

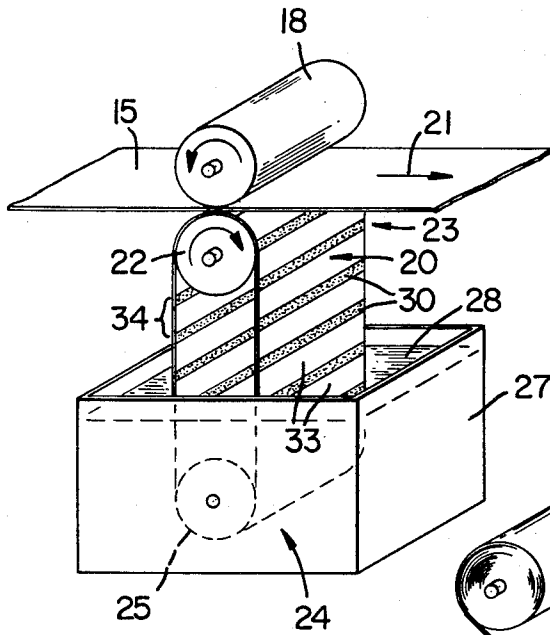
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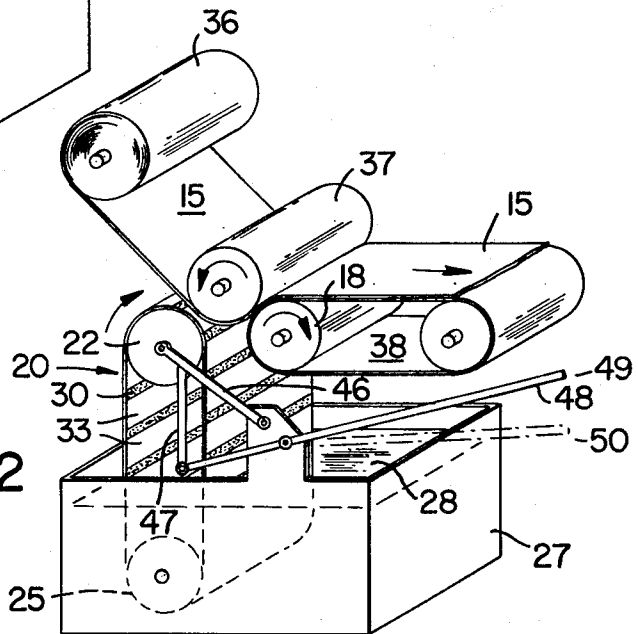
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WET AND DRY TOWEL DISPENSER

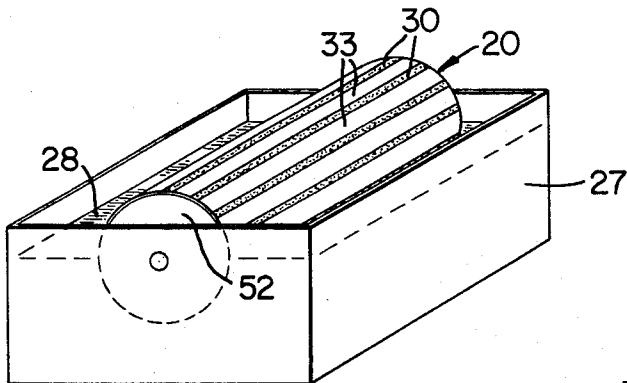
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FIG_1



FIG_2



FIG_3

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WET AND DRY TOWEL DISPENSER

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ABSTRACT OF THE DISCLOSURE

An apparatus for dispensing wet or dry towels. Wet towels are dispensed by positioning the towels into contact with a rotatable moisture-absorbent surface which surface has installed thereon a plurality of transverse capillary insulators. The surface moves through a bath absorbing the solution contained therein and then into contact with the towels being dispensed. In contacting the towels the surface imparts moisture by absorption. The absorbent surface is movable by linkage so as to move selectively in and out of contact with towels as they are being dispensed, thus supplying wet and dry towels respectively.

This invention relates to a towel dispenser which can uniformly wet intermittently withdrawn towels and is further adaptable to selectively dispense towels in a wet or dry condition.

An object of this invention is to provide a towel dispenser which supplies uniformly wetted towels upon intermittent demand. The towels, supplied from a conventional source, are typically moved by frictional contact with a driving roller or surface. In the interior of the dispenser, the towels are brought into contact with a rotatable moisture-absorbent surface or belt which has installed thereon a plurality of transverse capillary insulators. This belt moves through a bath absorbing the solution contained therein, and then rotates into contact with towels being dispensed, imparting its contained moisture to the towels by absorption. The insulators installed on the belt arrest capillary wetting along the belt surface when towels are not being withdrawn from the dispenser, thus assuring uniform towel wetting in spite of intermittent use of the dispenser.

