This invention relates to fabric washing and drying machines, and particularly to a fabric washing and drying machine comprising a fabric wall which has a fabric wall for conveying the fluid from the clothes to a point exterior of the container. This invention is a division of my copending application Serial Number 306,118, filed August 25, 1952, which is continued in part of application Serial Number 155,682, filed April 13, 1950. Applications Serial Nos. 155,682 and 306,118 are now abandoned and subject matter thereof has been consolidated in application 538,864, now Patent 2,758,461.

In the above mentioned application Serial Number 155,682 and Patent 2,758,461, a fabric laundering machine is illustrated, described and claimed embodying the concept of utilizing a container which is rotated on a horizontal axis and encompassing all or a substantial portion of the peripheral wall by an absorbent covering alone or in combination with an absorbent belt which transports fluid from the fabrics within the container to a point remote from the exterior thereof. The tumbling of the fabrics within the container onto the fabric peripheral wall thereof causes the water in the fabric to transfer to the fabric of the wall so that after a washing operation, the water in the fabrics is transported from the fabrics to a point exterior of the container. When heat is employed and the air circulated about the fabrics the transporting member extrudes fluid therefrom so that the extraction of moisture from the fabrics will not only be carried to a wet-dry stage, but also to a bone-dry stage, that is to say to a stage at which the fabrics are substantially dry. Such a drying operation also dries the fabric in the peripheral wall and/or the transporting member so that no deleterious effect will occur thereto after the laundering operation.

The present invention pertains to a modification and improvement upon the device illustrated in the parent application Serial No. 155,682 and has for its main object the provision of a driven container having a fabric peripheral wall and improved means for removing liquid therefrom.

Other objects and features of novelty of the invention will be specifically pointed out or will become apparent when referring, for a better understanding of the invention, to the following description taken in conjunction with the accompanying drawings, wherein:

Figure 1 is a view in perspective of a laundering machine with parts broken away illustrating features of the present invention;

Fig. 2 is an enlarged broken sectional view of the structure illustrated in Fig. 1, and taken along the line 2—2 thereof;

Fig. 3 is a sectional view of the machine similar to that illustrated in Fig. 1, showing another form thereof;

Fig. 4 is a broken sectional view of the structure illustrated in Fig. 3, taken along the line 4—4 thereof;

Fig. 5 is an enlarged broken sectional view of the structure illustrated in Fig. 4 taken on the line 5—5 thereof;

Fig. 6 is a view of structure similar to that illustrated in Fig. 3, showing a still further form of the invention.

In Fig. 1 a cylindrical container 11 is illustrated having an impervious front wall 12 and rear wall 13 joined by a plurality of rods 14 at the peripheral edge. A peripheral wall 15 of fluid absorbing material such as linen, cotton, synthetic materials and the like may be secured to the rods by means 10 through which the rods extend as illustrated more specifically in Fig. 2. Raising and tumbling vanes 16 are also secured to the front and rear walls 12 and 13 for assisting the rods to properly raise and tumble the fabrics within the container. The container is suspended on a shaft 17 driven by a pulley 18 from a speed reducing unit 19 by a motor 21. A heating plate 22 is disposed across the peripheral wall adjacent thereto and is herein illustrated as being located at the point of drop of the clothes within the container as they are tumbled. Heat is provided through conduits 23, either electrically, by steam, or other means, for heating the plate 22. The surface of the plate is disposed directly adjacent to the fabric wall 15 so that when the clothes being laundered are dropped upon it, the fabric will be carried into contact with the surface of the plate so that the moisture will be driven therefrom as by an ironing operation.

Referring to Figs. 3, 4 and 5, a further form of the invention is illustrated wherein a container 60 has a front and rear wall 12 and 13 and a perforated peripheral wall 61 which may be of screen material, expanded or punched metal or the like, having a fabric peripheral wall 62 applied to the exterior thereof. Vanes 63 are mounted adjacent to the peripheral wall between the front and rear walls 12 and 13. The container 60 is mounted on a shaft 17 as described above. A band 63 is disposed about the peripheral wall 62 being larger in diameter, said band having a perforated exterior wall of metal, plastic or other rigid material 64 on which an inner surface of absorbent or water carrying material 65 is provided. The material 65 contacts the material 62 of the container 60 for some distance in the area 66 made possible by having the center 67 of the band 64 offset from the shaft 17. The band 64 and the peripheral edge 68 of the end walls 12 and 13 and peripheral wall 61 are scalloped at 69, as illustrated in Fig. 7, to form a gearlike drive with the scalloped end walls 61. The container 60 and the band 64 are driven by rotating the band 64 to assist in heating the air circulated within the rotor and for directing the radiant heat for drying the fabric material 62 and 65 provided thereon. In place of the heating element 26, or employed in conjunction therewith, is a heating element 81 which is disposed within the hollow roller 73 affixed to an insulating bracket 82 on one of the standards 74. Heat from the roller is directed to the band 64 to assist in driving moisture from the material 65 on the inner face thereof. In such relationship, the clothes within the roller have the water therein carried to the fabric material 62 from which the fabrics are dried by the heater 82 of 26 or 81 both in combination.

