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W. L. KAUFFMAN II

2,764,820

DRIERS

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2 Sheets-Sheet 2

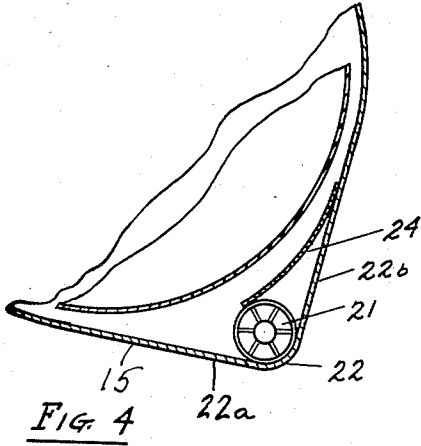


FIG. 4

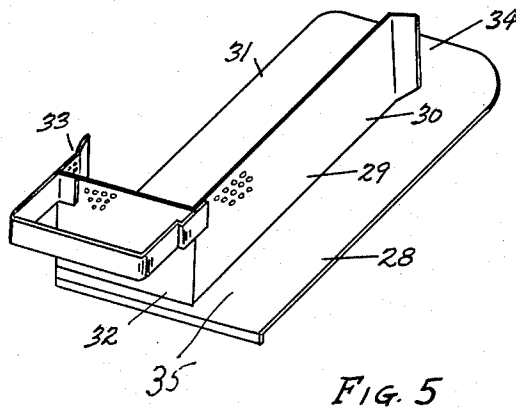


FIG. 5

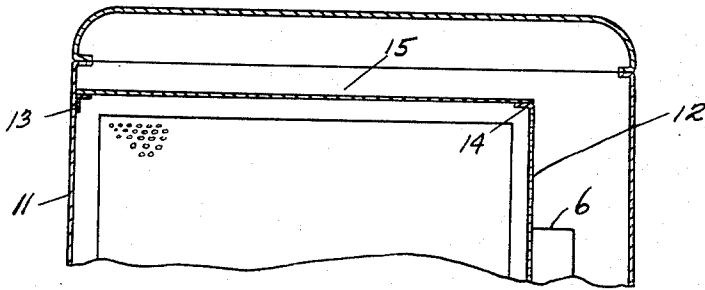


FIG. 6

INVENTOR.
BY *Walter L. Kauffman II*
Ralph Hammar
Atty

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2,764,820

DRIERS

Walter L. Kauffman II, Erie, Pa., assignor to Lovell Manufacturing Company, Erie, Pa., a corporation of Pennsylvania

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2 Claims. (Cl. 34-79)

This invention is a tumbler-type domestic clothes drier in which the drum housing surrounding the periphery of the drum is made cylindrical throughout three of the quadrants and substantially square in the fourth quadrant. With this arrangement, there is provided a substantial space in the square corner in which any lint which may tend to collect between the drum and the drum housing will be precipitated. By locating the fan suction in the square corner, there is a tendency for the deposited lint to be picked up and drawn into the fan suction. However, if all of the lint should not be drawn into the fan suction, the corner provides an enlarged free space which can be easily cleaned through an access opening at the front of the drum housing.

In the accompanying drawing, Fig. 1 is a front perspective of the drier, Fig. 2 is a back view with part of the cabinet removed so as to show the internal construction, Fig. 3 is a perspective of the supporting base and of the parts carried thereby broken away to show the construction of the lower part of the drum housing, Fig. 4 is an end view of the lower square quadrant of the drum housing, Fig. 5 is a perspective of the lint trap screen, and Fig. 6 is a fragmentary section showing the construction of the drum housing.

In the drawing, 1 indicates the drier cabinet having a door 2 at the front through which clothes are loaded and unloaded into a horizontal cylindrical perforate drum 3. In the upper right hand corner is diagrammatically indicated the drier control 4. As shown more clearly in Figs. 2 and 3, the cabinet is supported on a base 5 at the back of which is an upright post 6 having a bearing 7 in which the drum 3 is journaled. The drum is driven by a motor 8 through a double belt reduction 9 and 10.

