July 17, 1956 F. K. DAGGETT 2,754,748

VENT HOOD AND MOUNTING THEREFOR FOR LAUNDRY DRYER DUCTS

Filed July 13, 1953

FIG. 1

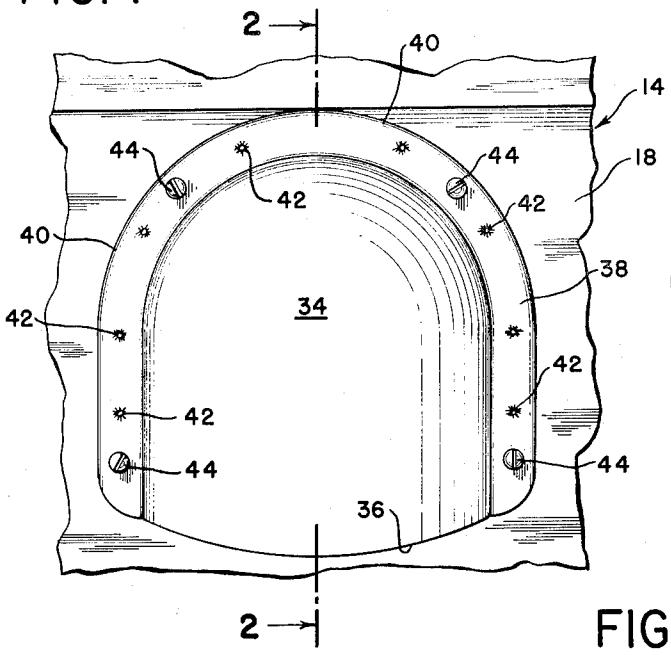
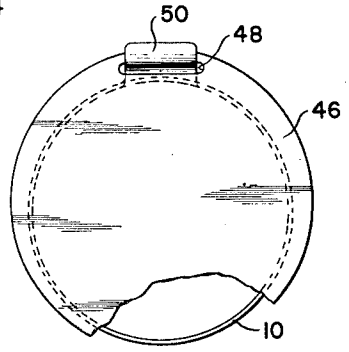


FIG. 3



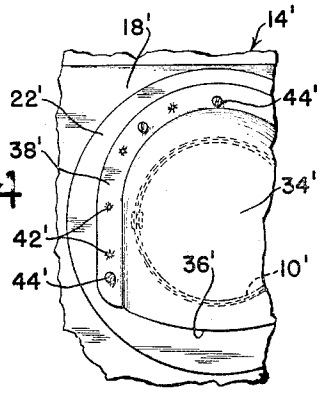


FIG. 4

FIG. 2

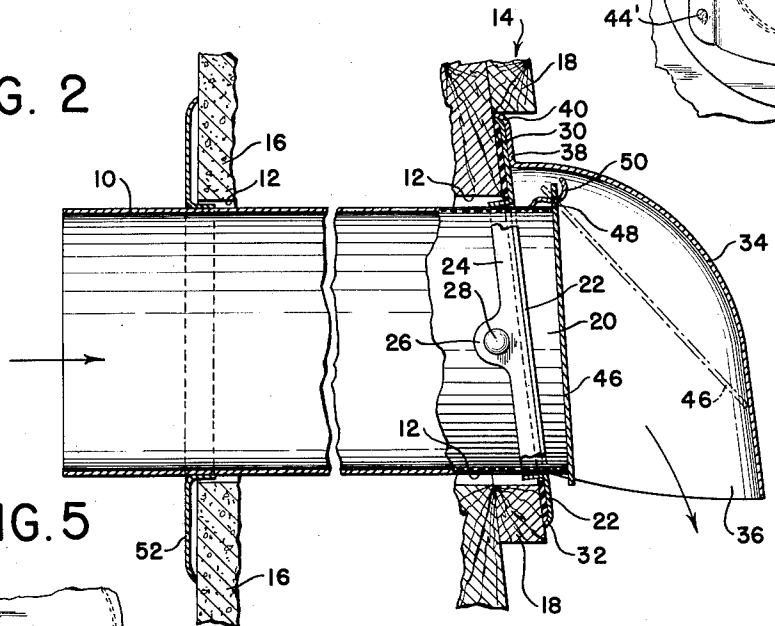
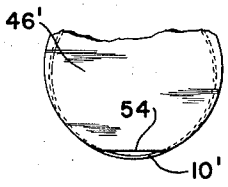


