Nov. 8, 1938. K. S. JENSON 2,135,899

FURNACE DOOR

Filed July 26, 1937

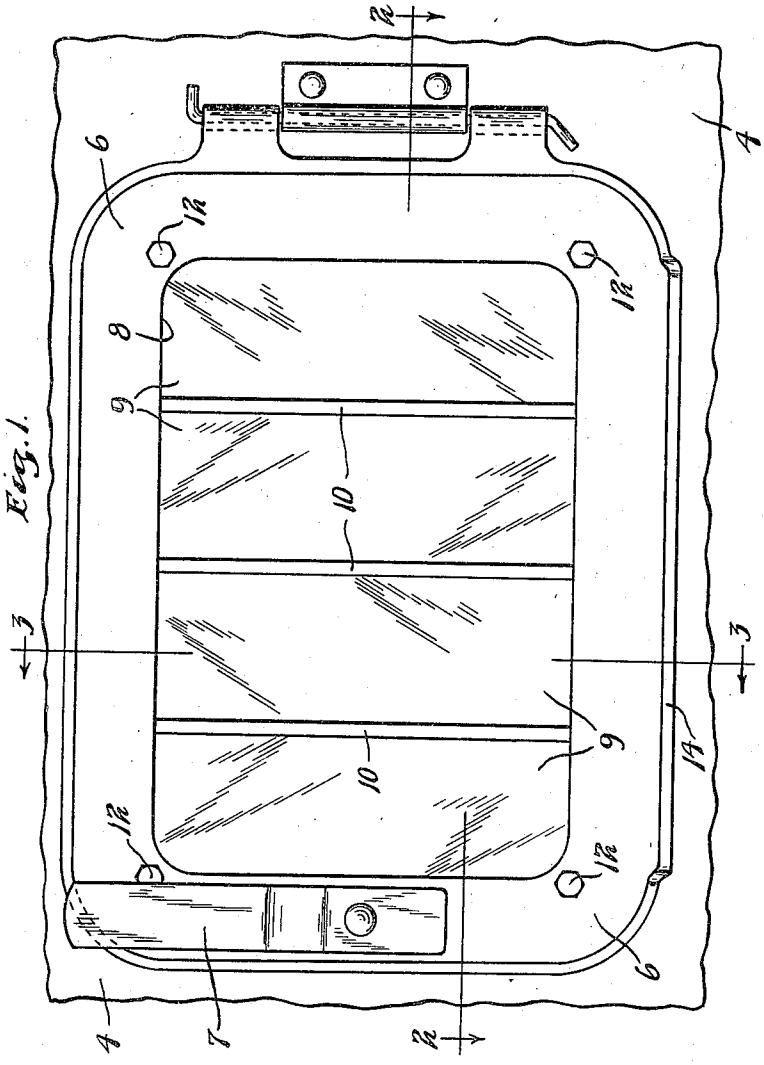


Fig. 1.

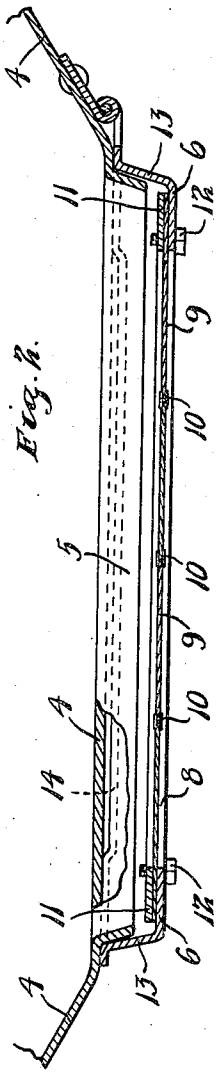


Fig. 2.

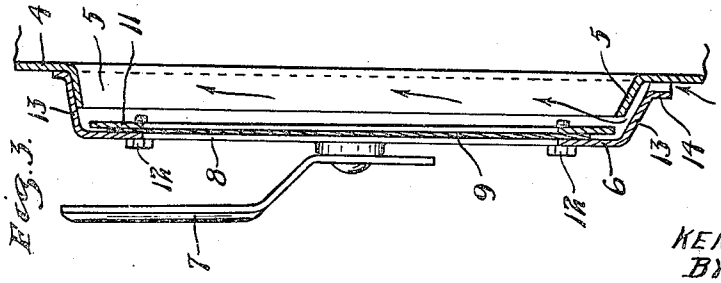


Fig. 3.

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# UNITED STATES PATENT OFFICE

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## FURNACE DOOR

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2 Claims. (Cl. 126—200)

This invention relates to means for preventing the deposit of soot and other products of combustion upon the glazed inspection windows of stoves and the like.

