lower portions for supplying air to said burner, said inclosed element disposed within said enclosing element in spaced relation to its sides, top, and bottom, a pair of louvred doors for the front and back of said enclosing element, and means for conveying fumes from within said inclosed element to a flue in said building.

2. A stove adapted for installation in a wall for heating rooms on both sides of said wall, having in combination, a burner, an inclosed element for housing said burner, and an enclosing element for housing said enclosed element, said enclosing element embodying a box-like structure having closed sides and top and a raised bottom, and an open front and back, and having a heat insulating covering upon its sides and top, said inclosed element embodying a box-like structure of smaller dimension than said enclosing element, having closed sides, top, front and back, and having a raised bottom, said front and back having a plurality of perforations in their lower portions for supplying air to said burner, said inclosed element disposed within said enclosing element in spaced relation to its sides, top, and bottom, a pair of louvred doors for the front and back of said enclosing element, and means for conveying fumes from within said inclosed element to a flue in said building.

CHARLES GWALTNEY.