April 4, 1961 A. W. KRUZAN 2,978,232

STATIC DRY MECHANISM FOR A CLOTHES DRYER

Filed Nov. 3, 1958 2 Sheets-Sheet 1

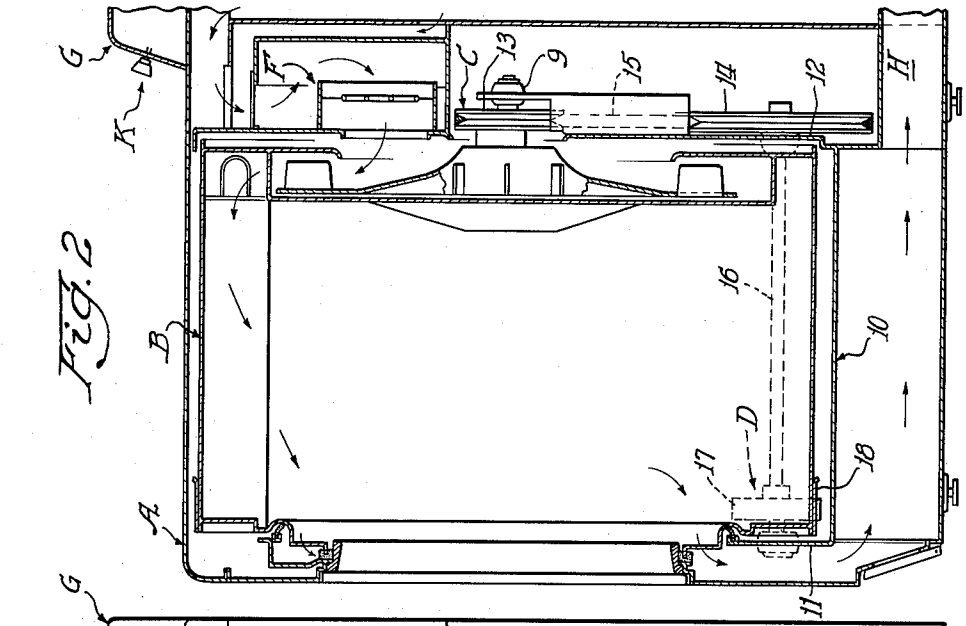

Fig. 2

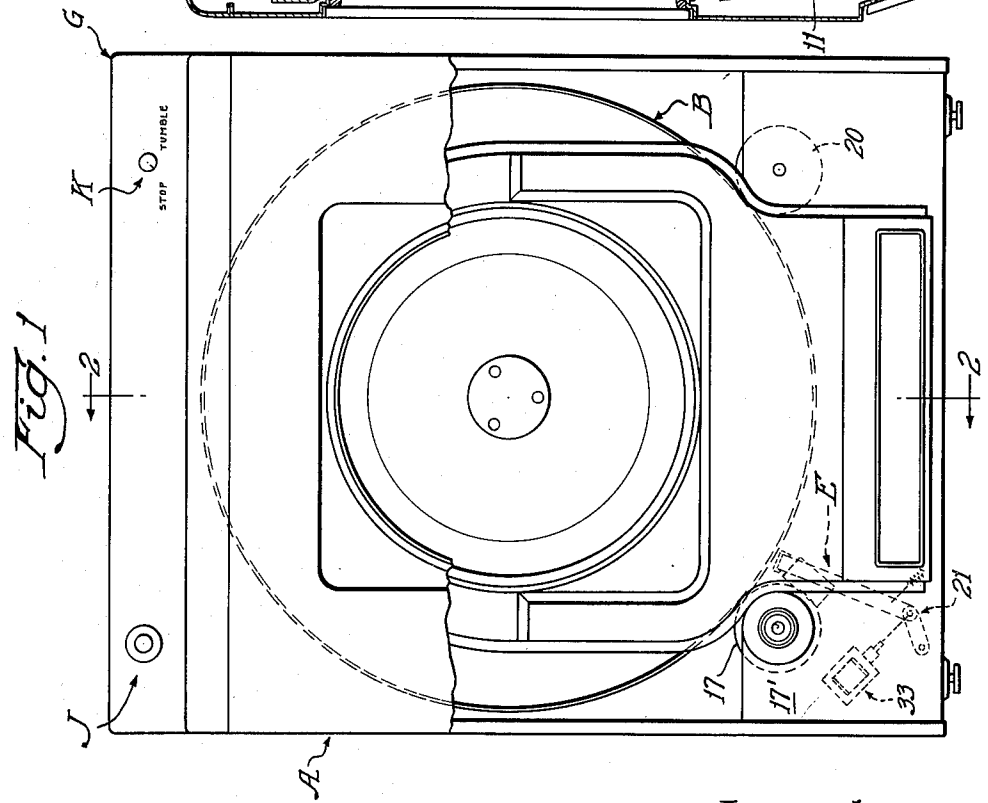

Fig. 1

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STATIC DRY MECHANISM FOR A CLOTHES DRYER

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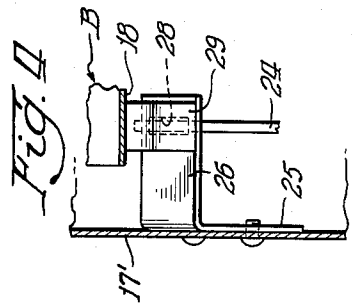

Fig. 4

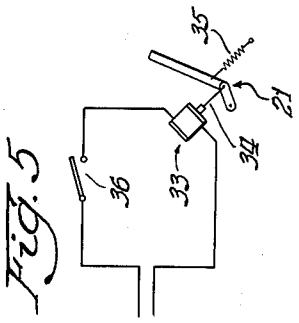

Fig. 5

