March 4, 1952 C. S. O'NEIL 2,587,646

DRIER

Filed Dec. 12, 1946 3 Sheets-Sheet 1

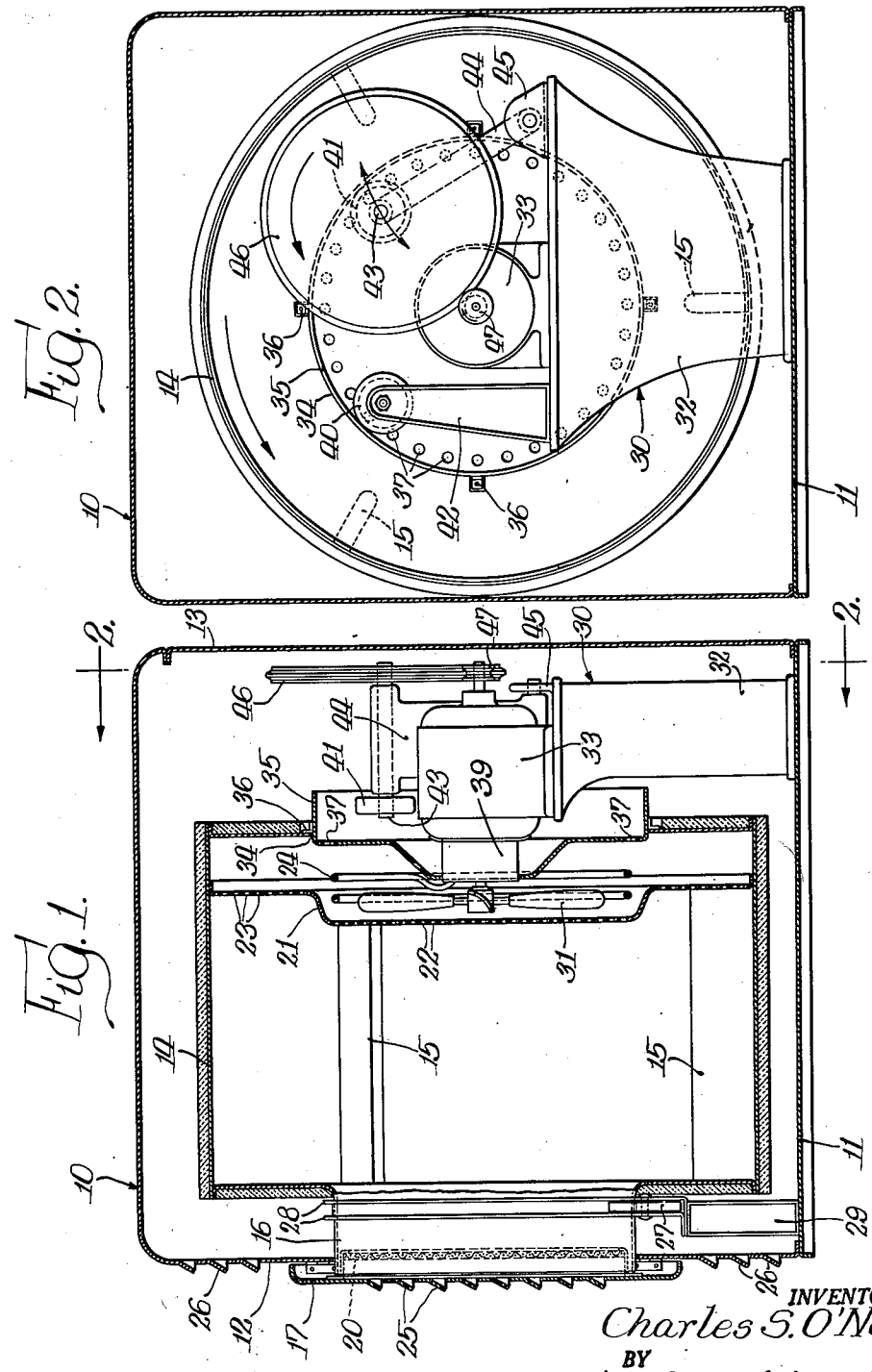


Fig. 2.

Fig. 1.

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Fig. 2.