Many stoves and furnaces have windows or inspection openings usually covered with glass or mica so that the fire within the stove may be conveniently seen without opening a door. This is true of nearly all types of stoves including coal stoves, kerosene burners, and other types of burners utilizing heavier distillates. There is one major inconvenience, however, which lies in the fact that soot and other products of combustion quickly form a heavy deposit upon the inner side of the glass or mica and shut off any view therethrough. Therefore, it is necessary to frequently clean the inner side of the transparent material used to cover such inspection openings, and this cleaning not only entails a waste of time, but results in the soiling of the hands of the person doing the cleaning, and often soils the person's clothing.

It is, therefore, a general object of my invention to provide means for preventing the deposit of products of combustion upon the inner side of the transparent material covering the inspection opening of a stove so that the fire within the stove or furnace may be readily viewed at any time.

The above and other objects and advantages of the invention will more fully appear from the following description made in connection with the accompanying drawing wherein like reference characters refer to the same or similar parts throughout the views, and, in which:

Fig. 1 is a front elevation of a stove door with a broken away portion of the stove wall and an inspection opening in the face of the door;

Fig. 2 is a section taken substantially on the line 2—2 of Fig. 1; and

Fig. 3 is a section taken substantially on the line 3—3 of Fig. 1.

In the particular embodiment of the invention shown in the drawing, there is illustrated a fragmentary portion of the side wall of a stove or furnace 4. The wall of the stove is provided with an opening which, in this particular illustrative construction, has an angular flange 5 formed therearound. The opening is normally covered by a suitable door 6 which is hingedly mounted in any suitable way. A handle 7 may be provided for opening said door.

The door is provided with an inspection opening 8, which is glazed preferably with a sheet of mica 9. Pairs of strips of thin metal 10 are provided at spaced points on opposite sides of the sheet of mica to reinforce the same and prevent breakage thereof. This glazed opening is generally provided in nearly every type of stove or burner to permit inspection of the fire within the stove. The sheet of mica 9 is also held in place by a rectangular metal strip 11 extending around the edge of the door opening and it is held tightly against the mica by means of screws 12. Although I have shown the inspection opening in a stove door, it is not necessary for the purpose of this invention that it be combined with a door, but the opening can be located in any suitable position in the wall of a stove.

The door 6, as best indicated in Figs. 2 and 3 is provided with an inwardly turned flange 13, which is shaped to fit over the flange 5 which defines the opening in the wall of the stove. I wish to make it clear, however, that the flange 13 on the door and the flange 5 around the opening of the stove are not essential features of construction. The lower edge of the flange is pressed outwardly slightly for a distance preferably substantially the same as the length of the lower edge of the sheet of mica 9. This outwardly pressed edge 14 provides a space between the edge of the door and the wall of the stove, as best shown in the lower part of Fig. 3, and the flange 13 along the lower part of the door is so formed that it is spaced from the flange 5 which defines the opening in the stove casing to provide an air conduit from the exterior of the stove to a point along the bottom edge of the mica sheet 9. This opening or conduit permits a draft of air to flow into the casing inside of the mica sheet and because of the natural upward draft within the stove, the stream of fresh clean air entering said opening will flow upwardly beside the sheet of mica and prevent products of combustion from coming in contact with and being deposited on said mica sheet. The draft of air coming in through the opening is insufficient to materially affect the burning of the stove or furnace, but it is sufficient to prevent the combustion products from reaching the mica. Therefore, at all times the transparent material is kept clean and the fire within the stove may be readily viewed. Any type of opening may be provided, but of course, it is preferred that the opening be along the bottom of the transparent sheet and, although any type of door or inspection opening construction may be utilized in conjunction with my invention, it will be noted that the flange 5 which surrounds the opening in the stove casing is positioned at such an angle that the inwardly flowing air is directed

toward the sheet of transparent material, thus insuring close proximity of the layer of clean air to the sheet 9.

If the invention is not used in conjunction with a stove door, the stove can be constructed merely with a window or glazed inspection opening and any suitable air inlet can be provided preferably immediately beneath said inspection opening and the transparent material covering the inspection opening will be kept free of products of combustion in the same manner as if the above described construction is utilized.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departing from the scope of my invention.

What is claimed is:

1. In a stove and the like, a wall having an opening therein, a rim on said wall defining said opening, a closure for said opening comprising a frame having a flange closely fitting said rim at the top and sides thereof, and spaced from said rim at the bottom portion thereof, the space between the bottom portion of said rim and said frame providing an air inlet, and a transparency carried by said frame, and said air inlet being positioned to direct air toward said transparency.

2. The structure in claim 1 and said frame extending slightly below said rim, and at least a portion of the lower part of said frame being spaced outwardly from the wall of said stove.

KENNETH S. JENSON.