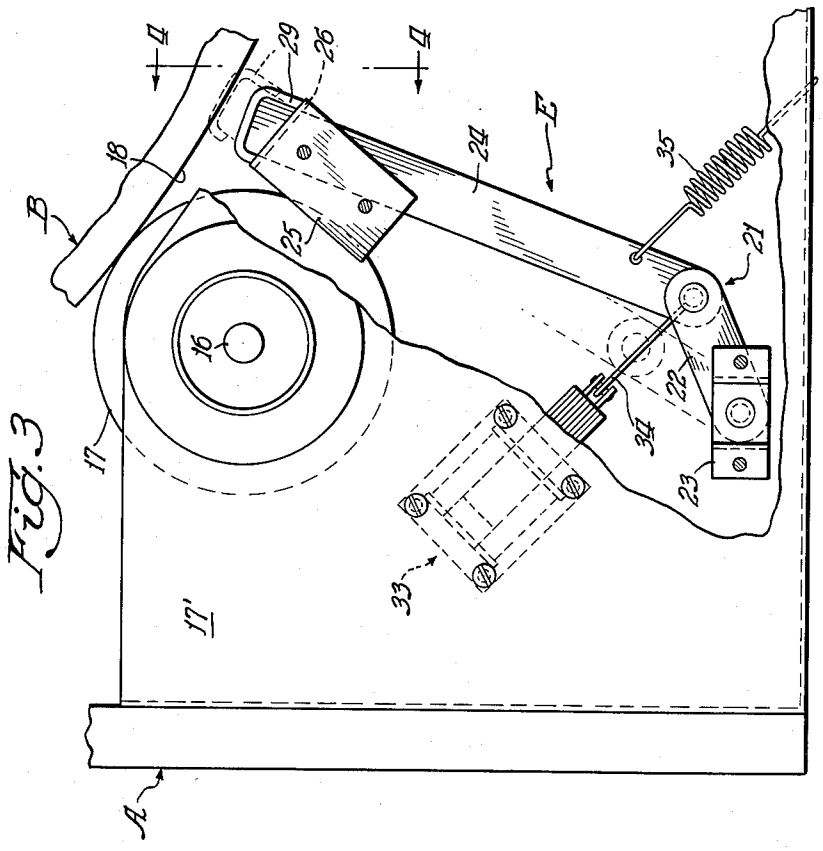

Fig. 3

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STATIC DRY MECHANISM FOR A CLOTHES DRYER

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2 Claims. (Cl. 259—81)

This invention relates, in general, to clothes dryers, and has particular reference to an electrical control means operable for stopping the rotation of the clothes dryer cylinder in order to afford drying of fabrics by maintaining the cylinder stationary.