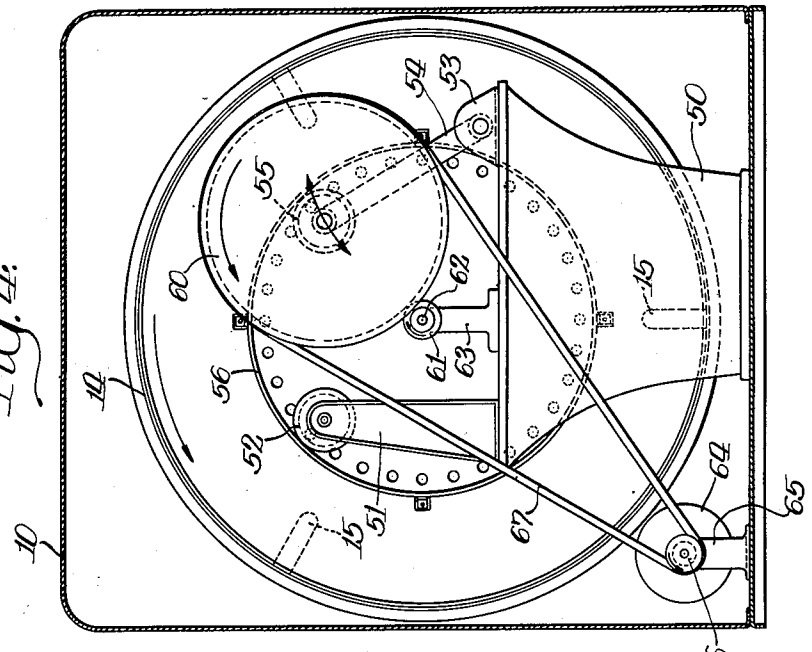
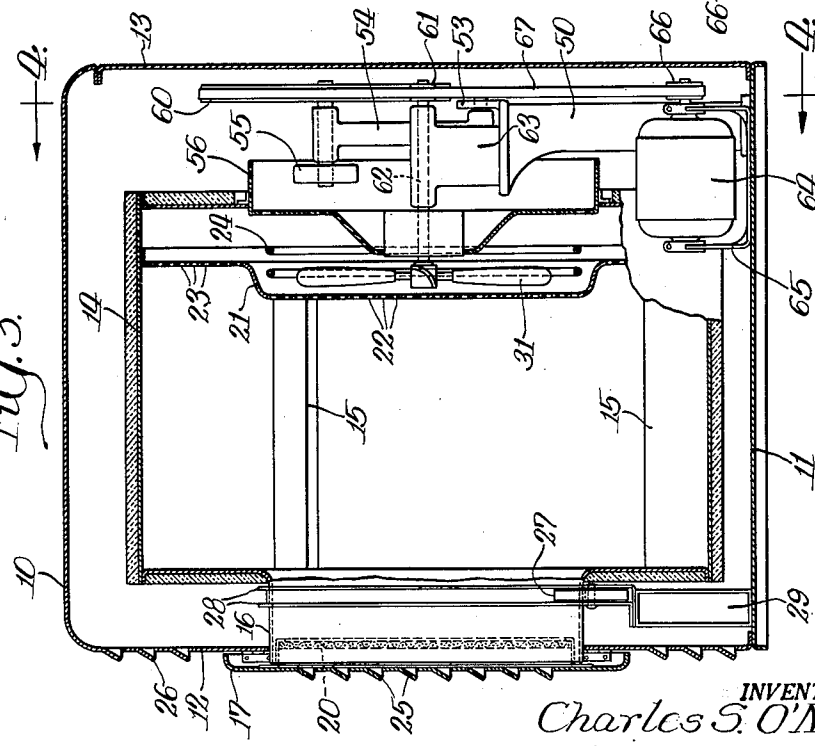


Fig. 3.



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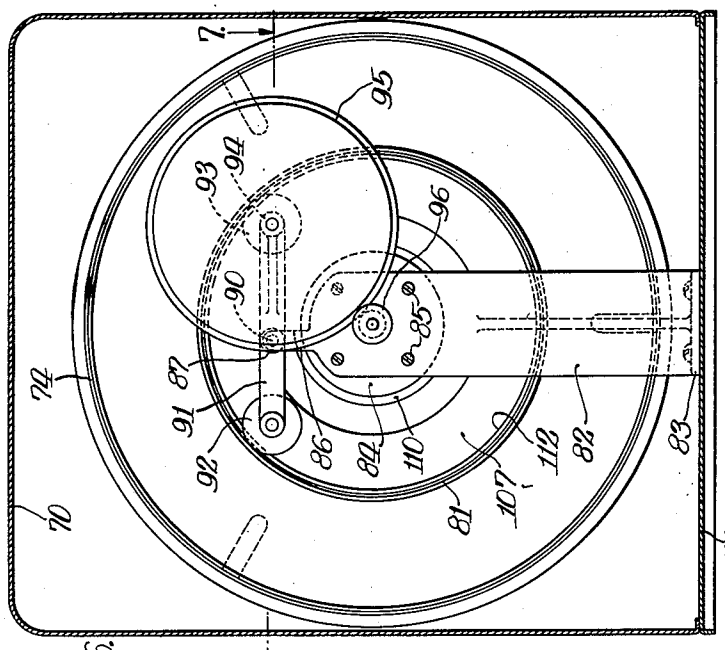


FIG. 6.

