

Sept. 12, 1933.

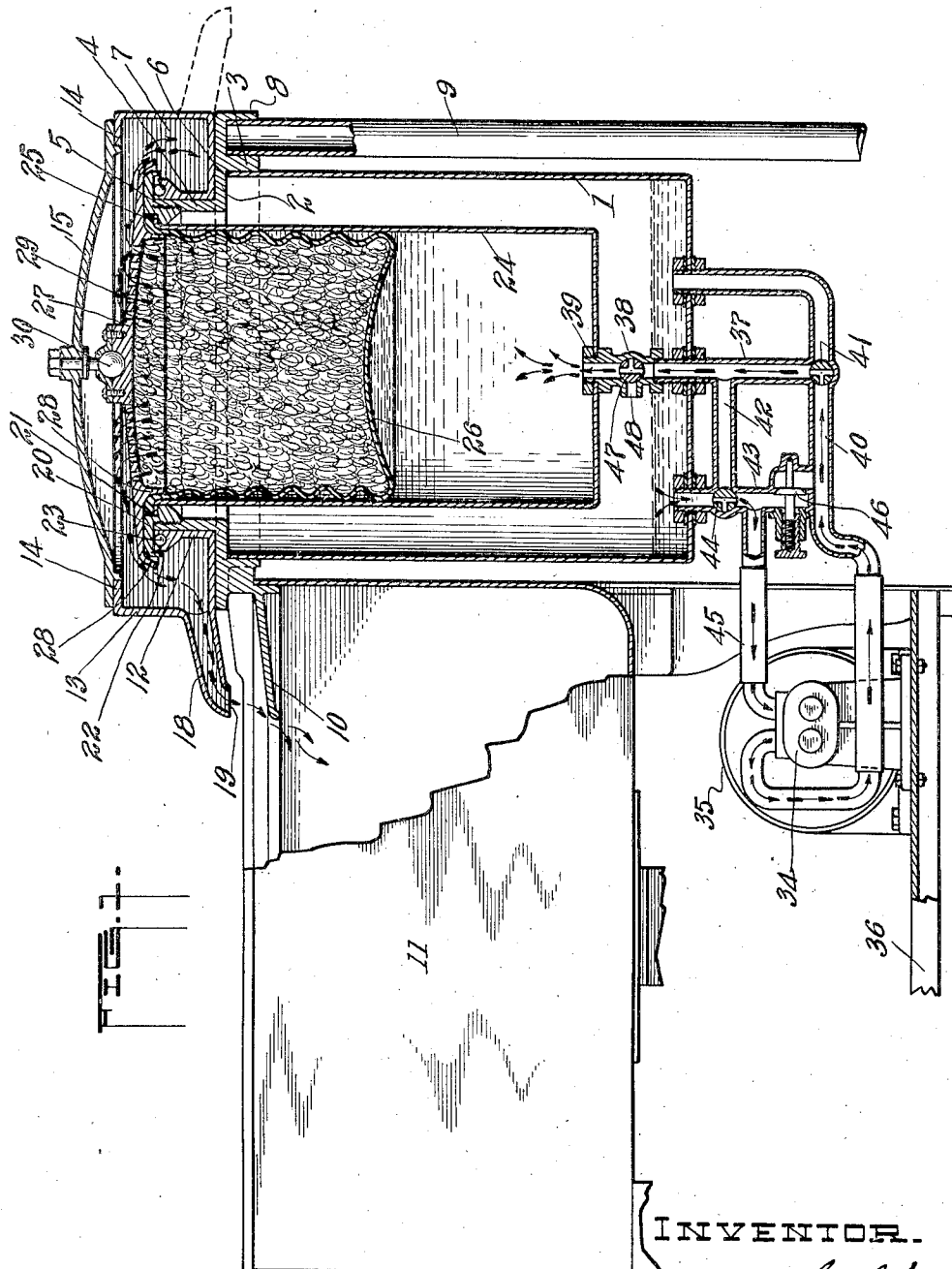
B. E. GETZ

1,926,378

CLOTHES DRIER

Filed July 22, 1931

2 Sheets-Sheet 1



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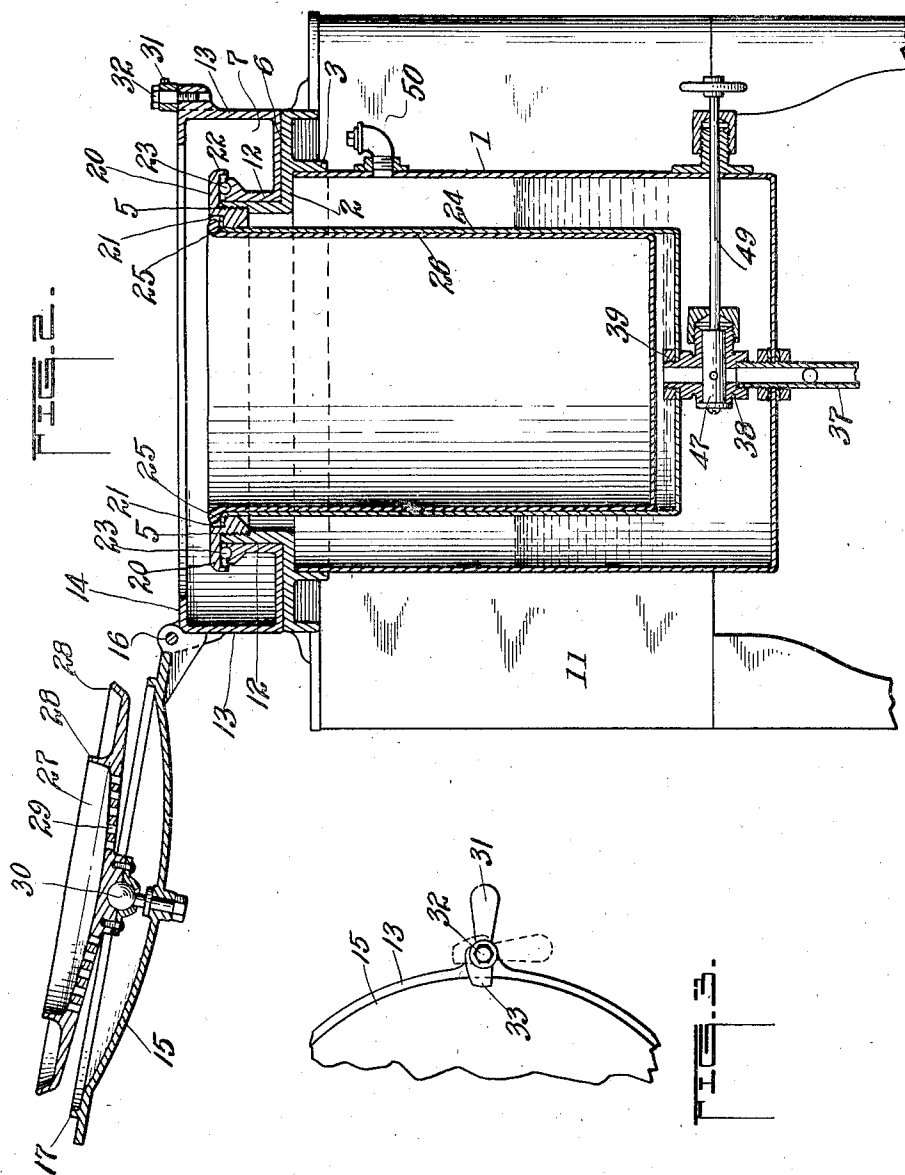
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1,926,378

CLOTHES DRIER

Filed July 22, 1931

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

1,926,378

CLOTHES DRIER

Benjamin E. Getz, Morton, Ill.

Application July 22, 1931. Serial No. 552,417

7 Claims. (Cl. 100—50)

This invention has reference to clothes driers and it has for its principal object to provide a clothes drier such as may be used coupled to domestic washing machines.