The present invention relates to a dryer of the character disclosed in U.S. Patent No. 2,798,304 and more particularly to an improved means for optionally maintaining the cylinder stationary during the drying operation.

It is well known that certain fabrics are not conducive to tumbling in the conventional revolving cylinder type dryer. Moreover, certain fabrics cannot withstand the high temperatures normally employed in conventional dryers of this general class. Furthermore, in order to facilitate the drying of fabrics and particularly fabrics which have been washed by a conventional washing machine or by hand, it is desirable not only to remove the surplus water from the fabrics, but it is also desirable to further dry the clothes by circulating air thereover and therethrough, where the air so circulated may be warmed by a heater or may be of room temperature.

Accordingly, an important object and accomplishment of the present invention is to provide means including a selector whereby the user may, at his election pass heated air or air of room temperature through the dryer.

A further important object and accomplishment of the invention is to provide a clothes dryer of the type hereinbefore described and having incorporated therein means whereby the user may selectively rotate the drum to tumble the clothes or cause said drum to be held stationary to effect a so-called "static drying," with a further choice of passing heated air on through the cylinder.

In connection with the above, another important object and accomplishment of the invention is to provide a dryer having incorporated therein conveniently accessible means, whereby the user may selectively cause the drum to rotate or hold the drum stationary.

In one of its aspects, the present invention contemplates a clothes dryer having incorporated therein air moving means directly associated with the rotatable drum, the air moving means comprising a relatively large fan assembly driven by the same driving mechanism which drives the drum and operable to cause the passage of an unusually large amount of air through the drum for effectively "wiping" the clothes contained therein thus efficiently removing moisture from the clothes.

Additional objects, features and advantages of the invention disclosed herein will be apparent to persons skilled in the art after the construction and operation are understood from the within description.

It is preferred to accomplish the various objects of this invention and to practice the same in substantially the manner as hereinafter more fully described, and as more particularly pointed out in the appended claims.

An embodiment of the invention is illustrated in the accompanying drawings forming a part hereof and wherein:

Fig. 1 is a front elevational view of a clothes dryer embodying the present invention;

Fig. 2 is a sectional view of Fig. 1 taken along the plane of the line 2—2 thereof;

Fig. 3 is an enlarged plan view of a toggle joint used for lifting the rotary cylinder;

Fig. 4 is a sectional view taken on the lines 4—4 of Fig. 3; and

Fig. 5 is an electrical diagram of the toggle actuating circuit.

The drawings are to be understood to be more or less of a schematic character for the purpose of illustrating and disclosing a typical or preferred form of the improvement contemplated herein, and in the drawings like reference characters identify the same parts in the several views.

In the exemplary embodiment of the invention depicted in the drawings, the dryer contemplated by this invention comprises, in general, a cabinet A as shown in Fig. 1; a clothes drum disposed within the cabinet A and rotatable on a substantially horizontal axis and effective to tumble the fabrics disposed therein, a drum B mounted for pivotal movement by means of a universal joint 9, said joint being fully disclosed in said patent; an air moving fan assembly C axially disposed with respect to the drum B and effective to cause a relatively large volume of air to pass through said drum B for contact with the fabrics disposed therein for absorption of moisture whereupon said moisture is conveyed outwardly and away from the machine with said air; a driving mechanism D effective to cause rotation of said drum B and said air moving fan assembly C; a static dry control E associated with said drum B and effective to control rotation or nonrotation of said drum responsive to manual operation of said static dry control means by the user as desired; an air heating assembly F over and through which ambient air is drawn by said air moving fan assembly C effective to raise the temperature of said ambient air before the entry thereof into said drum B whereby said air will be more effective to absorb moisture in the fabrics contained in said drum B; a backguard G; air discharge ports H providing a vent system; a timer mechanism J adapted to regulate the operation of the dryer with respect to a selected drying time; and a knob K permitting selection by the user of either tumble drying or static drying.