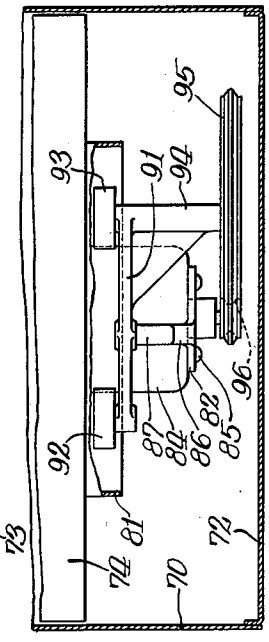


FIG. 7.

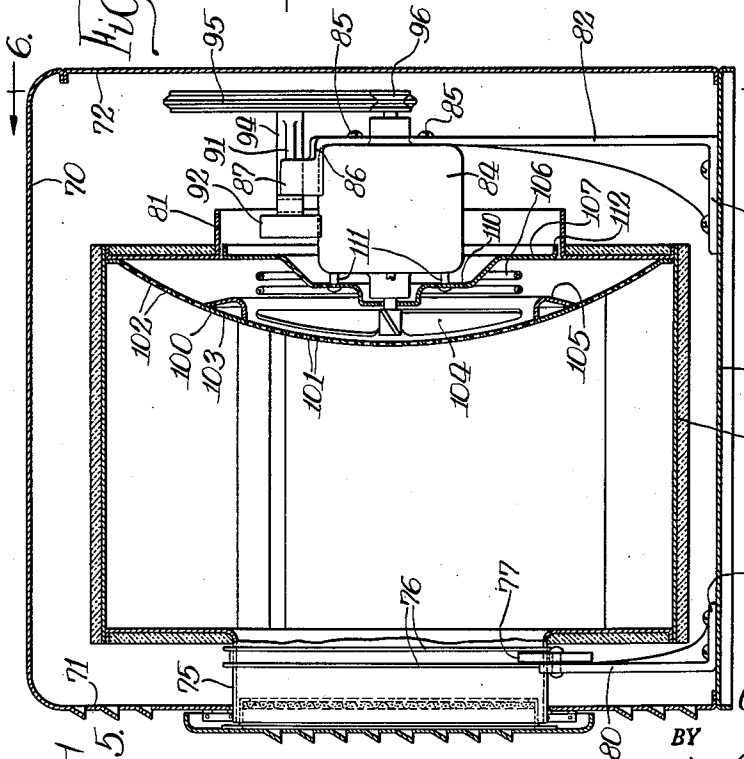


FIG. 5.

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2,587,646

UNITED STATES PATENT OFFICE

2,587,646

DRIER

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Application December 12, 1946, Serial No. 715,859

22 Claims. (Cl. 34—133)

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The invention relates generally to dryers and more particularly to a dryer for laundry, suitable for use in the home, and of the type in which the laundry is tumbled in the presence of heat to evaporate moisture therefrom.

The general object of the inventon is to provide a novel dryer of the foregoing character, which is capable of drying laundry in a short period of time at a low operating cost, and which has structural features facilitating both the manufacture thereof as well as servicing.

A further object is to provide a dryer of the foregoing character, in which the laundry is tumbled in a rotatably driven drum, the drive for said drum comprising a unit adapted to be completely assembled before being assembled with the rest of the dryer, thus facilitating the manufacture thereof, as well as rendering it readily serviced.

Another object is to provide a dryer of the foregoing character, in which the laundry is tumbled in a rotatably driven drum, the drive for said drum having a novel arrangement including rollers which both support and rotate the drum.

Other objects and advantages will become apparent from the following description taken in connection with the accompanying drawings, in which:

Figure 1 is a vertical sectional view, taken from front to rear, of a dryer embodying the features of the invention.

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a vertical sectional view similar to Fig. 1, but showing a modified construction.

Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 is a vertical sectional view similar to Figs. 1 and 3, but showing another modified construction.

Fig. 6 is a vertical sectional view taken on the line 6—6 of Fig. 5.

Fig. 7 is a fragmentary horizontal sectional view taken on the line 7—7 of Fig. 6.

Laundry dryers of the type adapted for household use may comprise a casing adapted to stand on the floor and enclosing a rotatable drum in which the laundry is placed for the drying operation. The present invention relates to dryers of this type in which the laundry, when placed in the drum, is tumbled by the rotation of the drum and is subjected to a circulation of heated air to remove the moisture therefrom.

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In dryers of this type, it is desirable from a manufacturing standpoint to be able to assemble the drive structure for the drum as a unit and then assemble it with the drum within the casing. Such a structure also facilitates servicing of the machine since the few service problems that arise usually relate to the drive structure or the heating means of the machine. Thus, with the drive structure constituting a subassembly of the machine as a whole, such drive unit may be readily withdrawn from the casing and the drum for repair or replacement. In the case of a machine in which heat is supplied by an electrical element, the heating element also constitutes part of the drive unit since the drive unit includes an electrical motor as a source of power and, therefore, the wiring connections are simplified by making the electrical heating element also a part of the drive unit. In the present structure, the assembly and support of the drum within the outer casing is also of a simple construction, the drive unit itself constituting a part of the supporting means for the drum.

