July 23, 1957 H. E. MORRISON 2,799,948

CLOTHES DRIER

Filed Nov. 17, 1955 2 Sheets-Sheet 1

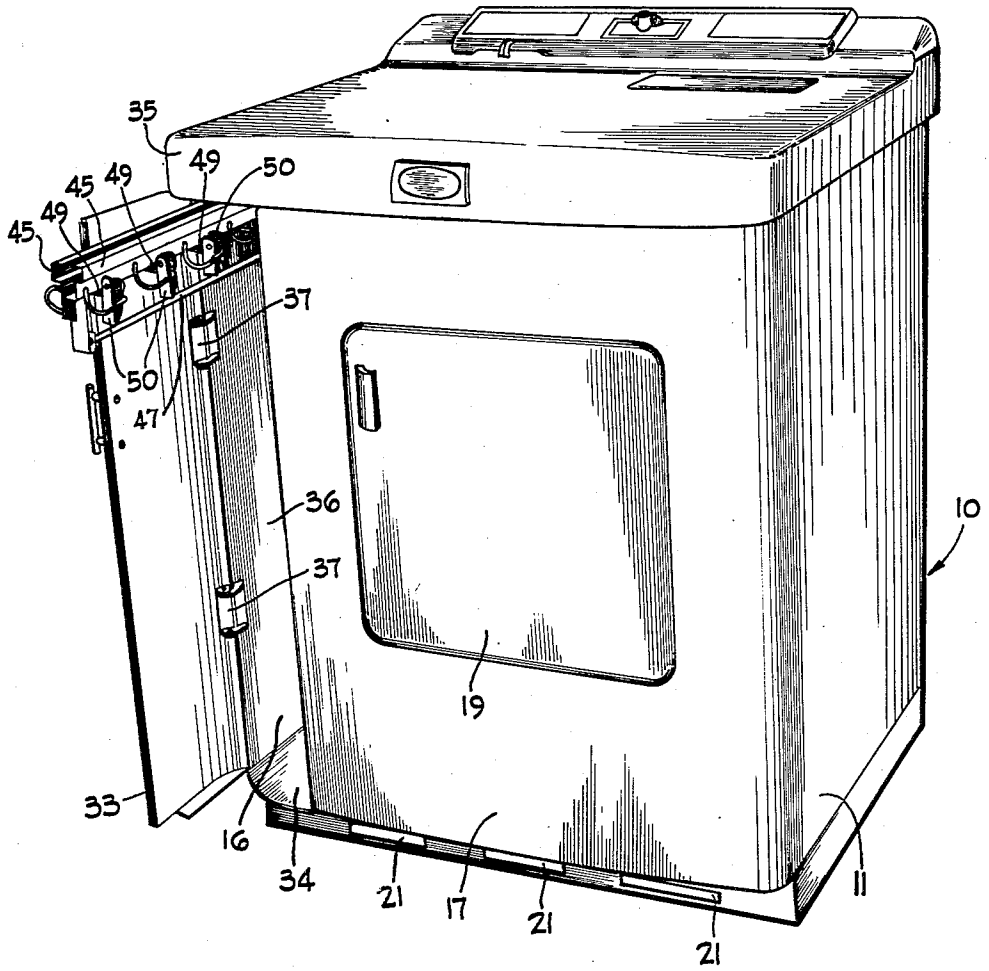


FIG. 1

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CLOTHES DRIER

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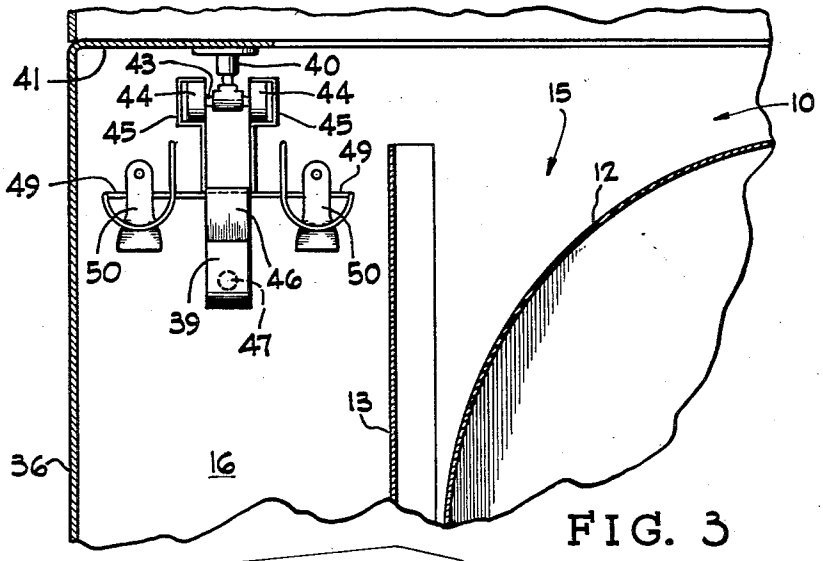