In Fig. 6 a further form of the invention is illustrated that wherein the band 64 has scallops 69 thereof mated with the scallops 69 of the container at the point 66 so as to have the band and container driven in synchroniza-
tion. The band 64 is driven from gears 71 and 72 mounted opposite to the point 66 on a pair of rollers 83 and 84 which contacts the band 64 and applies pressure thereto for mechanically squeezing water from the fabric material 65 into a trough 85 from which it is conducted to the container during a washing cycle and to drain thereafter. A heating element 86 is mounted between the container and band for delivering radiant heat to the fiber material 62 and 65 for driving moisture therefrom and also for providing heat to circulated air which passes between the container and band through the clothes within the container. In either of the structures described in Figs. 3 to 6, an outer casing 87 may be provided about the outer band to enclose the entire machine. Suitable mounting means, not herein illustrated, supports the casing 87 from the floor. It is to be understood that the gears 71 and 72 and rollers 83 and 84, illustrated in Fig. 6, are driven by pulley 76 on a shaft 77 from a speed reducing unit 19 and motor 21 as hereinabove described.

What is claimed is:

1. A laundering machine having a support, a cylinder mounted for rotation on said support, said cylinder having a pair of spaced end walls, a peripheral wall between the end walls made of liquid carrying material, means adjacent to said peripheral wall extending inwardly therefrom for raising wet clothes on one side of the cylinder as it is rotated and ejecting them near the top of the cylinder to drop on a bottom portion thereof, means for extracting liquid from the peripheral wall, and means for drying said wall near the point of drop of said clothes.

2. A laundering machine having a support, a cylinder mounted for rotation on said support, said cylinder having a pair of spaced end walls, a peripheral wall between the end walls made of liquid carrying material, means adjacent to said peripheral wall extending inwardly therefrom for raising wet clothes on one side of the cylinder as it is rotated and ejecting them near the top of the cylinder to drop on a bottom portion thereof, and means for extracting liquid from the peripheral wall adjacent the point of drop of said clothes.

3. A laundering machine having a support, a cylinder mounted for rotation on said support, said cylinder having a pair of spaced end walls, a peripheral wall between the end walls made of liquid carrying material, means adjacent to said peripheral wall extending inwardly therefrom for raising wet clothes on one side of the cylinder as it is rotated and ejecting them near the top of the cylinder to drop on a bottom portion thereof, and means for extracting liquid from the peripheral wall embodying a larger cylinder eccentrically surrounding said first cylinder and exerting pressure against the same at the area of engagement therebetween due to the off center position of the axis thereof, said area of engagement being disposed adjacent said bottom portion.

4. A laundering machine having a support, a cylinder mounted for rotation on said support, said cylinder having a pair of spaced end walls, a peripheral wall between the end walls made of liquid carrying material, means adjacent to said peripheral wall extending inwardly therefrom for raising wet clothes on one side of the cylinder as it is rotated and ejecting them near the top of the cylinder to drop on a bottom portion thereof, and means for extracting liquid from the peripheral wall by exerting pressure, the last named means including a larger cylinder surrounding said first cylinder, which larger cylinder exerts said pressure against said first cylinder adjacent said bottom portion due to an off center position of the axis thereof, said larger cylinder having a liquid carrying peripheral wall to which liquid from the peripheral wall of the first cylinder is transferred.

5. A laundering machine having a support, a cylinder mounted for rotation on said support, said cylinder having a pair of spaced end walls, a peripheral wall between the end walls made of liquid carrying material, means adjacent to said peripheral wall extending inwardly therefrom for raising wet clothes on one side of the cylinder as it is rotated and ejecting them near the top of the cylinder to drop on a bottom portion thereof, means for extracting liquid from the peripheral wall by pressure exerted by a larger cylinder surrounding said first cylinder, which larger cylinder exerts said pressure against said first cylinder adjacent said bottom portion of the axis thereof, said larger cylinder having a liquid carrying peripheral wall to which liquid from the peripheral wall of the first cylinder is transferred, and heating means for providing heat between said cylinders for driving moisture from said peripheral walls.

