Aug. 21, 1928. 1,681,606

J. M. BLANCHARD

FIREPLACE

Original Filed Oct. 27. 1922

Fig. 1.

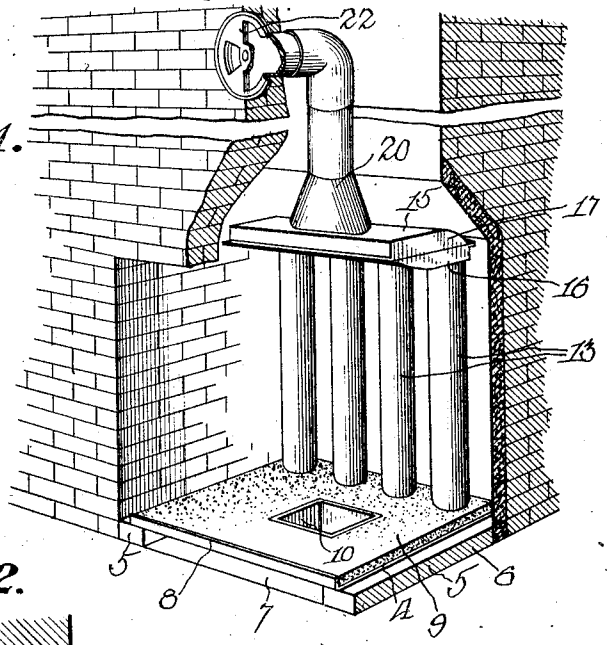


Fig. 2.

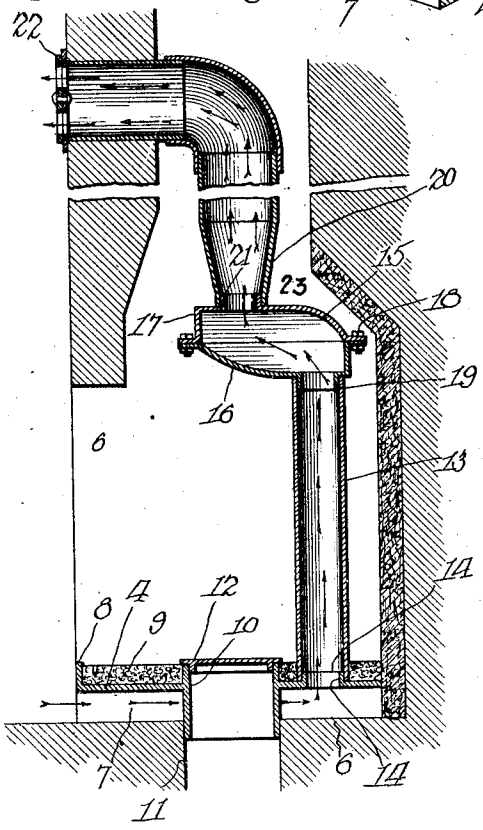
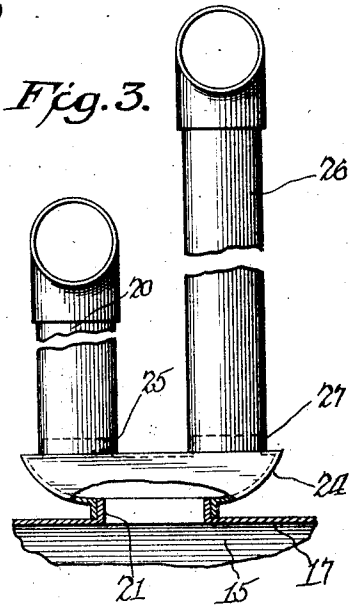


Fig. 3.



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UNITED STATES PATENT OFFICE.

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FIREPLACE.

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The invention relates to fire-places and its object is to provide a heater which is adapted to be installed in a fire-place to increase its heating efficiency.

The invention consists in the several novel features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawings: Fig. 1 is a perspective of a fire-place and heater embodying the invention. Fig. 2 is a vertical section. Fig. 3 is a detail of a modification.