Referring now to Figs. 1 and 2 there is shown a drum B rotatably mounted within a substantially imperforate, stationary casing member 10. The casing 10 has a front wall 11 and a rear wall 12. The drum B and fan assembly C are driven by an electric motor (not shown) through pulleys 13 and 14, and a belt 15. The pulley 14 drives a shaft 16 which has drivingly connected thereto a wheel 17. The front of the drum or cylinder B has a tire 18 which normally engages and rests upon the wheel 17. An idler and support wheel 20 is provided on the side opposite the drive wheel 17, said shaft being journalled in a support member 17'. Due to the particular construction of the pulleys 13 and 14, the belt 15, and the universal joint 9, the front end of the drum B can be lifted off the drive wheel 17 while the fan C continues rotating and the heater F remains energized providing static drying.

The drum B is adapted to be lifted off its drive roller 17 for static drying by means of the static dry control E. The control E comprises basically a toggle joint 21 which is actuated by a solenoid 33. The toggle joint 21 (Fig. 3) comprises a short arm 22 pivotally connected to the support 17' by a bracket 23 and a long arm 24 which is adapted to engage the tire 18 of the drum B. The arm 22 is the lever support and the arm 24 is the lever of the toggle joint. A bracket 25 having inturned

flange 26 is attached to the support 17'. The flange 26 has a slot 28 therein which slidably receives the end of the arm 24 of the toggle joint. A nylon shoe 29 covers the end of the arm 24 to provide a broad, smooth engagement of the arm 24 with the tire 18.

The toggle joint 21 is adapted to be operated by a solenoid 33 which is mounted on the support 17' and which is connected to the pivot of the joint by means of a link 34. A spring 35 has one of its ends connected to the arm 24 and its other end to the base of the cabinet A. The solenoid 33 through the link 34 operates the toggle joint 21 to lift the cylinder off the drive roller 17, and the spring 35 retracts the toggle joint when the solenoid is deenergized. The solenoid 33 is in a circuit with a switch 36 adapted to be operated by the knob K on the backguard.

In operation, when it is desired to operate the dryer with the cylinder stationary to effect so-called "static drying," the knob K is rotated to close the switch 36 and energize the solenoid 33. The solenoid operates the toggle joint whereby the arm 24 lifts the cylinder off its drive roller 17. At this time the fan continues to rotate but the cylinder remains stationary for "static drying."

While I have described my invention with only one specific embodiment, it is to be understood that this is by way of illustration and not by way of limitation and the scope of my invention is defined solely by the appended claims which should be construed as broadly as the prior art will permit.

I claim:

1. A laundry machine comprising a cylinder rotatably mounted on a support and adapted for receiving fabrics to be tumbled therein, said cylinder having a front end and a rear end, the rear end of said cylinder being pivotally connected to said support, drive means supporting the front end of said cylinder for rotating the cylinder, means adapted for engaging with said cylinder for movement about its pivotal connection to its support to lift the cylinder off the drive means so that said cylinder will remain stationary while said drive means continues to operate, said means comprising a toggle joint having one arm thereof mounted on said support and the other arm thereof having a portion slidably mounted on said support adjacent said cylinder and adapted to engage said cylinder and said arms being pivotally connected to each other to provide a knee, a solenoid operatively connected to the knee of said toggle joint arms to lift the cylinder off the drive means, and means operatively connected to said toggle joint to actuate the arms thereof to move said cylinder-engaging arm to withdraw said cylinder-engaging arm from said cylinder upon deenergization of said solenoid whereby said cylinder is lowered to engage said drive means.

2. In a laundry machine as defined in claim 1 wherein spring means are provided having one end connected to said cylinder-engaging arm and the other end connected to said support and operative to move said cylinder-engaging arm to withdraw said cylinder-engaging arm from said cylinder upon deenergization of said solenoid whereby said cylinder is lowered to engage said drive means.

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