To illustrate the invention, I have shown in Figs. 1 and 2 one embodiment which comprises an outer casing 10, in the present instance of generally rectilinear form, including a base 11, a front wall 12 and a rear wall 13. The rear wall 13 is removable from the rest of the casing structure to provide for assembly of the drum and drive structure within the casing 10. The drum, indicated at 14, is generally cylindrical in form, and it is positioned with its axis horizontal extending from front to rear of the machine. The drum is preferably provided with inwardly directed ribs or vanes 15 which tumble the laundry during the rotation of the drum so that all portions of the laundry are fully exposed to the heated air within the drum to effect uniform drying. The forward end of the drum may be provided with an enlarged flange 16 which, in the present instance, is shown as projecting through the front wall 12 of the casing and provides an opening through which the laundry may be inserted and withdrawn. During operation, the opening through the annular flange 16 is closed by a door 17 hinged on the front wall 12 of the casing. A lint collecting screen 20 may be carried on the door to extend across the opening within the annular flange 16 to collect lint resulting from the tumbling and drying of the laundry.

The drum 14 may be arranged for any desired type of air circulation to effect the drying. In

the present instance, the drum is of a character in which air is recirculated so as to reduce the loss of heat therein and to insure utilization to the maximum of the moisture absorbing capacity of the air. To this end, the drum 14 is provided with a transverse partition 21 which is provided in its central portion with a plurality of apertures 22 to permit air to be forced into the drum, and at its periphery with a series of apertures 23 to permit air to be withdrawn from the drum. The air when so withdrawn passes between the partition 21 and the rear wall of the drum and is drawn toward the center of the drum to be recirculated through the apertures 22. In passing through the space between the partition 21 and the rear wall of the drum, the air may be heated by an electrical heating element 24 before being recirculated through the drum, the reheating of the air thus increasing its moisture-carrying capacity and providing the heat required for the latent heat of evaporation of the moisture. With the present structure, a portion of the air forced into the drum through the apertures 22 may pass outwardly through the door 17, vents 25 being provided in the door for this purpose. To replace the air so discharged, the front wall of the casing may be vented as at 26 to permit air to enter the space between the drum and the casing and be drawn into the drum through openings at the rear end thereof, to be herinafter described. I have, in the present instance, merely for the sake of illustration, shown the air discharged from the drum as passing to the exterior of the casing.

The front end of the drum 14 may be supported in any desired manner. In the present instance, I have shown a simple structure providing such support and comprising an upright 29 resting on the base 11 of the casing and supporting a pair of rollers 27 engaging the annular flange 16 of the drum. To prevent the drum from shifting in the direction of its axis, the flange 16 may be provided with a pair of ribs 28 between which the rollers 27 engage.

The drive unit, indicated generally at 30, is arranged not only to drive the drum but also to support the rear end thereof, to carry the heating element 24, and to carry the means for creating the air circulation which, in the present instance, comprises a fan 31. The drive unit 30 is so arranged that it may be assembled separately from the rest of the machine and then inserted through the rear of the casing 10 into supporting and driving relation with the drum 14, with the heating element 24 and the fan 31 placed in proper position within the drum. In the form shown herein, the drive unit comprises a support 32 mounted on the base 11 and having a substantially flat upper surface on which a drive motor 33 is mounted. The support 32 is so dimensioned as to place the drive motor in coaxial relation with the drum 14. The fan 31 is preferably mounted on the motor shaft at the front end thereof so that the fan is placed adjacent the centrally perforated portion of the transverse partition 21 within the drum, while the heating element 24 is preferably of annular form and is arranged to extend about the fan 31. To permit the insertion of the fan 31 and heating element 24 within the drum, the rear wall thereof is centrally apertured as at 34, the diameter of the aperture 34 being somewhat larger than the heating element 24 so that the parts may be easily moved into place.

The drive unit 30 also includes an annular or dished member 35 adapted to fit snugly within the central aperture 34 and to be rigidly attached to the rear wall of the drum such as by angle clips 36. The central portion of the annular member 35 substantially closes the aperture 34 and provides a shield preventing radiation of heat from the heating element 24 through the aperture 34. The dished or annular member 35 is provided with air openings, here shown as a series of small apertures 37 arranged adjacent the periphery of the dished member 35. Thus, air from the space between the drum 14 and the casing 10 may enter the drum to mix with the recirculated air and thus make up for the quantity of air discharged through the vents 25 in the front door 17. The casing of the motor 33 has a non-rotating hub portion 39 (see Fig. 1) extending about the motor shaft and through a central aperture in the dished member 35, and the heating element 24 is supported by having a portion thereof extending into the open end of the hub portion 39 for connection with the motor wiring.