5 The invention has for a further object to provide a drier employing a receptacle containing a clothes holder capable of being collapsed and distended and, therefore, made of any suitable material whereby the water which is extracted
10 from the clothes by pressure will not be passed through the material of the clothes holder, but which may be forced under pressure from the clothes into a distributing means by which the water so extracted may be discharged into a
15 washing machine or to other and different points into different receptacles located about the drier.

The invention has for a further object to provide in combination with a clothes holder which is adapted to be collapsed and distended, a distributing means preferably in the form of a
20 revoluble chamber adapted to receive water extracted from clothes and arranged to be revolved whereby to discharge the water extracted from the clothes into different receptacles located at
25 different points about the drier.

A still further object of the invention is to provide a clothes drier which comprises a reservoir for containing a fluid, such for instance as
30 water, and supported within the reservoir a receptacle in which is adapted to be removably placed a clothes holder of flexible material, whereby the same may be collapsed and distended; a pressure means for forcing the water
35 from the reservoir into the receptacle whereby to collapse the clothes holder, containing clothes, and through such pressure and the collapsing of said clothes holder, extract by pressure the water from the clothes and cause the water to be dis-
40 charged into a distributing head revolvably supported at the head of the reservoir and said receptacle and which said distributor may be moved to different selective points about the drier for the purpose of discharging the water ex-
45 tracted from the clothes into a washing machine or other receptacle; said pressure means also adapted to function as a suction means whereby to return the water from the receptacle to the reservoir after the drying action.

50 In the present disclosure, I have elected to show a pressure means employing water as the element for compressing the clothes holder when drying by the extraction of water from clothes within the clothes holder; however, it is to be
55 understood that a fluid other than water may be employed without departing from the spirit and scope of the invention.

Other and further objects will more fully appear from the following description.

60 That the invention may be more fully under-

stood, reference is had to the accompanying drawings forming part of this application, illustrating a preferred embodiment of the invention, in which:

Fig. 1 is a vertical sectional view through the drier, the clothes holder having been collapsed or compressed and said drier being shown in
65 coupled relation with a washing machine tub shown partly in section as is also the pressure and suction means for introducing and with-
70 drawing the fluid from the receptacle, whereby to collapse and distend the clothes holder;

Fig. 2 is a vertical sectional view through the drier taken transversely to that shown in Fig. 1, with the clothes holder distended and with the
75 cover or closure for the drier swung up and out of closed position; and

Fig. 3 is a detail plan view of the locking means for the cover or closure for the drier.

Like characters of reference denote correspond-
80 ing parts throughout the figures.

I have elected to show the drier employing my invention coupled to a washing machine of the domestic type, although this need not necessarily
85 be the case, since the drier is capable of being used independently of a washing machine.

The drier comprises a reservoir 1, preferably cylindrical in shape, of suitable length and open at its upper end; said reservoir being adapted to contain a fluid, preferably water. In the in-
90 stance shown, with the drier in association with a washing machine tub, there is provided a head 2 having a depending cylindrical flange 3 to adapt the head to be secured to the top of the reservoir and with said flange surrounding the upper end
95 thereof and the said head is provided with an upwardly extended annular neck portion 4 of a diameter somewhat less than the diameter of the inside of the reservoir 1, said neck being inter-
100 nally threaded at its upper end, as at 5. This construction of the head provides an annular shelf or rest portion 6 which surrounds the neck on which may be seated and revolved a chamber or water collecting ring 7. I prefer, when using
105 the construction just described, to provide the head 2 with a downwardly depending socket 8 adapted to receive the supporting leg or standard 9 and also to provide the said head with the extended shelf or water directing portion 10 which
110 overlies a washing machine tub 11 somewhat in the manner shown in Fig. 1, and having an inclined upper surface from the head towards the tub and arranged when the drier is coupled to the tub to be located within the tub. The said cham-
115 ber or water collecting ring 7 has the form of preferably an annular body which includes the inner annular short neck portion 12 encircling and having a preferably smooth fit about the neck portion 4 of the head 2 to adapt it to be rotated on the neck 4 about said head, and said chamber