FIG. 5



INVENTOR

Frederick K. Daggett

BY

Pennie Edmonds Morton Barrows & Taylor

ATTORNEYS

United States Patent Office 2,754,748 Patented July 17, 1956

2,754,748

VENT HOOD AND MOUNTING THEREFOR FOR LAUNDRY DRYER DUCTS

Frederick K. Daggett, Pine Orchard, Conn., assignor to The Flexible Tubing Corporation, Gilford, Conn., a corporation of Connecticut

Application July 13, 1953, Serial No. 367,545

3 Claims. (Cl. 98—119)

This invention relates to an improved air discharge duct and hood assembly and more particularly to such an assembly for venting the moist air from home laundry dryers through an outside wall of the house.

The extensive use of automatic home laundry or clothes dryers has created the problem of providing an effective readily-installed vent duct arrangement for venting the moist air from the dryer through an outside wall of the house or building in which the dryer is used. Most laundry or clothes dryers include a blower and heater for delivering a stream of warm air into the drying compartment of the dryer, and an outlet duct for delivering a stream of moist air from the drying compartment. This stream of moist air must be conducted to the outside atmosphere in order to avoid excess moisture in the home, which in winter condenses and freezes on the windows, and in summer heats and increases the humidity of the atmosphere in the house.

The primary object, therefore, of the present invention is to provide an air discharge duct assembly for venting the warm moist air from a home laundry dryer through the outside wall of the home.

A further object of the invention is to provide an air discharge duct assembly which is readily adaptable to various types of building structures and at the same time presents a neat and pleasing appearance from the outside.

A further object of the invention is to provide an air discharge duct assembly having means for fitting and sealing the duct assembly accurately with respect to the outside surface of a building wall, regardless of the angle formed by shingles, clapboards or the like.

According to the invention, it has been discovered that an air discharge duct extending laterally through the wall of a building can be effectively sealed with respect to the outside surface of the wall by providing a flange on the discharge end portion of the duct pivoted thereto on a horizontal pivot axis so that when the duct is inserted through an opening in the building wall, the inside face of the flange will adjust itself to fit flat against the wall surface regardless of its angle. Some outside wall surfaces are vertical but where shingles or clapboards and similar materials are employed, the wall surface at the position of the duct will be inclined with respect to the vertical.

In a preferred construction, the adjustable flange includes an inner ring portion or band loosely fitting around the discharge end portion of the duct and attached thereto on opposite sides of the duct by pivot members which will permit the flange to rock through a considerable angle before the upper and lower portions of the ring bind against the outer surface of the duct. The discharge end portion of the duct beyond the flange is cut so that it slopes outwardly and downwardly, and in one form of construction a flap pivoted at the top of the duct fits against the end of the duct and provides a tight seal against external air pressure. The assembly also includes a hood mounted on the outside surface of the flange covering and concealing from view the flap and discharge end portion

of the duct, the hood having a downwardly-directed outlet for air.

The improved air discharge duct assembly of the present invention includes other features and advantages as described in detail hereinafter in connection with the accompanying drawings forming a part of this application.