The invention is exemplified in a heater which comprises a floor 4 formed of suitable cast metal and supported at either side upon a course of brick 5, so that the floor will be spaced from the floor 6 of the fire-place and form a cold air duct 7. This floor 4 may, if desired, be formed with a flange 8 at its front and covered with a layer of cement 9. An ash duct 10 is formed in the floor 4 and extends upwardly to the top of the cement 9 and downwardly into the usually built-in ash flue 11. A cover 12 is removably placed on the upper end of the ash duct 10, so that the latter will be closed while the fire-place is in use. The heater also comprises a series of vertical pipes 13 which are secured at their lower ends upon nipples 14 on floor 4. The lower ends of these pipes are in communication with the cold air duct 7 below the floor. The upper ends of pipes 13 are connected to a drum 15 which is disposed in the upper portion of the fire-place where it will be subjected to the heat of the flames from the fire on the heater. This drum is preferably formed of horizontal sections 16 and 17 which are separately formed and have their contiguous portions flanged and bolted together as at 18. Drum-section 16 is provided with nipples 19 to enter and for connection with the upper ends of the heater pipes 13. An outlet pipe 20 is connected to the top section 17 of the drum which is provided with a nipple 21 to receive the lower end of said outlet pipe. The latter extends upwardly from the drum and thence forwardly through the breast or wall across the top of the fire-place. At its front end, the outlet pipe is provided with a register 22 by which the discharge of air from pipe 20 may be regulated.

The heater is adapted for any kind of flue and in use, the products of combustion in being drawn upwardly through the smoke flue 23, will pass around pipes 13 and the drum 15. This will cause the hot air to rise and pass through the outlet pipe 20 and register 22 into the room. The cold air will be drawn through duct 7 between the heater floor and the fire-place floor and upwardly through the pipes 13 into the drum. The drum is formed of sections 16 and 17 so that one section may be reversed relatively to the other and, as a result, the outlet pipe may be offset with respect to the pipes, as is shown in Figs. 1 and 2 or may be reversed to bring the outlet pipe substantially in vertical line with the pipes 13. Pipes 13 are spaced apart so that the products of combustion may pass between and encircle them to efficiently heat the air in said pipes. The flames envelop the drum and cause the air therein to be intensely heated. The vertical portion of the outlet pipe is preferably disposed in the smoke flue so that the air therein will be further heated in transit to the point of discharge and to accelerate the discharge. The heater floor may be installed without alteration of the fire-place. The ash-duct in the heater floor or bed is extended through the air duct 7 so that no dust will pass into the air duct. The metal pipes are free to expand and contract without warping or disturbing the other heater parts. Any number of heater pipes, according to the size of the fire-place, may be used. The heater pipes are connected to the back portion of the drum so that the front portion will be disposed above the flames to efficiently heat the air in the drum. The several parts of the heater are removable so that substitution may be made in event any should become burnt out. The modification shown in Fig. 3 is adapted for places where it is desired to heat two rooms, one of which is disposed above the other. In this construction, a fitting 24 is connected to the nipple 21 on the drum 15. This fitting is provided with a nipple 25 for connection to an outlet pipe 20 similar to the one shown in Figs. 1 and 2, and a nipple 27 for a second outlet pipe 26 which leads to and discharges air into the upper room.

The invention exemplifies an improved fire-place heater in which the strata of cold air adjacent the floor is drawn into the heater, heated therein and discharged into the room at a higher level; which may be readily installed in an ordinary fire-place; and which is efficient in use. A characteristic of the

invention is that the metal parts of the heater are quickly heated so they tend to overcome any down-draft of the products of combustion.

The invention is not to be understood as restricted to the details set forth, since these may be modified within the scope of the appended claims, without departing from the spirit and scope of the invention.

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

1. The combination with a fire-place having a built-in floor and an open front, of a heater therein comprising means forming a cold air inlet adjacent the said floor of the fire-place, a drum in the upper portion of the fire-place formed of upper and lower substantially horizontal reversible sections removably secured together, substantially straight pipes between and removably connected to the inlet and the lower section of the drum, means forming a hot air outlet, and a connection between said outlet and the upper section of the drum, said connection being offset relatively to the longitudinal center of the drum so that the position of the outlet may be changed by reversing the upper section relatively to the lower section.

2. The combination with a fire-place having a built-in floor and an open front, of a heater therein comprising means forming a cold air inlet adjacent said floor of the fire-place, a drum in the upper portion of the fire-place formed of upper and lower substantially horizontal reversible sections removably secured together, an upwardly extending nipple on the upper section, downwardly extending nipples on the lower section, substantially straight pipes extending between and removably connected to the auxiliary floor and the said downwardly extending nipples of the lower section, and means secured to the upwardly extending nipple on the upper section and forming an outlet for the hot air from the drum, the nipples on the sections being offset relatively to the longitudinal center of the drum so that the position of the nipples may be changed by reversal of the sections.

Signed at Portland, Oregon this 16th day of October, 1922.

JULIUS M. BLANCHARD.