May 11, 1954 W. W. EDWARDS 2,678,038

DRAFT HOOD

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FIG. 1

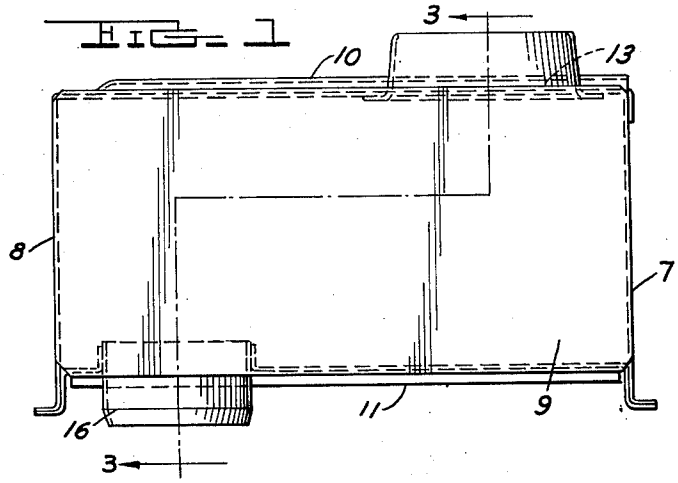


FIG. 2

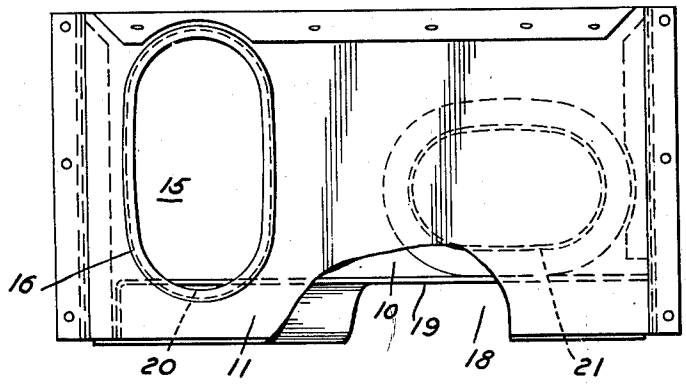
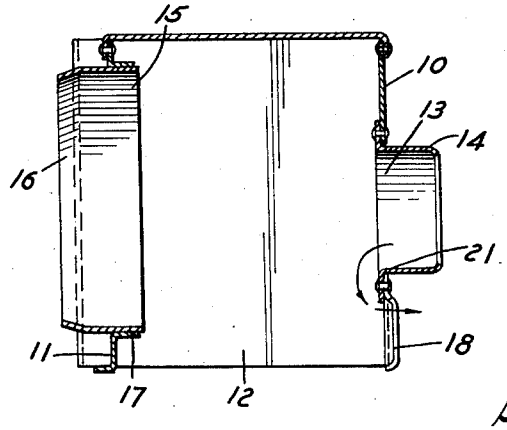