In the drawings:

Fig. 1 is a broken elevational view of a part of a typical building wall showing the appearance of the hood and duct assembly from the outside of the building or house;

Fig. 2 is a broken sectional view showing the details of construction of the duct and hood assembly in position, taken on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary view partly broken away showing the arrangement of the closure flap under the hood at the discharge end of the duct;

Fig. 4 is a broken elevational view similar to that of Fig. 1, drawn to a smaller scale showing a modified form of flange construction; and

Fig. 5 is a fragmentary view showing a modified form of flap construction.

Referring to Figs. 1, 2 and 3 of the drawings, the improved air discharge duct and hood assembly includes a horizontal sheet metal cylindrical duct 10 extending horizontally through an opening 12 in an outside wall 14 of a building or home finished inside with plaster 16 and outside with clapboards 18. The discharge end portion 20 of the duct 10 projects outside the clapboard 18 through which it extends and is circled by a loosely fitting flange 22 having an inturned ring or band portion 24 loosely fitting around the duct 10. On opposite sides of the duct the ring portion 24 is provided with ears 26 by which the flange is pivoted to the duct by means of rivets 28 providing a horizontal pivot axis at a right angle to the axis of the duct and coincident with a horizontal diameter through the duct at the position of the rivets.

In Fig. 2 the flange 22 is inclined at an angle with respect to the axis of the duct 10 and fits neatly against the surface of the clapboard 18 around the opening 12 for covering and closing off the opening around the duct. A rubber gasket 30 is provided between the inside surface of the flange 22 and the clapboard 18 in order to provide a tight joint to prevent the entry of rain and water, and the periphery of the flange 22 is turned in as at 32 to augment the seal between the flange and the clapboard.

The duct assembly includes a hood 34 covering the discharge end of the tube 10 and providing a downwardly directed outlet opening 36. The hood 34 includes an inverted U-shaped flange 38, which, in the form of construction shown in Figs. 1 and 2, covers the peripheral portion of the flange 22, except for the lower part, and includes an inturned edge 40 extending around the inturned edge 32 of the flange. The flange 38 of the hood 34 is spot welded to the flange 22, as indicated at 42, or it may be riveted thereto. The flanges 22 and 38 and the rubber gasket 30 are provided with matching holes at spaced intervals for receiving screws 44 by which the duct and hood assembly is firmly secured to the outer surface of the wall 14.

The discharge end portion 20 of the duct 10 terminates in a plane, or is cut at an angle which slopes downwardly and outwardly with respect to the axis of the duct and this end is closed by a sheet metal flap 46 provided with a slot 48 (Fig. 3) at its top engaged by a sheet metal pivot hook 50 which may comprise a part of the material of the duct 10, or be a separate piece of sheet material welded to the upper portion of the duct 10. When air is being forced from a dryer through the duct 10, the flap 46 is lifted from its seat and assumes the dot-and-dash line position shown in Fig. 2, so that it directs the air flow downwardly to the discharge opening 36 provided by the hood 34. When air is not being discharged through the

duct 10, the flap 46 assumes the full line position shown in Fig. 2 and provides a tight seal against external air pressure. Due to the inclined edge of the discharge end of the duct, the flap 46 rests directly thereon to prevent entry of outside air.

The improved duct and hood assembly of the present invention is readily and quickly installed in a horizontal opening in a building wall, since the flange 22, hood 34, and flap 46 are all attached to the duct 10. The inner end of the duct is simply inserted in the opening 12 in the wall from the outside and forced in until the flange 22, with or without the rubber gasket 30 firmly engages the outer surface of the wall 14, as for example the sloping surface of the clapboard 18. Thereafter, the screws 44 are driven in and the installation is completed, except for the inside finishing flange 52, which includes an inturned periphery engaging the plaster 16 and a cylindrical ring section which fits snugly on the peripheral surface of the duct 10 and extends into the opening 12. The inner end of the duct 10 is adapted to receive connecting ducting from the dryer or to fit the dryer outlet.