6. A washing machine having a support, a cylinder mounted for rotation on said support, said cylinder having a pair of spaced end walls and a peripheral wall therebetween made of liquid carrying material, a drum about said cylinder having its center offset from the center of the cylinder to engage a portion of the peripheral wall, and a layer of liquid carrying material on the inner face of the drum to which liquid carried by the peripheral wall of the cylinder transfers at the area engaged thereby, said cylinder being adapted to tumble fabrics, inserted therein, against a predetermined portion of said peripheral wall, adjacent said area of the drum engaged by the cylinder.

7. A washing machine having a support, a cylinder mounted for rotation on said support for tumbling fabrics therein, said cylinder having a pair of spaced end walls and a peripheral wall therebetween made of liquid carrying material, a drum about said cylinder having its center offset from the center of the cylinder to engage a portion of the peripheral wall, a layer of liquid carrying material on the inner face of the drum to which liquid carried by the peripheral wall of the cylinder transfers at the area engaged thereby, gearlike portions on said cylinder and drum in meshed relationship for maintaining said cylinder and drum in synchronized driving relation.

8. A washing machine having a support, a cylinder mounted for rotation on said support for tumbling fabrics therein, said cylinder having a pair of spaced end walls and a peripheral wall therebetween made of liquid carrying material, a drum about said cylinder having its center offset from the center of the cylinder to engage a portion of the peripheral wall, a layer of liquid carrying material on the inner face of the drum to which liquid carried by the peripheral wall of the cylinder transfers at the area engaged thereby, gearlike portions on said cylinder and drum in meshed relationship for maintaining said cylinder and drum in synchronized driving relation, and roller means for engaging the liquid carrying material of said drum.

9. A washing machine having a support, a cylinder mounted for rotation on said support for tumbling fabrics therein, said cylinder having a pair of spaced end walls and a peripheral wall therebetween made of liquid carrying material, a drum about said cylinder having its center offset from the center of the cylinder to engage a portion of the peripheral wall, a layer of liquid carrying material on the inner face of the drum to which liquid carried by the peripheral wall of the cylinder transfers at the area engaged thereby, gearlike portions on said cylinder and drum in meshed relationship for maintaining said cylinder and drum in synchronized driving relation, and a pair of rollers engaged opposite sides of said drum in position to squeeze liquid from the layer of material thereof.

10. A washing machine having a support, a cylinder mounted for rotation on said support for tumbling fabrics therein, said cylinder having a pair of spaced end walls and a peripheral wall therebetween made of liquid carrying material, a drum about said cylinder having its center offset from the center of the cylinder to engage a portion of the peripheral wall, a layer of liquid carrying material on the inner face of the drum to which liquid
carried by the peripheral wall of the cylinder transfers at the area engaged thereby, gearlike portions on said cylinder and drum in meshed relationship for maintaining said cylinder and drum in synchronized driving relation, roller means for engaging the liquid carrying material of said drum, and gear means driven with said roller means engaging the gearlike portion of said cylinder and drum.

11. A washing machine having a support, a cylinder mounted for rotation on said support for tumbling fabrics therein, said cylinder having a pair of spaced end walls and a peripheral wall therebetween made of liquid carrying material, a drum about said cylinder having its center offset from the center of the cylinder to engage a bottom portion of the peripheral wall, a layer of liquid carrying material on the inner face of the drum to which liquid carried by the peripheral wall of the cylinder transfers at the area engaged thereby, gearlike portions on said cylinder and drum in meshed relationship for maintaining said cylinder and drum in synchronized driving relation, roller means for engaging liquid carrying material of said drum, and gear means driven with said roller means engaging the gearlike portion of the drum.

12. A washing machine having a support, a cylinder mounted for rotation on said support for tumbling fabrics therein, said cylinder having a pair of spaced end walls and a peripheral wall therebetween made of liquid carrying material, a drum about said cylinder having its center offset from the center of the cylinder to engage a bottom portion of the peripheral wall, a layer of liquid carrying material on the inner face of the drum to which liquid carried by the peripheral wall of the cylinder transfers at the area engaged thereby, gearlike portions on said cylinder and drum in meshed relationship for maintaining said cylinder and drum in synchronized driving relation, roller means for engaging the liquid carrying material of said drum, and heating means between said cylinder and drum for driving water from said liquid carrying material.

13. A washing machine having a support, a cylinder mounted for rotation on said support for tumbling fabrics therein, said cylinder having a pair of spaced end walls and a peripheral wall therebetween made of liquid carrying material, a drum about said cylinder having its center offset from the center of the cylinder to engage a bottom portion of the peripheral wall, a layer of liquid carrying material on the inner face of the drum to which liquid carried by the peripheral wall of the cylinder transfers at the area engaged thereby, gearlike portions on said cylinder and drum in meshed relationship for maintaining said cylinder and drum in synchronized driving relation, roller means for engaging the liquid carrying material of said drum, and heating means within said roller means.