The dished member 35 also constitutes the driven portion of the drum and the means by which the rear end of the drum is supported. To this end, I provide a pair of rollers mounted within the dished member in engagement with the peripheral flange thereof and located above and on opposite sides of the axis of the drum. In the present instance, one of the rollers, indicated at 40, is an idler roller, while the other roller, indicated at 41, is a drive roller. The idler roller 40 is preferably mounted on an upright 42 extending upwardly from the support 32. The drive roller 41 is shiftably mounted in such a way that with an increase in load due to the drum 14, the driving engagement with the motor 33 of the driving connections between the motor and the roller 41 is increased. To this end, the roller 41 is carried on a shaft 43 mounted in the free end of a swinging arm 44 pivotally supported in a bracket 45 mounted on the support 32 at one side of the motor 33. The pivotal axis of the arm 44 is so positioned that the shifting movement of the roller 41 is substantially radially of the axis of the motor 33. The shaft 43 carrying the roller 41 also carries a friction wheel 46 engaging a second friction wheel 47 mounted on the motor drive shaft, the friction wheels 46 and 47 being so proportioned in diameter as to give the desired speed reduction to drive the drum 14 at the desired speed. Because of the position of the arm 44, when the load of the drum imposed upon the drive roller 41 increases, the frictional engagement of the friction wheel 46 with the friction wheel 47 will be increased.

From the foregoing, it will be apparent that the drive unit 30 may be mounted within the casing 10 after the drum 14 and supporting means 29 are in place. The drive unit 30 is then placed in position and the annular member 35 is secured to the rear wall of the drum by the clips 36. Such placing of the drive unit 30 positions the fan 31 and the heating element 24 in a desired place adjacent the transverse partition 21 within the drum.

In the modified form shown in Figs. 3 and 4, I have shown a similar drive unit except that in this instance the motor is separately mounted within the casing. With this arrangement, the drive unit will occupy less space to the rear of the drum and thus reduce the size of the casing required. As illustrated in these two figures, the drive unit in this instance comprises a support

50 mounted on the base of the casing and carrying a bracket 51 supporting an idler roller 52, as in the previous form. The upright 50 also is provided with a bracket 53 carrying a pivoted arm 54 supporting a drive roller 55. The two rollers 52 and 55 similarly engage a dished or annular member 56 secured to the rear wall of the drum. Rotatable with the drive roller 55 is a pulley 60 having frictional engagement with a friction wheel 61. The friction wheel 61 is carried on a shaft 62 mounted coaxially with the drum and carried by a bracket 63 mounted on the support 50. The shaft 62 extends forwardly and carries the fan 31 properly positioned relative to the transverse partition within the drum.

The motor, shown at 64, in this instance is mounted separately from the drive unit and is shown as carried in a support 65 mounted on the base of the outer casing at one side of and below the drum. Thus, the motor does not need to extend rearwardly from the drum to the extent that it did in the previously described form, and the whole drive unit consequently may be made of less depth from front to rear. The shaft of the motor carries a pulley 66 connected by a belt 67 to the pulley 60.

With the structure shown in these two figures, the drive unit may be assembled separately from the rest of the machine and then mounted within the casing in driving relation with the drum. The motor 64 is also separately mounted within the casing and is readily connected to the drive unit by attaching the belt 67.

In the modified form shown in Figs. 5, 6 and 7, there is shown a drive unit similar to those shown in Figs. 1 and 3, but with a different mounting for the rollers supporting the drum at the rear end and with other differences. Thus, the dryer shown in these latter figures comprises an outer casing 70 having a front wall 71 and a rear wall 72, the outer casing 70 being mounted on a base 73. The drum, indicated at 74, is shown cylindrical as in the other forms and is mounted on a horizontal axis. The drum at its front end is provided with an annular flange 75 having a pair of spaced peripheral ribs 76 between which supporting rollers 77 for the front end of the drum are received. The supporting rollers 77 are rotatably carried by an upstanding bracket 80 having a foot portion 79 rigidly secured to the base 73. The rear end of the drum is provided with a similar annular flange 81 providing an opening into the drum from the space between the drum and outer casing 70.

The drive unit in this form, as in the other forms, supports the rear end of the drum and includes means engaging the annular member 81 for driving the drum. The drive unit preferably comprises a vertically extending support 82 having a foot portion 83 detachably secured to the base 73 of the outer casing. The support 82 has a drive motor 84 secured to the front face thereof at the upper end of the support as by screws 85. The motor 84 is preferably arranged coaxially with the drum.

The support 82 extends above the motor 84 and supports means providing a driving connection between the motor 84 and the annular member 81, as well as support for the annular member. To this end, the support 82, at its upper end, is bent inwardly as at 86 over the top of the motor to provide a bearing 87. The bearing 87 carries a trunnion 90 pivotally supporting a carrier member 91, the latter being thereby pivoted intermediate its ends. The carrier member, at its opposite ends, has rotatably supported therein rollers 92 and 93 engaging the inner peripheral surface of the annular member 81. The drum 74 is thereby supported by the two rollers 92 and 93, the pivotal support of the carrier member 91 permitting the rollers and drum to adjust themselves to the particular load imposed on the rollers by the drum.