FIG. 3

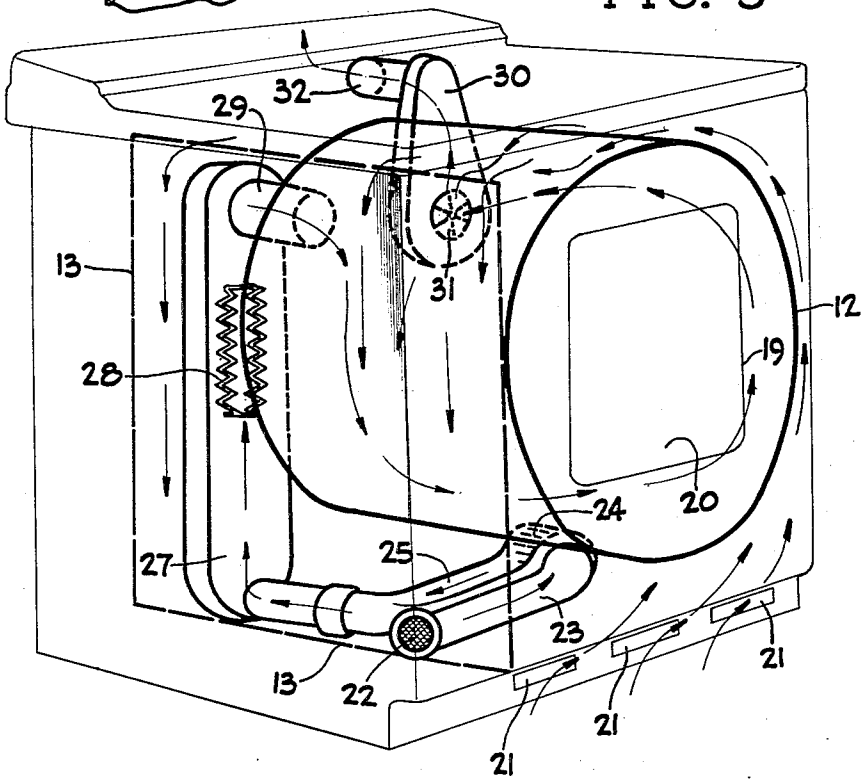


FIG. 2

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CLOTHES DRIER

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Application November 17, 1955, Serial No. 547,437

4 Claims. (Cl. 34—90)

This invention relates to improvements in clothes driers.

A principal object of the invention is to provide a simple and improved form of rotary tumbling drum type of household clothes drier, in which delicate goods or clothes that would otherwise be injured by the tumbling action of the clothes in the drying drum are dried without tumbling by the passing of heated air therethrough.

Another object of the invention is to provide a rotary tumbling drum type of clothes dried in which the inlet for air to the tumbling drum is through a compartment to one side of the drum, to draw heated air through the compartment, and in which the compartment forms a delicate goods drying compartment, for drying the goods therein by convection.

Another and more detailed object of my invention is to provide an improved form of rotary tumbling drum type of household clothes drier in which a tumbling drying compartment is contained within the cabinet for the drier and in which air is drawn in the cabinet through the tumbling drying compartment over the drum thereof and downwardly through a secondary drying compartment prior to introduction into the drier drum.

Still another object of the invention is to provide a new and improved form of household clothes dried having adjacent tumbling and delicate goods drying compartments within a single cabinet, in which the inlet for air to the tumbling drum is through the delicate goods drying compartment to effect drying of goods hanging therein by convection.