Another object in this invention is to provide a towel dispenser which can selectively dispense wet and dry towels. Typically, towels are dispensed by frictionally passing between a drive surface or roller and a counter-pressure surface or roller into the vicinity of a pivot supported rotatable absorbent surface or belt. This pivot is actuated by a linkage positioned for convenient operation by the consumer. A selective movement of the linkage moves the absorbent surface in and out of contact with the towels as they are being dispensed, thus supplying wet and dry towels respectively as desired.

A further object of this invention is to provide a rotatable absorbent surface or belt which is capable of being uniformly wetted when intermittently passed through a bath. Typically, one end of the belt is held by a support roller and the other extremity tensionally suspended in a bath by a wetting roller. The surface or belt contains a plurality of transverse capillary insulators which entrap moisture in the belt as it passes through the bath. During periods when the belt is motionless with respect to the bath these same insulators prevent the uneven wetting of the belt by a capillary or wicking action along its surface and also impede the gravitational flow of the moisture from the belt into the bath.

An advantage of this invention is that a rotatable belt having uniform absorbent quality may be inexpensively

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constructed of cotton or flannel cloth with silicone putty insulators installed at selected intervals.

An additional advantage of this invention is that a dispenser according to the present invention readily adapts to the installation of a conveyor which conveniently delivers towels to the consumer.

Other objects, features and advantages of this invention will become more apparent after referring to the following specification and attached drawings in which:

FIG. 1 is a schematic perspective view of a wet towel dispenser;

FIG. 2 is a schematic perspective view of a wet and dry towel dispenser with attached conveyor; and

FIG. 3 is a perspective view of an alternate embodiment of the rotatable moisture-absorbent surface shown in FIG. 1.

Referring now to the drawings, a wet towel dispenser constructed in accordance with the present invention is schematically illustrated in FIG. 1. Towel 15 is shown positioned between drive surface or roller 18 and rotatable absorbent surface or belt 20. Towel 15 consists typically of a continuing strip of paper or cloth provided from a conventional supply (not shown) as is common in the towel dispensing art. Towel 15 is mounted for movement in the direction of arrow 21 by the rotation of drive roller 18. Alternately, towel 15 may be drawn through the dispenser from the direction of arrow 21. Rotatable absorbent surface or belt 20 is positioned about an axially-mounted support roller 22 at towel contact end 23 and has bath contact end 24 tensionally suspended by wetting roller 25 in tank 27 containing bath 28. In FIG. 1, belt 20 is gravitationally suspended in bath 28 by the weight of wetting roller 25. Roller 25 is restricted in movement parallel to its rotational axis by the walls of tank 27. Alternately, wetting roller 25 may be tensionally suspended in bath 28 by an axial mounting which permits its rotation. Bath 28 is typically a solution of soap and water.

In operation, rotatable moisture-absorbent surface 20 is impelled through bath 28 as towel 15 moves through the dispenser. The belt 20 entraps the liquid of bath 28 and brings it into contact with towel 15 where absorption takes place.

As illustrated in FIG. 1, rotatable absorbent surface 20 can be constructed in the shape of a belt. The belt is typically cloth, such as cotton or flannel, which has a capillary or wicking property when placed in a liquid. This capillary or wicking property causes a measured amount of liquid in quantity sufficient for the wetting of towel 15 to be entrapped in rotatable surface 20 as it moves through the bath 28. This same capillary property, however, transfers the absorbed liquid to towel 15 when belt 20 is stationary, causing uneven or excessive towel wetting. This excessive wetting causes oversaturated paper towels to rip or tear and cloth towels to drip. To maintain the affinity of absorbent belt 20 for moisture and yet to avoid these undesirable side effects, a plurality of transverse capillary insulators 30 are installed to surface 20 leaving exposed surfaces 33. These insulators, commonly of silicone putty or other similar water-repellant substance, arrest the capillary or wicking effect when the surface 20 is not being rotated. They have the added advantage of retaining water in rotatable surface 20 by arresting the gravitational return of the entrapped liquid when an exposed surface 33 is elevated above the level of bath 28 to a height where the capillary property of the cloth will no longer support the absorbed liquid. The space 34 of capillary insulators 30 is selected to obtain maximum benefit from the capillary property of surface 20.

With reference to FIG. 2, a wet and dry towel dispenser is shown. Towel supply 36 comprises a convolute roll

which is frictionally unraveled by having towel 15 pass between driving roller 18 and counter-pressure surface or roller 37. As is apparent, counter-pressure surface 37 may either rotate as towel 15 is dispensed or alternately be a stationary surface of low friction which merely slides towel 15 as it is frictionally impelled by driving surface or roller 18. Conveyor 38 is attached to driving roller 18 and dispenses towel 15 along its surface to the consumer. Rotatable absorbent surface 20 is installed similar to the description of FIG. 1, with the exception that it is brought in and out of contact with towel 15 by pivot 46 connected through mechanical linkage 47 to medially swiveled handle 48.