The roller 92 merely acts as an idler roller while the roller 93 is employed to transmit the drive from the motor 84 to the drum. To this end, the roller 93 is carried on a shaft and mounted in an elongated bearing 94 extending rearwardly of the motor and beyond the rear face of the support 82. At the rear end of the shaft for the roller 93 is mounted a friction wheel 95, of similar construction to the wheel 46 in Fig. 1, engaging a small friction wheel 96 mounted on the rear end of the shaft of the motor 84. Thus, when the drum 74 is loaded with laundry and tends to depress the drive roller 93, causing the carrier member 91 to swing about its pivot, the friction wheel 95 will be pressed into tighter engagement with the friction wheel 96 and thus prevent slippage due to the heavier driving load required for the heavier load in the drum.

As in the case of the other two forms, the present form is adapted to provide for recirculation of some of the air in the drum, as well as discharge of air therefrom and an intake of air to make up for the quantity discharged. In the present construction, the drum is provided with a forwardly bulged wall 100 (see Fig. 5) secured at its periphery to the rear wall of the drum. The wall 100 is provided with perforations 101 throughout its central area and with further perforations 102 in its peripheral area. Intermediate the centrally and peripherally perforated portions, a plain portion 103 may be provided. The shaft of the motor 84, at its front end, is provided with a fan 104, positioned adjacent the centrally perforated portion to force air inwardly or forwardly in the drum. To effect the recirculation, much of the air supplied by the fan 104 is drawn rearwardly from the drum through the perforations 102 in the peripheral portion of the wall 100. To more completely define the path of the air, a rearwardly bulged ring 105 may be secured on the unperforated portion 103 of the wall 100, extending about the fan 104 to direct the flow of air therefrom forwardly through the perforations 101. The heating element 106 may be located rearwardly of the fan, but adjacent thereto, to heat the air as it is drawn forwardly through the fan.

The structure shown in these figures also includes means for limiting the inflow of air from the space between the drum and the outer casing, and to shield the motor 84 from the heat of the heating element 106. For this purpose, I provide a disc-shaped member 107 dished in its central portion, as at 110, to fit over the front end of the motor 84, the dished portion 110 being carried by and rigidly secured to the motor 84 as by screws 111. The member 107 thus shields the motor 84 from the heat radiated by the heating element 106. The member 107 is also arranged to control the inflow of air into the drum, and to this end acts as a closure for the opening through the annular member 81. In its preferred form, the member 107 is rearwardly flanged, as at 112, at its periphery, with the flange 112 arranged in slightly spaced relation to the annular member 81, thus providing an annular slot between the flange 112 and the

annular member 81 through which air from outside of the drum may be drawn inwardly to mix with the recirculated air.

With the form shown in these three figures (Figs. 5, 6 and 7), the annular member 81 may be made as a permanent part of the drum while the closure member 107 constitutes part of the drive unit and is carried thereby. Thus, the drive unit comprises the support 82, the motor 84, the support for the rollers 92 and 93, as well as the fan 104, the heating element 106 and the disc member 107. The drive unit, therefore, may be separately assembled and mounted in proper relation to the drum as a unit.

In all of the forms shown herein, the drum is preferably insulated both on its peripheral and its rear and front walls. Also, in all of these forms, a thermostat (not shown) may be carried as part of the drive unit to extend into the passage of the recirculated air leading to the fan.

I claim:

1. A laundry dryer comprising a casing, a rotatable drum in said casing for tumbling the laundry during drying, supporting means for one end of the drum, and a drive unit in said casing including a rotatably driven annular member having means detachably secured to the opposite end of the drum, said driving unit also including a rotatable drive member supporting and coacting with said annular member to drive said drum, and means supporting said drive unit for removal axially of the drum whereby said drive unit may be freed from said drum for removal from said casing.

2. A laundry dryer comprising a casing, a drum mounted in said casing with its axis horizontal and having a central aperture at its rear end, supporting means for the front end of the drum, and an operating unit including driving means, air circulating means and heating means positioned within said drum and removable through said aperture, and a rotatably driven annular member detachably secured to said drum within said aperture for driving and supporting said drum, said annular member also being removable through said aperture, said unit being removable from said casing independently of said drum and said supporting means when said member is detached from said drum.

3. A laundry dryer comprising a casing, a drum mounted in said casing with its axis horizontal and having a central aperture at its rear end, and a transverse partition adjacent the rear end, supporting means for the front end of the drum, and an operating unit including drive means, air circulating means and heating means, the latter two means being located between said partition and the rear end of the drum and withdrawable through said aperture, and a rotatably driven member detachably secured to said drum within said aperture for driving the drum and supporting the rear end thereof, said air circulating means, said heating means and said driven member being of a size capable of passing through said aperture whereby said unit is removable from said casing independently of said drum and said supporting means when said member is detached from said drum.