is further provided with an outer wall 13 terminating in an overlying annular ring-like top portion 14 providing an opening into the chamber or water collecting ring 7 to permit access to be had to the interior of the drier and to provide a rest and seat for a closure 15 hinged at 16 to one side of said chamber. This closure has a depending flange 17, which when the closure is in a closed position on the drier, fits down within the annular ring-like top portion 14 of said chamber. Extending radially from the chamber or water collecting ring 7, is a spout 18, inclined downwardly from the chamber and opening therinto and having a discharge opening 19 at the outer end of the spout. This spout provides a convenient means for an attendant to manipulate the chamber or water collecting ring to rotate it about the head of the drier. In Fig. 1, two positions of this spout are shown. In full lines the chamber 7 has been rotated to position the spout over the washing machine tub 11 and over the shelf portion 10 and it should be obvious that when in this position any water discharged from the chamber will pass out through the spout and over the shelf portion into the washing machine tub. In dotted lines the chamber has been swung to a position diametrically opposite the full line position and the spout is shown positioned to discharge water from the chamber into a suitable receptacle. In other words, the chamber being rotatable about the drier, the spout 18 may be rotated to selective positions, whereby to discharge water which is extracted from the clothes into a receptacle or receptacles located at different points about the drier.

Adapted to have a threaded connection with the threads 5 of the neck portion 4 of the head 2, for securement to said head, is a ring-like member 20. This ring-like member is provided with an inner annular shoulder portion 21 and an outer depending annular flange 22 which overlies the outer portion of the neck 12 of the chamber or water collecting ring 7 and there is provided between said ring 20 and said neck 12 a ball bearing 23, of any suitable construction. The head 2 and the ring-like member 20 which has a threaded connection therewith, are stationary and the chamber or water collecting ring 7 rotates in relation thereto and the ball bearing which is provided facilitates an easy and smooth operation of the chamber or water collecting ring 7 when the same is rotated, by manual operation, for the selective location of the spout 18 of said chamber, about the drier.

The drier further comprises a receptacle 24 of smaller diameter than the reservoir 1 and of shorter length than said reservoir, as shown, and open at its upper end; the upper end being provided with an outwardly turned annular flange 25 whereby to seat the flange on the shoulder 21 of the ring-like member 20 and for supporting the receptacle in a stationary and non-rotatable position within the reservoir 1. This receptacle may or may not be removed from within the reservoir, but if it is desired to remove the same, it will only be necessary to uncouple it from couplings provided at its lower end, which will be described. There is provided to be suspended within the receptacle 24, a clothes holder 26. This holder is of a suitable flexible material which is capable of being collapsed and distended within the receptacle 24. To secure the holder in position in said receptacle, the upper annular edge of the holder is caused to overlie and be supported on the flange 25 of the receptacle 24 and

then secured in position by a cover or lid 27. This cover or lid has an outwardly flared depending flange 28, which when said cover or lid has been secured in position, overlies the outer portion of the annular ring-like member 20 so that water which is extracted from the clothes within the clothes holder may be directed over said cover or lid 27 and into the chamber or water collecting ring 7, somewhat in the manner shown by the arrows in Fig. 1. Said cover or lid is further provided with an inner annular depending flange 28, which when said cover or lid is in closed position, overlies and bears against the upper portion of the clothes holder 26 so as to secure the same firmly within the receptacle 24 and down on the flange 25 of said receptacle 24, as shown. Said cover or lid is further provided with a multiplicity of discharge openings 29 for the egress of water which may be extracted from the clothes in the clothes holder 26 which will be received in the chamber or water collecting ring 7 to find an outlet therefrom through the discharge spout 18, in the manner previously indicated. The lid or cover 27 is carried by and suspended from the closure 15 by a ball bearing 30 which makes the lid or cover more or less flexible in its relation to the closure so that when the closure is in closed position on the drier and the cover or lid has been moved into position to firmly hold the clothes holder 26 within the receptacle 24, it will find its seat on the ring-like member 20 for effectively holding the clothes holder within the receptacle 24.