FIG. 3



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FIG. 4

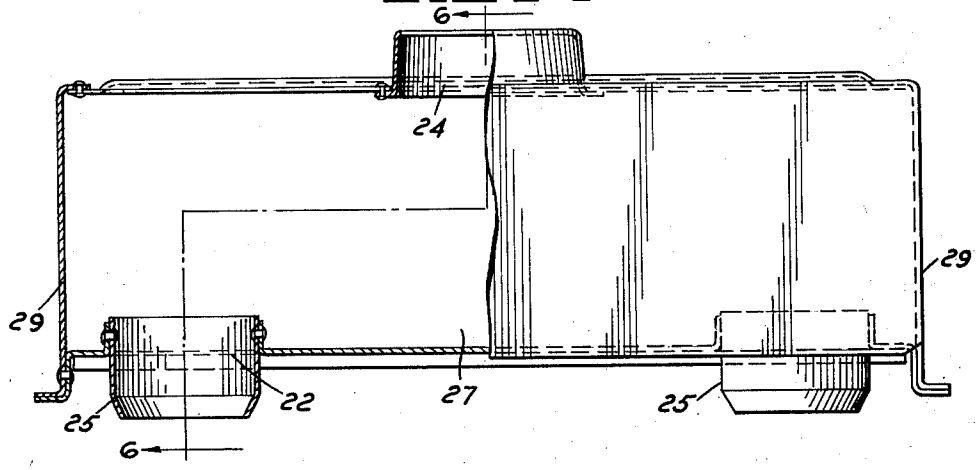


FIG. 5

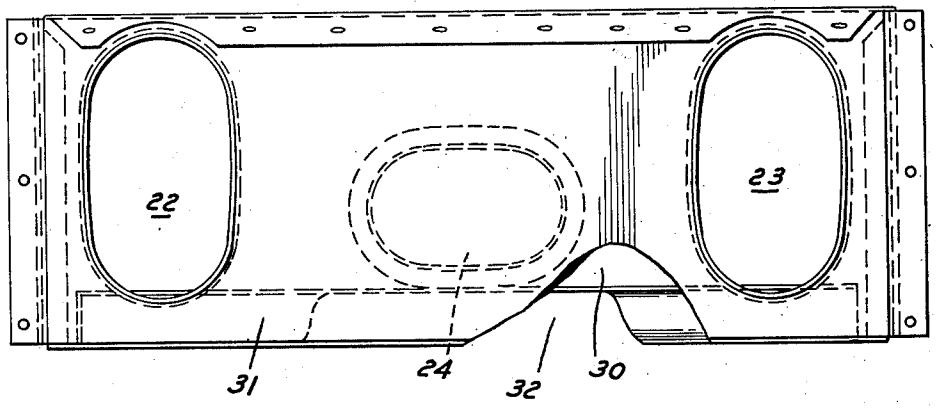
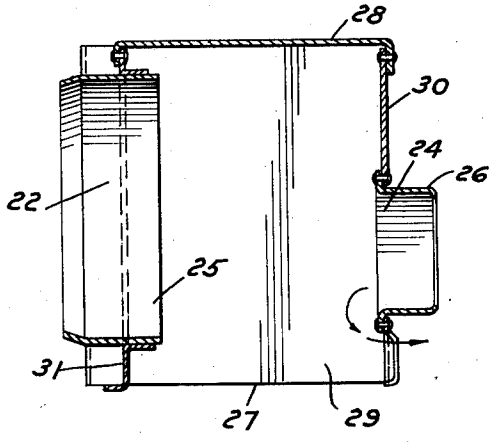


FIG. 6



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UNITED STATES PATENT OFFICE

2,678,038

DRAFT HOOD

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Application September 18, 1950, Serial No. 185,450

5 Claims. (Cl. 126—307)

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This invention relates to a draft hood for use on a gas burning furnace or heater.

This invention contemplates a draft hood for a gas furnace of simple structure which will effectively prevent any down draft from the stack from entering the furnace or heater and blowing out or extinguishing the burner flame or in any wise chocking or interferring with the proper combustion of the gas fuel in the combustion chamber of the furnace.

It is also an object of this invention to produce a draft hood for a gas burning furnace or heater which will maintain the proper pressure or draft in the hood so that the gas burner will burn with the proper efficiency.

In the drawings:

Fig. 1 is a top plan view showing the draft hood which is the subject of the present invention.

Fig. 2 is a rear elevation of the same.

Fig. 3 is a section along the line 3—3 of Fig. 1.

Fig. 4 is a top plan view partly broken away showing a modified form of draft hood.

Fig. 5 is a rear elevation of the same.

Fig. 6 is a section along the line 6—6 of Fig. 4.

Referring more particularly to the drawings it will be seen that the draft hood consists of a rectangular box, preferably of sheet metal, having end walls 7 and 8, top wall 9, front wall 10 and a rear wall 11. Walls 7, 8, 10 and 11 are all plane walls and extend vertically. The bottom of the rectangular box is open as at 12.

The box is provided with an outlet 13 in its front wall 10 which is provided with a collar 14 by means of which outlet 13 is connected into the flue or chimney. The rear wall 11 of the box is provided with an inlet opening 15 which is provided with a collar 16 by means of which the inlet is connected with the radiator or economizer of the gas burning heater as furnace. The collar 16 extends or projects into the box as at 17. The extent of projection 17 of collar 16 inwardly of rear wall 11 will vary with furnaces of different heating capacity, but as a general rule the projection 17 should extend into the draft hood a distance at least of the order of about one-half inch. It should also be noted that inlet 15 is axially offset from the outlet 13. Any down draft entering the draft hood through outlet 13 will strike the opposite wall 11, roll around and discharge through the open bottom 12. This down draft will be prevented from entering the inlet opening 15 by the inwardly projecting annular ring or flange portion 17 of collar 16. Collar projection 17 also prevents any eddy currents in the box from leaving the box by way of the inlet opening 15.