In operation, the operation of medially swiveled handle 48 adapts the invention so that it is the practical equivalent of a sink with supplied towels. When medially swiveled handle 48 is in upper position 49, linkage 47 is moved downward rotating pivot 46 and its supported absorbent surface 20 away from towel 15. In this position, dry towels will be dispensed. Alternately, when the consumer desires wetted towels, handle 48 is manipulated to downward position 50, moving linkage 47 to upward and rotating pivot 46 and its supported absorbent surface 20 into contact with towel 15.

A towel dispenser constructed in accordance with FIG. 2 affords additional insurance that the wetting of the towel is uniform. The frictional passing of towel 15 over drive roller 18 results in a compressing or wringing action of the counter pressure surface or roller 37. Bath 28 is positioned to entrap any such surplus moisture.

With reference to FIG. 3, an alternate embodiment of rotatable absorbent surface 20 is shown. A cylindrical roller 52 has moisture-absorbent surface 20 radially mounted on its exterior. The insulators 30 and the exposed cloth areas 33 are contained in absorbent surface 20 as hereinbefore described. This embodiment contains the advantage of eliminating the belt and its two supporting rollers.

Drive surface 18 and counter pressure surface 37 have been shown for purposes of illustration as being cylindrical rollers. It should be understood that belts, similar to conveyor 38, and other similar methods of frictionally propelling the towel may be substituted therefor.

Although the foregoing invention has been described in some detail by way of illustration and example for purposes of clarity and understanding, it is understood that certain changes and modifications may be practiced within the spirit of this invention as limited only by the scope of the appended claims.

What is claimed is:

1. A wet towel dispenser for the sequential conveying of wet towels comprising: a rotatable absorbent surface having a bath end and a towel contact end; a bath containing a liquid position for submersing said bath end therein; means for the frictional engagement of said towel with said towel contact end whereby said towel is wetted as dispensed by said rotatable absorbent surface; and a plurality of transverse capillary insulators installed to said rotatable absorbent surface whereby absorbed liquid on said surface is arrested from capillary movement and gravitational flow.

2. A wet towel dispenser for the sequential conveying of wet towels according to claim 1 wherein: said rotatable absorbent surface comprises a cloth belt.

3. A wet towel dispenser for the sequential conveying of wet towels according to claim 1 wherein: said transverse capillary insulators comprise silicone putty.

4. A wet towel dispenser for the sequential conveying of wet towels according to claim 1 and wherein: said means for the frictional engagement of said towel comprises a drive roller.

5. A towel dispenser for the sequential conveying of towels in a selective wet or dry condition comprising: a rotatable absorbent surface having a bath end and a towel contact end; a bath containing a liquid position for submersing said bath end therein; a drive surface; a counter-pressure surface installed for the frictional engagement of said towels between said drive surface and said counter-pressure surface; a plurality of transverse capillary insulators installed in said rotatable absorbent surface whereby absorbed liquid on said rotatable surface is arrested from capillary movement or gravitational flow; and pivot means mounting said wetting surface for selective frictional engagement and non-engagement with said towels whereby said towels are wetted in a position of engagement.

6. A towel dispenser for the sequential conveying of towels in a selective wet or dry condition according to claim 5 wherein: said transverse capillary insulators comprise silicone putty.

7. A towel dispenser for the sequential conveying of towels in a selective wet or dry condition according to claim 5 wherein: said rotatable absorbent surface comprises a cloth belt.

8. A towel dispenser for the sequential conveying of towels in a selective wet or dry condition comprising: wetting means for saturating said towels; a drive surface; a counter pressure surface installed for the frictional engagement of said towels with said drive surface whereby motion supplied to said drive surface is frictionally imparted to said towels; pivot means comprising: a handle medially swiveled; a pivot mounting said wetting means adjacent said towels; a linkage having two ends, one of said ends connected to said handle and the other of said ends connected to said pivot means; said pivot means mounted for selective frictional engagement and non-engagement with said towels whereby said towels are conveyed wet in the position of engagement.

9. A towel dispenser for the sequential conveying of towels in a selective wet or dry condition according to claim 8 and wherein said wetting means comprises: a rotatable absorbent surface having a bath end and a towel contact end; a bath containing a liquid positioned for submersing said bath end therein; and a plurality of transverse capillary insulators installed to said rotatable absorbent surface whereby absorbed liquid on said surface is arrested from capillary movement and gravitational flow.

10. A towel dispenser for the sequential conveying of towels in the selectively wet or dry condition comprising: a rotatable absorbent surface having a bath end and a towel contact end; a bath containing a liquid position for submersing said bath end therein; a drive surface; a counter pressure service installed for the frictional engagement of said towels between said dry surface and said counter pressure surface; and pivot means mounting said wetted surface for selective frictional engagement and non-engagement with said towels whereby said towels are wetted in a position of engagement.

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