It should be obvious from the foregoing that the clothes holder 26 may be firmly held suspended within the non-rotatable receptacle 24 by means of the cover or lid 27 which is secured in position against the ring-like member 20 by closing the closure 15 over the top of the receptacle and that the said clothes holder 26 may be removed by lifting the closure 15 on its pivot 16 and with it the lid or cover 27. When the parts described are in closed position, the closure may be held firmly seated in closed position by means of the locking lever 31 pivoted at 32 to the chamber or water collecting ring 7, see Figs. 2 and 3, and with the locking portion 33 of said lever 31 overlying the outer portion of the closure 15. The clothes holder may be made of any suitable material so long as it is flexible and adapted to be collapsed and distended within the receptacle 24. It is sufficient to say that whatever material the clothes holder is made of, when pressure is applied to the clothes holder for compressing or collapsing it, the water extracted from the clothes will not pass through the body of the clothes holder but be caused to be discharged through the openings 25 in the lid or cover 27 and to find outlet from the drier through the chamber or water collecting ring 7, in the manner previously explained.

I have elected in the present instance to show the employment of water to be admitted to the receptacle 24 under pressure whereby to collapse the clothes holder 26 for forcing the water from the clothes contained therein, out through the cover or lid 27 into the chamber or water collecting ring and from thence through the spout 18 thereof to a suitable receptacle. It should be obvious, however, that instead of employing water as the means for compressing or collapsing the clothes receptacle, I might use some other fluid.

34 designates a combined suction and pressure pump, of any suitable construction, the same adapted to be actuated by a motor 35 suitably

coupled thereto. This motor and pump, when used in conjunction with a structure such as shown, would be supported on a frame 36 of the washing machine. The motor to which reference is made may also be used as the power unit for imparting motion to the agitating means of the washing machine, but since these elements do not constitute any part of the present invention, they are not shown.

Suitable piping, including valve connections, are shown providing communication between the reservoir 1, the receptacle 24 and the pump 34, and such piping includes the section 37 which is suitably coupled to the bottom of the reservoir 1 and extending up therein is connected by means of a coupling 38 with the lower end of the receptacle 24, a nut 39 being provided and located within the receptacle 24 for removably securing the receptacle 24 to said coupling 38. The lower end of the section 37 is coupled to a pipe section 40 which has one end connected with the pressure side of the pump 34 and its opposite end coupled to the bottom of the reservoir 1 and in communication with the interior thereof. At the juncture of the pipe 37 with the pipe 40, there is provided a T-valve 41. Also connected with the pipe 37 between the valve 41 and the bottom of the reservoir 1, is a lateral 42 which is coupled to a pipe section 43, the upper end of which is connected with the bottom of the reservoir 1 and in communication with the interior thereof and the lower end of said pipe 43 is coupled to and has communication with the pipe 40. At the juncture of the lateral 42 with the pipe 43 is a T-valve 44. Connected mediate the ends of the pipe 43 and preferably below the T-valve 44, is a pipe 45 which is connected with the suction side of the pump 34. In the lower end of the pipe 43 there is provided a relief valve 46 which controls communication between the lower end of the pipe 43 and the pipe 40. There is also provided in the coupling 38, a T-valve 47 which controls passage of the fluid through said pipe 37 and which also controls an outlet through an elbow 48 in said coupling 38.

In the operation of the drier, assuming that the clothes holder 26 is in the distended position shown in Fig. 2, filled with damp clothes which have been removed from the washing machine tub and placed in the clothes holder, and the cover or lid 27 closed with the closure 15 locked in closed position, and further assuming that the valves 41, 44 and 47 have been positioned as shown in Fig. 1, the pump when actuated will suck the water from the reservoir 1, down through the pipe 43, the valve 44 and through the pipe 45, into the suction side of the pump and then by pressure, force from the pressure side of the pump, into the pipe 40, through the valve 41, up through the pipe 37, and through the valve 38, into the lower end of the receptacle 24; the pressure of the water as it rises in the receptacle compressing or collapsing the clothes holder 26 into a position somewhat as shown in Fig. 1, forcing the water from the damp clothes within the clothes holder out through the perforations 29 in the cover or lid 27, and into the chamber or water collecting ring 7, and thence from said chamber or ring, out through the spout 18 into a receptacle, from whatever position the chamber or water collecting ring has been located or positioned about the drier, to be received either in the washing machine tub or in a receptacle. When the pressure in the receptacle 24 equals the tension of the means which holds the relief