These and other objects of the invention will appear from time to time as the following specification proceeds and with reference to accompanying drawings wherein:

Figure 1 is a perspective view of a clothes drier constructed in accordance with the invention with the door for the delicate goods drying compartment open and showing a rack for delicate goods partially extended from the compartment;

Figure 2 is a diagrammatic view illustrating the air circulation through the delicate goods drying compartment into the tumbling drum; and

Figure 3 is an enlarged detail view illustrating the slide for hanging delicate goods in the delicate goods drying compartment.

In the embodiment of the invention illustrated in the drawings, a clothes drier **10** of the rotary tumbling drum type is shown as including a cabinet **11** having a clothes tumbling drum **12** rotatably journaled therein to one side of a wall **13**. The wall **13** extends upwardly along the cabinet from the bottom thereof and stops short of the top of the cabinet **11** and divides cabinet into a tumbling drying compartment **15** and a delicate goods or convection drying compartment **16**.

The cabinet **11** has a front wall **17** having a door **19** therein confronting a clothes receiving opening **20** in the clothes tumbling drum **12** as is usual with tumbling types of clothes driers, the tumbling drum **12** is continuously driven during the drying operation by a motor (not shown) contained within the cabinet **11**.

Louvers **21** are prepared at the bottom of the cabinet to one side of the wall **13** beneath the drier drum **12** for the admission of air into the cabinet. Air coming in at the bottom of the cabinet through the louvers **21** into the tumbling compartment **15** circulates around the drum **12** and over the top of the wall **13**.

An intake duct **23** for air for the drier drum **12** opens through the wall of compartment **13** adjacent the bottom thereof for drawing air downwardly through the delicate goods drying compartment. The duct **23** has a screen **22** at the intake end thereof to prevent delicate goods, such as, stockings from being sucked into said duct and has a blower **24** associated therewith for drawing air downwardly along the compartment **16** into said duct. The blower **24** is driven in a manner similar to that shown and described in my joint patent with Peter Eduard Geldhoff No. 2,619,737, so said blower and the drive therefor is not herein shown or described in detail. The blower **24** drawing air through the duct **23** forces air through a duct **25** extending across the bottom of the tumbling drum **12** and upwardly through a heating duct **27**, having a heating element **28** therein, and into the rear wall of the drum through a duct **28** communicating with the drum through its supporting bulk head (not shown) as in the aforementioned Patent No. 2,619,737. A duct **30** having a blower **31** therein is provided to draw air from the tumbling drum **12** through the supporting bulkhead for said drum (not shown) and expel it to the atmosphere through the back of the cabinet through an outlet duct **32**. The blower **31** is likewise driven in a manner similar to that shown and described in my aforementioned joint patent with Peter Eduard Geldhoff, and said blower and the drive thereto is no part of my present invention so need not herein be shown or described further.

When the drier is turned on and the tumbling drum **12** is rotatably driven, the blower **24** will draw air in through the louvers **21** around the rotating tumbling drum **12**, the periphery of which serves as a supplementary air circulating means over the top of the wall or partition **13** and downwardly along clothes that may be in the compartment **16**, to the bottom of said compartment. The air then passes through the inlet duct **23**, through the duct **25** along the heating means **28** in the duct **27** into and through the drier drum and out the drier durm through the outlet duct **32**. The air drawn into the drier drum and downwardly along the delicate goods drying compartment is thus heated by radiation from the drier drum **12** and the heating duct **27** and being drawn downwardly through the delicate goods drying compartment **16** dries the clothes therein by convection.

The cabinet **11** has a door **33** disposed to one side of the door **19** and affording access to the delicate goods drying compartment **16**. The door **33** is shown as extending from a bottom plate **34** of the cabinet upwardly to a top portion **35** thereof and as being hinged to a side wall **36** of the cabinet on vertically spaced hinges **37**.

A sliding rack **39** for hanging clothes in the delicate goods drying compartment **16** is herein shown as being carried on a bracket **40**, secured to and depending from a top plate **41** extending inwardly of the wall **36** and spaced above the top of the wall or partition **13**. The bracket **40** carries a shaft **43** having rollers **44** on each end thereof extending within facing channels **45** of the clothes hanging rack **39**.

The clothes hanging rack **39** has a depending arm **46** at each end thereof, the front arm only herein being shown, for convenience in illustrating the invention. The arms **46** are connected together at their lower ends by a longitudinally extending bar **47** upon which clothes may

be hung if desired. The front arm 46 affords a means for grasping the rack and extending the same from the compartment 16 to remove clothes therefrom or to hang clothes thereon.