4. A laundry dryer comprising a casing, a drum mounted in said casing with its axis horizontal and having a central aperture at its rear end, supporting means for the front end of the drum, and a drive unit mounted in said casing and including a dished member detachably secured to said drum within said aperture, a pair of rollers mounted in and supporting said dished member, and means for driving one of said rollers, said unit being removable from said casing independently of said drum and said supporting means when said dished member is detached from said drum.

5. A laundry dryer comprising a casing, a drum mounted in said casing with its axis horizontal and having a central aperture at its rear end, supporting means for the front end of the drum, and a drive unit comprising a support mounted in said casing, a motor carried by said support, a pair of rollers carried by said support, a drive connection between said motor and one of said rollers, and a dished member detachably secured to the rear end of said drum within said aperture and constituting the sole support for said rear end, said member being supported by said rollers and driven by said one roller, said unit being removable from said casing independently of said drum and said supporting means when said dished member is detached from said drum.

6. A laundry dryer comprising a casing, a rotatable drum positioned within said casing on a horizontal axis and having an annular member at one end, a pair of rollers located within and engaging said annular member and constituting the sole support for said one end of the drum, means for supporting the other end of the drum and for supporting said rollers, and means for driving one of said rollers and thereby driving the drum.

7. A laundry dryer comprising a casing, a rotatable drum positioned within said casing on a horizontal axis and having an annular member at one end, a support mounted within said casing, a pair of rollers carried by said support and located within and engaging said annular member and constituting the sole support for said one end of the drum, a motor mounted on said support for driving one of said rollers and thereby driving the drum, and a support for the other end of the drum.

8. A laundry dryer comprising a casing, a rotatable drum positioned within said casing on a horizontal axis and having an annular member at one end, a pair of rollers engaging said annular member and constituting the sole support for said one end of the drum, said rollers being positioned therein on axes located above and laterally spaced from the drum axis, a support for the other end of the drum, a support for said rollers, and means for driving one of said rollers and thereby driving the drum.

9. A laundry dryer comprising a casing, a rotatable drum positioned within said casing on a horizontal axis and having an annular member at one end, a support for the other end of the drum, an idler roller engaging and positioned within said annular member on a fixed axis, a drive roller engaging and positioned within said annular member on a shiftable axis, a support carrying said idler and drive rollers, a motor, and a drive connection between said drive roller and said motor having a mounting carried by the last-mentioned support which is shiftable toward said motor to increase the driving pressure of said connection on said motor upon increase in driving pressure of said annular member on said drive roller.

10. A laundry dryer comprising a casing, a rotatable drum positioned within said casing on a horizontal axis and having an annular member at one end, a support for the other end of the

drum, a drive roller internally engaging said annular member for supporting and driving said annular member and thereby constituting the sole support for said one end of the drum, a motor, a support for said drive roller, and a drive connection between said drive roller and said motor having a mounting carried by the last-mentioned support which is shiftable toward said motor to increase the driving pressure of said connection on said motor upon increase in the load imposed by said drum on the drive roller.

11. A laundry dryer comprising a rotatable drum positioned with its axis horizontal and having an annular member at one end, means for supporting the other end of the drum, and means for supporting said one end and for driving the drum comprising an idler roller and a drive roller mounted within said annular member on axes above and horizontally spaced from the drum axis, a drive member below and between said rollers, and means pivoted on an axis parallel to the axis of the drive roller for supporting said drive roller for swinging movement toward said drive member including a friction wheel rotatable with said drive roller and engaging said drive member, whereby an increase in the load imposed by said drum on said drive roller increases the pressure of said friction wheel on said drive member.

12. A laundry dryer comprising a rotatable drum positioned with its axis horizontal and having an annular member at one end, means for supporting the other end of the drum, and means for supporting said one end and for driving the drum comprising a support, an idler roller and a drive roller mounted within said annular member on axes above and horizontally spaced from the drum axis, a motor mounted coaxially with said drum and having a friction wheel, an arm carrying said drive roller and pivoted on said support on an axis below said drive roller and on the same side of the drum axis as the drive roller, and a friction wheel carried by said arm and connected to said drive roller and engaging said first-mentioned friction wheel, whereby the load imposed by said drum on said drive roller causes pressure between the friction wheels

13. A laundry dryer comprising a rotatble drum positioned with its axis horizontal and having an opening in its front wall, means for rotatably supporting the front end of the drum, said drum having an aperture in its rear wall and a transverse partition adjacent said rear wall with the partition perforated adjacent its center and adjacent its periphery, and an operating unit comprising a support, drive means, a fan and a heating element, the fan and heating element located within said drum between said partition and said rear wall, a dished member closing said aperture and secured to said rear wall, and a pair of rollers carried by said support located within said dished member for supporting the rear end of the drum with one of said rollers driving said drum, said fan being adapted to recirculate air within the drum and said dished member being vented to admit air from outside the drum into the recirculated air.