valve 46 closed, the water which is being forced from the pressure side of the pump 34 and which passes into the pipe 40, will leave the pipe 40 at the point of the relief valve 46 and pass by said valve into the pipe 43 and thence through the pipe 45 into the suction side of the pump 34 and continue in this manner until this operation is ceased.

The attendant then desiring to remove or exhaust the water from the receptacle 24, will leave the valve 47 in the position in which it is shown; will adjust the valve 44 so as to open communication between the lateral 42 and the pipe 45 and close communication into the lower part of the reservoir 1 and will also change the position of the valve 41 to open communication through the pipe 40 to the lower portion of the reservoir 1 and close communication between the pipe 40 and the pipe 37. In this position of the parts, the pump continuing to operate, it should be obvious that the suction side of the pump will draw the water from the receptacle 24 into the pipe 37 and from thence to the lateral 42 and through the pipe 45 to the pump and then from the pressure side of the pump the water will be forced through the pipe 40 and through the valve 41 up into the lower portion of the reservoir 1 and restore the water to said reservoir.

It is within the limits of this invention to make the reservoir longer or deeper, in which event, instead of using the pump to take the water from the receptacle 24 and put it back into the reservoir 1, to accomplish this by gravity flow, in which event the valve 47 would be turned so that the water would pass by weight of gravity from the receptacle 24 into the coupling 38 and from the coupling through valve 47 and the opening 40 in said coupling into the reservoir. In the last mentioned position of the valve 47, communication is closed from the coupling to the pipe 37.

I have shown in Fig. 2, an operating means 49 for the manual actuation of the valve 47 and a similar means may be employed for the valves 41 and 44.

In the carrying out of the invention, it is to be understood that the receptacle 24, the clothes holder 26 and the cover or lid 27 are non-rotatably supported in connection with the head 2 and that the chamber or water collecting ring is rotatable on the head 2 and with it the closure 15, the latter made possible by the ball coupling, by the closure 15 and the cover or lid 27, as shown at 30.

For supplying the reservoir 1 with the proper amount of water, such water may be introduced thereinto at the time of the assembly of the receptacle 24 in the reservoir, or such water may be introduced through a suitable inlet coupling designated 50, connected to the reservoir 1 near its upper end, see Fig. 2.

It is to be understood, of course, that all coupling connections between the piping and couplings with the reservoir 1 and with the receptacle 24, are watertight seal connections.

What I claim is:—

1. In a clothes drier, in combination, a head support having an open ended cylindrical portion, a receptacle supported from adjacent the top of said support and suspended through the cylindrical portion thereof, said receptacle comprising a vertically elongated cylindrical casing open at its upper end, a clothes holder adapted to be supported by said support and suspended therefrom within said receptacle and of a material which will permit the holder to be collapsed

and distended and when distended to lie in substantial juxtaposition throughout its length adjacent the vertical wall of the receptacle, a cover adapted for securing the holder in the receptacle and provided with water egress openings for the escape of water extracted from clothes on the collapse of said holder, means for securing said cover in engaging relation with said holder, a water receiving and discharging means carried by said head support and disposed about the cylindrical portion thereof and adapted for the discharge of water at selective positions circumferentially of the support, and a releasable pressure means for collapsing said clothes holder.