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From the above it will be noted that this draft hood is characterized by its extreme simplicity and the absence of any baffle construction within the draft hood.

The pressure head or draft in the hood is regulated by the depth of the hood below the flue outlet 13. Since the present hood has a depth below outlet 13 which will maintain a pressure head in the draft hood which is greater than allowable, the front wall 10 of the hood is provided with a spillway 18 in the form of a notch cut out of the lower edge of front wall 10. It will be noted that the upper edge 19 of spillway 18 extends above the bottom 20 of inlet opening 15 and below the bottom 21 of outlet opening 13. Spillway 18 is positioned in general below outlet opening 21 and to one side of the inlet opening 15.

The number of inlets into the draft hood will correspond to the number of outlets from the economizer or radiator. The instant draft hood can have as many inlets as desired and Figs. 4, 5 and 6 illustrate the instant draft hood with a plurality of inlets. The form of draft hood shown in Figs. 4, 5 and 6 is the same as that shown in Figs. 1 to 3 except that the hood is provided with two inlet openings 22 and 23 offset from, and positioned on opposite sides of, the outlet opening 24. The principal form of the invention shown in Figs. 1 to 3 is for use with a furnace having one economizer or radiator whereas the draft hood shown in Figs. 4 to 6 is for use with a furnace having two economizers or radiators.

Inlet openings 22 and 23 are provided with collars 25 which are identical in structure and function to collar 16 described above. The outlet opening 24 is provided with a collar 26 identical in structure and function with collar 14 described above. This form of draft hood is also a rectangular box having an open bottom 27, a flat top wall 28, vertical end walls 29 and vertical front and rear walls 30 and 31, respectively. Spillway 32 in front wall 30 is positioned between inlet openings 22 and 23 and beneath outlet opening 24.

From the above it is evident that the instant draft hood, which is very efficient in operation, is characterized by its extremely simple structural features such as the interior flanges on the inlet openings, offset inlet and outlet openings, box-like structure with vertical walls, full bottom opening and the spillway to govern the maximum pressure head in the draft hood.

I claim:

1. A draft hood comprising a box having a closed top, a peripheral side wall and an open bottom, an outlet opening in said side wall, an inlet opening in said side wall opposite to said outlet opening, said inlet and outlet openings being offset from one another so that said openings are oppositely disposed in nonoverlapping relation, the portion of the side wall opposite said outlet opening being imperforate, and a collar extending around said inlet opening on the inside of said box whereby a down draft from said outlet into said box strikes the side wall opposite said outlet and the collar shields the inlet from said down draft, said side wall comprising vertical end wall portions and vertical front and rear wall portions, said inlet opening being located in the rear wall portion and said outlet opening being located in the front wall portion, said front wall portion being provided with a spillway in the form of a cut out notch positioned below said outlet opening and offset to one side of the inlet opening.

2. The draft hood defined in claim 1 wherein the upper edge of the spillway is positioned below the outlet opening and above the lowermost point of the inlet opening.

3. The draft hood defined in claim 2 wherein the inlet opening is provided with a cylindrical collar extending exteriorially of the rear wall portion of the box and having its axis generally perpendicular to the front wall portion of the box.

4. The draft hood defined in claim 3 wherein

the collar for the inlet opening extends also interiorly of the rear wall portion of the box and is cylindrical with its axis positioned generally perpendicular to the rear wall portion of the box and offset from the axis of the outlet opening.

5. A draft hood comprising a box having a closed top, a peripheral side wall and an open bottom an outlet opening in said side wall, an inlet opening in said side wall opposite to said outlet opening, said inlet and outlet openings being offset from one another so that said openings are oppositely disposed in nonoverlapping relation, the portion of the side wall opposite said outlet opening being imperforate, and a collar extending around said inlet opening on the inside of said box whereby a down draft from said outlet into said box strikes the side wall opposite said outlet and the collar shields the inlet from said down draft, the portion of said side wall provided with said outlet opening being provided with a spillway in the form of a cut out notch positioned below said outlet opening and offset to one side of said inlet opening.

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