14. A laundry dryer comprising a rotatable drum positioned with its axis horizontal, means for supporting one end of the drum, a motor mounted below said drum and at one side thereof, and a drive comprising a support, a fan carried by said support and located coaxially with and in said drum, said fan having a friction wheel rotatable therewith, an annular member secured to the other end of said drum, an idler roller carried by said support and located within said annular member, a drive roller shiftably carried by said support and located within said annular member, said rollers supporting said other end of the drum, and a pulley rotatable with said drive roller and frictionally engaging said friction wheel with a pressure determined by the pressure of the drum on the drive roller, said pulley having a belt connection with said motor.

15. A laundry dryer comprising a rotatable drum positioned with its axis horizontal and having an annular member at one end, means for supporting the other end of the drum, and means for supporting said one end and for driving the drum comprising a support, a pair of horizontally spaced rollers located within said annular member and above its axis for supporting it, a member carrying said rollers at its ends and pivotally supported intermediate its ends by said support, and means for driving one of said rollers and thereby driving the drum.

16. A laundry dryer comprising a rotatable drum positioned with its axis horizontal and having an annular member at one end, means for supporting the other end of the drum, and means for supporting said one end and for driving the drum comprising a pair of rollers located within and in engagement with said annular member, a member extending generally horizontally above the drum axis transversely thereof and carrying said rollers at its ends, means pivotally supporting said member intermediate its ends, and a motor carried by said last-mentioned means and having a driving connection with one of said rollers.

17. A laundry dryer comprising a rotatable drum positioned with its axis horizontal and having an annular member at one end, means for supporting the other end of the drum, and means for supporting said one end and for driving the drum comprising a support, a motor mounted on said support, a member pivotally mounted intermediate its ends on said support on an axis parallel to but above the drum axis, a pair of rollers carried on the respective ends of said member on axes parallel to the drum axis and engaging the inner surface of said annular member to support said one end of the drum, and interengaging friction wheels respectiveley connected to said motor and to one of said rollers for driving the drum.

18. A laundry dryer comprising a rotatable drum positioned with its axis horizontal and having an annular member at one end, means for supporting the other end of the drum, and means for supporting said one end and for driving the drum comprising a vertically extending support, a motor mounted on said support with its axis alined with the drum axis, a transversely extending member pivotally mounted intermediate its ends on said support above said motor with its pivotal axis parallel to the drum axis, a pair of rollers rotatably mounted on the respective ends of said member and engaging the inner surface of said annular member to support said one end of the drum, and peripherally engaging friction wheels respectively connected to said motor and to one of said rollers for driving the drum.

19. A laundry dryer comprising a rotatable drum having an annular member at one end providing an opening therethrough, means for supporting the other end of the drum, and a drive unit for supporting said one end comprising a

support, a pair of rollers rotatably carried by said support and engaging the inner surface of said annular member for supporting said one end of the drum and for driving the drum, air impelling means carried by said support, a heating element carried by said support, a drive for said air impelling means and for one of said rollers, and a closure member for said opening carried by said support, said closure member being peripherally spaced from said annular member to permit a limited flow of air into the drum.

20. A laundry dryer comprising a rotatable drum having an annular member at one end providing an opening therethrough, means for supporting the other end of the drum, and a drive unit for supporting said one end comprising a pair of rollers engaging the inner surface of said annular member for supporting said one end of the drum, a fan and a heating element located within the drum, a closure member for said opening located within said annular member with the fan and heating element on the inside thereof, drive means for said fan and for one of said rollers, and a support for carrying the foregoing parts of the drive unit.

21. A laundry dryer comprising a rotatable drum having an annular member at one end providing an opening therethrough, means for supporting the other end of the drum, and a drive unit for supporting said one end comprising a vertically extending support, a pair of rollers carried by said support and engaging the inner surface of said annular member for supporting said one end of the drum, a motor mounted on said support coaxially with said drum and driving one of said rollers, a fan driven by said motor and located within said drum, a heating element located within said drum adjacent said fan, and a disc-shaped member carried by said motor and located within said annular member with the motor on one side thereof and the fan and heating element on the other.

22. A laundry dryer comprising a rotatable drum having an annular member at one end providing an opening therethrough, means for supporting the other end of the drum, and a drive unit for supporting said one end comprising a motor mounted coaxially with said drum, drive means connecting said motor with said annular member for driving said drum, a fan and a heating element located within said drum, and a disc-shaped member located between the motor and the fan and heating element to shield the motor from the heat of said heating element, said disc-shaped member substantially closing the opening through said annular member but being peripherally spaced therefrom to permit a limited flow of air into the drum.

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