2. In a clothes drier, in combination, a head support having an open ended cylindrical portion including a downwardly inclined shelf extension, a receptacle supported from adjacent the top of said support and suspended through the cylindrical portion thereof, said receptacle comprising a vertically elongated cylindrical casing open at its upper end, a clothes holder adapted to be supported by said support and suspended therefrom within said receptacle and of a material which will permit the holder to be collapsed and distended and when distended to lie in substantial juxtaposition throughout its length adjacent the vertical wall of the receptacle, a cover adapted for securing the holder in the receptacle and provided with water egress openings for the escape of water extracted from clothes on the collapse of said holder, means for securing said cover in engaging relation with said holder, a water receiving and discharging means carried by said head support and disposed about the cylindrical portion thereof and adapted for the discharge of water at selective positions circumferentially of the support and over said shelf extension, a pump, and fluid connections between said pump and said receptacle whereby fluid may be injected into said receptacle for collapsing said clothes holder.

3. In a clothes drier, in combination, a head support, a water containing reservoir connected with and depending from said support, a receptacle adapted to be supported by said support and suspended therefrom within said reservoir, a clothes holder adapted to be supported by said support and suspended therefrom within said receptacle and of a material which will permit the holder to be collapsed and distended, a cover adapted for securing the holder in the receptacle and provided with egress openings for the escape of water extracted from clothes on the collapse of said holder, means for securing said cover in engaging relation with said holder, a water collecting chamber rotatable about said head support and having a discharge spout adapted for selective positioning about said head support, a pump, and combined pipe and valve connections between the reservoir and receptacle and between the reservoir, receptacle and pump whereby water from the reservoir may be injected into the receptacle for collapsing the clothes holder and withdrawn from said receptacle and returned into said reservoir.

4. In a clothes drier, in combination, a head support, a water containing reservoir connected with and depending from said support, a receptacle adapted to be supported by said support and suspended therefrom within said reservoir,

a clothes holder adapted to be removably supported by said support and suspended therefrom within said receptacle and of a material which will permit the holder to be collapsed and distended, a cover adapted for securing the holder in the receptacle and provided with egress openings for the escape of water extracted from clothes on the collapse of said holder, a ring-like water collecting chamber rotatable about said head support having a discharge spout adapted for selective positioning about said head support, a closure for said chamber, means supporting the cover from said closure which will permit the latter to be rotated with the chamber about said head, a pump, and combined pipe and valve connections between the reservoir and receptacle and between the reservoir, receptacle and pump whereby water from the reservoir may be injected into the receptacle for collapsing the clothes holder and withdrawn from said receptacle and returned into said reservoir.

5. In a clothes drier, a reservoir adapted to contain a fluid, a receptacle, means to suspend the receptacle within the reservoir, a collapsible and distendable clothes holder, means to secure the holder in suspension in said receptacle and provided with outlets for the escape of water extracted from clothes when said holder is collapsed, means to carry off the water escaping through said securing means, and means to cause the flow of fluid from the reservoir into the receptacle for collapsing said clothes holder and then to cause the flow of the fluid back again into said reservoir.

6. In a clothes drier, a reservoir adapted to contain a fluid, a receptacle, means to suspend the receptacle within the reservoir, a collapsible and distendable clothes holder, means to secure the holder in suspension in said receptacle and provided with outlets for the escape of water extracted from clothes when said holder is collapsed, a distributing means adapted to receive the water escaping through said securing means and movable to selective water discharging positions about the head of said drier, and means to cause the flow of fluid from the reservoir into the receptacle for collapsing said clothes holder and then to cause the flow of the fluid back again into said reservoir.

7. In a clothes drier, in combination, a head support having an upstanding annular neck portion, a water collecting ring-like chamber rotatable about said neck and having a discharge movable to selective positions, a ring-like member overlying said neck and a member of said chamber and secured to said neck, a receptacle suspended from said ring-like member, a flexible clothes holder also suspended from said ring-like member and collapsible and distendable within said receptacle, a cover for the receptacle and ring-like member adapted to secure the clothes holder in position and having egress openings for the escape of water from the clothes holder, when collapsed, into said water collecting chamber, a closure for said water collecting chamber, means to support said cover from said closure, and a fluid pressure means in communication with said receptacle for admitting fluid to the receptacle for collapsing said clothes holder and for withdrawing the fluid from said receptacle.

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