As shown in Fig. 6, the cabinet 1 has a front wall 11 and within the cabinet there is a back wall or sheet 12 to both of which are fixed circular flanges 13 and 14 receiving a wrap around sheet 15 enclosing the periphery of the drum and in effect providing in conjunction with the walls 11 and 12 a casing around the drum. In an upper quadrant of the drier is located an electric heating element 16 having an associated reflector 17 directing the heat against the outer surface of the drum. The reflector 17 is substantially a direct continuation of the wrap around sheet and with the wrap around completes the enclosure of the drum except for an air intake slot 18 at the upper edge of the reflector.

In a lower quadrant of the drum housing diagonally opposite the heating element 16 is a fan 19 driven by the motor 8 from a belt 20. The fan is located in back of the back wall 12 so that the fan is outside of the drum housing and is accordingly easily accessible for service. The fan has an intake 21 through the back wall 12 and outside of the periphery of the drum. As is more clearly shown in Fig. 3, the wrap around sheet makes a generally square corner 22 encompassing the intake 21 thus providing an enlarged space outside the periphery of the drum in which any lint between the drum and wrap around sheet will naturally collect. The collection of the lint in

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the corner 22 will be enhanced by the natural eddying action. The suction through the fan inlet 21 tends to make the corner 22 self-cleaning. As the lint is deposited in the corner, it tends to collect on the bottom or horizontal walls 22a of the corner since the vertical wall 22b is essentially self-cleaning. Because the lint tends to stick to lint there is a tendency for the lint to collect in bunches thereby increasing the surface exposed to the suction from the fan inlet. When the bunches of lint reach a large enough size they are drawn into the fan inlet and discharged to the outside of the drier. Because of the remote possibility that the lint collecting in the corner 22 might be in bunches too large to be drawn into the fan inlet there is a clean-out 23 in the front wall 11 of the drier cabinet which provides access to the corner 22. There is also a baffle or shield 24 extending from the vertical wall 22b down over the fan inlet 21, which will prevent any movement of the lint up out of the corner 22. This keeps large bunches of lint from becoming wedged between the drum and the wrap around sheet. Satisfactory operation has been obtained with the baffle 24 omitted.

The fan 19 has a discharge outlet 25 directed toward an opening 26 in the front wall of the drier base 5. There is a duct 27 providing an air tight passage from the blower outlet 25 out through the opening 26. This prevents the leakage of lint laden air into the interior of the drier cabinet. Removably fitting in the opening 26 and extending back into the duct 27 is a lint trap comprising a base 28 of substantially the same width as the opening 26 and carrying a perforated screen 29 having a section 30 extending back toward the blower outlet 25 and cooperating with the duct 27 to provide a pocket 31 receiving the blower discharge. The screen 29 also has a section 32 extending across the front end of the base 28 and another section 33 extending back into the duct and sealing against one of the duct side walls. When the lint trap is clean, the air flows through the perforated sections 30, 32 and 33 predominantly toward the front. As the lint builds up on the screen, the resistance increases and finally reaches a point at which the lint laden air can no longer filter through the screen. At this point, the lint continues to build up on the screen because the greater part of the lint tends to stick to the lint already collected on the screen, but some lint laden air flows out through a by-pass passage 34 to the opposite side of the screen 29 and flows down through a by-pass passage 35 and out the right hand half of the opening 26 at the front of the drier base. The user will be warned by the presence of lint on the floor in front of the drier that the lint trap needs emptying. The lint trap can easily be emptied by pulling the trap out of the duct thereby exposing the inside surface of the screen.

By locating the fan intake 21 in a lower quadrant of the drum housing generally within the horizontal and vertical projection of the drum, the necessary intake connection to the drum housing is made with a minimum of metal. Furthermore, this location does not increase the height or width of the enclosing cabinet.

What I claim as new is:

1. In a clothes drier, a rotatable drum for receiving and tumbling clothes, a drum housing having axially spaced end walls and a cylindrical peripheral wall wrapped around the end walls and extending axially along and spaced from the periphery of the drum, and a fan for withdrawing air from the drum housing having an axially facing inlet from the drum housing located in one of said end walls and in a lower quadrant of the drum housing outside the periphery of the drum, but generally within the horizontal and vertical projection of the drum, the lower quadrant of the peripheral wall of the drum housing having straight angularly spaced sections diverg-