The flange 22 shown in Fig. 2 may have the structure shown at 22' in Fig. 4 to provide a different outside decorative effect and a flange with considerable surface and one more readily cut than the flange 22 which has a non-circular periphery. In this view, the assembly includes an annular flange 22' for the duct 10' having a circular periphery, to the face of which the flange 38' of the hood 34' is attached by means of spot welds 42' or by rivets. The periphery of the hood flange 38' does not extend to the periphery of the flange 22' but it is sealed flat against the flange 22', and as in Fig. 1, includes the holes for screws 44. In other respects the construction is the same as that described in connection with Figs. 1, 2 and 3 or 5.

In either form of construction of the flanges 22 and 22', their peripheries may or may not be provided with a turned-in peripheral edge around the rubber gasket. Instead of using a rubber gasket, the pivoted flange may be sealed with respect to the surface of the building wall by means of a caulking compound or other plastic sealing material.

The flap 46 shown in Figs. 2 and 3 may have the structure shown in Fig. 5, in which the flap 46' is shown in the form of a circular disc cut on a horizontal chord at the bottom at 54 to provide about a ⅛-inch opening at the lower discharge end of the duct 10'. The moisture coming through the duct from the dryer in freezing weather will remain long enough after the dryer has completed its operating cycle to freeze the flap against the duct. The purpose of the cut at the bottom of the flap 46' is to permit enough air to move through the system when the dryer is again started to melt the ice from around the flap and duct and thus permit the flap to lift with the air pressure in the usual manner.

While the various parts of the air discharge duct and hood assembly may be made of various sheet metals or other sheet materials they are advantageously made of sheet aluminum, which is light and readily pressed into the desired shapes, and which provides a durable construction resisting the corrosive action of the warm moist air delivered through the duct and hood as well as the action of the outside atmosphere.

What I claim is:

1. An air discharge duct assembly for home laundry dryers for venting moist air through an opening in the outside wall of a building, comprising an air discharge duct extending horizontally through said opening having a discharge end projecting from the outside surface of the wall, a flange extending around said projecting end, means for adjustably pivoting said flange to the projecting end of said duct on a horizontal pivot axis, said flange being adjustable on said axis to the angle of the outside surface of the wall and to fit said surface at the location of said duct, a hood attached to the outside surface of said flange along a line above the discharge end of said duct and extending down over said discharge end and formed to provide a discharge outlet at its lower end, and means for securing said flange to the outer surface of the building wall.

2. An air discharge duct assembly for quick installation in a horizontal opening in a building wall for venting home laundry dryers, comprising an air discharge duct adapted to be inserted in said opening from the outside and to extend through the building wall for delivering air from the dryer to the outside atmosphere, a flange extending around the discharge end of the duct for engaging the outside wall of the building around said opening, means for adjustably pivoting said flange on said duct on a horizontal axis adjacent the discharge end of the duct, said flange being adjustable on said horizontal axis so that its inside surface fits the particular sloping surface of the outside of the building wall at the location of the duct and thereby closes off the opening around the duct when the flange is forced against the outside surface of the building, a hood attached to the outer surface of said flange covering the discharge end of said duct and providing a downwardly directed outlet for the discharge of air, the discharge end of said duct being cut on a plane sloping downwardly and outwardly with respect to its axis, and a flap of sheet material pivoted at the top of the duct and resting on said sloping end.

3. An air discharge duct assembly as claimed in claim 1, in which said hood includes a flange at its sides and top, said flange being fixed to the outside surface of the flange pivoted to the duct.

References Cited in the file of this patent

UNITED STATES PATENTS

891,967	Wiemann	June 30, 1908
1,064,951	Wofford	June 17, 1913
1,397,739	Moyer	Nov. 22, 1921
1,493,655	Vernon	May 13, 1924
2,311,948	Lagodzinski	Feb. 23, 1943
2,579,395	Pfautsch	Dec. 18, 1951
2,665,625	Woodhams	Jan. 12, 1954

FOREIGN PATENTS

14,431	Great Britain	1887