The rack 39 also has a plurality of spaced transverse hanging rods 49 extending laterally therefrom in opposite directions intermediate the channels 44 and the bar 46. The rods 49 are shown as turning inwardly and upwardly at their outer ends in the form of loops to afford a means for the hanging of articles thereon. The rods 49 also have spring pressed clips 50 thereon, which may be of a form similar to well known forms of spring pressed clothes pins. The looped portions of the rods 49 may be used for the hanging of stockings for drying while the clips 50 may be used for hanging other delicate articles such as lingerie and the like.

It may be seen from the foregoing that an improved form of clothes drier has been provided in which clothes may normally be dried by tumbling and the circulation of heated air through the drums and delicate goods may be dried by convection by the circulation of air over the tumbling drum and downwardly along the delicate goods drying compartment by the blower and air circulating means for circulating heated air through the tumbling drum, and that the clothes in the hanging or convection drying compartment are dried both by the air radiated from the drum and heating duct 27 and from the air which is heated as it passes over and around the drum and heating duct and is drawn downwardly through the compartment 16.

While I have herein shown and described one form in which my invention may be embodied, it will be understood that various modifications and variations thereof may be effected without departing from the spirit and scope of the novel concepts thereof.

I claim as my invention:

1. In a clothes drier, a cabinet, a clothes tumbling drum rotatably mounted within said cabinet for drying clothes by tumbling and the circulation of heated air therethrough, said cabinet having a front wall having a door therein confronting said clothes tumbling drum, inlet openings for air in said cabinet adjacent the bottom thereof, an inlet air duct having a blower associated therewith for circulating air within and through said clothes tumbling drum, and a wall in said cabinet extending upwardly therefrom from the bottom thereof to one side of said drum and dividing said cabinet into a tumbling drying compartment and a delicate goods drying compartment to one side thereof, means for hanging delicate goods in said delicate goods drying compartment, and said intake air duct leading through said wall for circulating heated air downwardly through said delicate goods drying compartment and into and through said clothes tumbling drum.

2. In a clothes drier, a cabinet, a clothes tumbling drum rotatably journaled within said cabinet, an opening in the front wall of said cabinet confronting said clothes tumbling drum for the placing of clothes therein for drying by tumbling while heated air is circulated therethrough, said cabinet also having a wall extending upwardly from the bottom thereof to one side of said tumbling drum and stopping short of the top thereof and dividing the interior of said cabinet into a tumbling drying compartment and a delicate goods drying compartment, means for hanging delicate goods in said delicate goods drying compartment, an inlet for air into said cabinet to one side of said delicate goods drying compartment for circulation over said drum, a blower for circulating air through said drum having an intake through said wall adjacent the bottom of said delicate goods drying compartment for circulating air over drum and downwardly through said delicate goods drying compartment and then into through said drum, and a door in the front wall of said cabinet confronting said delicate goods drying compartment and affording access thereto.

3. In a clothes drier, a cabinet having a rotatable clothes tumbling drum mounted therein, a compartment to one side of said drum, means in said compartment for hanging clothes therein, an inlet for air into said cabinet to one side of said compartment, an inlet for air into said compartment adjacent the top thereof, an inlet duct for air for circulation through said tumbling drum having heating means therein and having an intake opening into said compartment adjacent the bottom thereof, effecting the drawing of inlet air downwardly through said compartment and the drying of clothes therein by convection prior to passing over said heating means and then circulating air over said heating means and forcing heated air through said tumbling drum.

4. In a clothes drier, a cabinet, a rotatable clothes tumbling drum mounted within said cabinet for drying clothes by tumbling during the circulation of heated air therethrough, a wall in said cabinet to one side of said drum, dividing said cabinet into a tumbling drying compartment and a delicate goods drying compartment to one side of said tumbling drying compartment, a door in said cabinet affording access to said delicate good drying compartment, air intake means to said delicate goods drying compartment adjacent the top of said cabinet, air intake means for said drum through the bottom of said wall, and air circulating means for circulating air through said tumbling drum through said air intake means in said wall, for drawing air downwardly along said delicate goods drying compartment prior to the forcing of air through said tumbling drum.

References Cited in the file of this patent

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2,498,478	Balph	Mar. 12, 1947
2,619,737	Geldhof et al.	Jan. 31, 1951