Jan. 13, 1942. E. E. BIBY ET AL 2,270,031

METHOD OF DRYING FLOOR COVERINGS AND OTHER FABRICS

Filed March 18, 1940 3 Sheets-Sheet 1

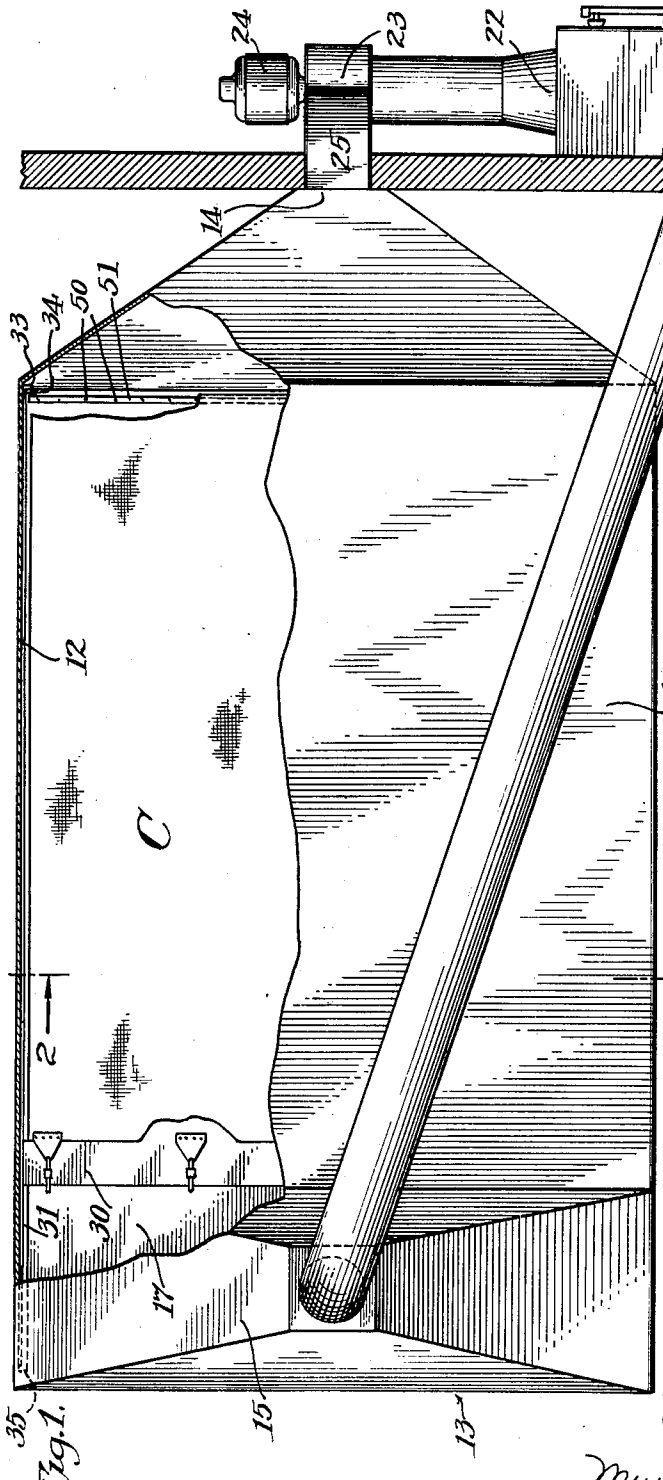


Fig. 1.

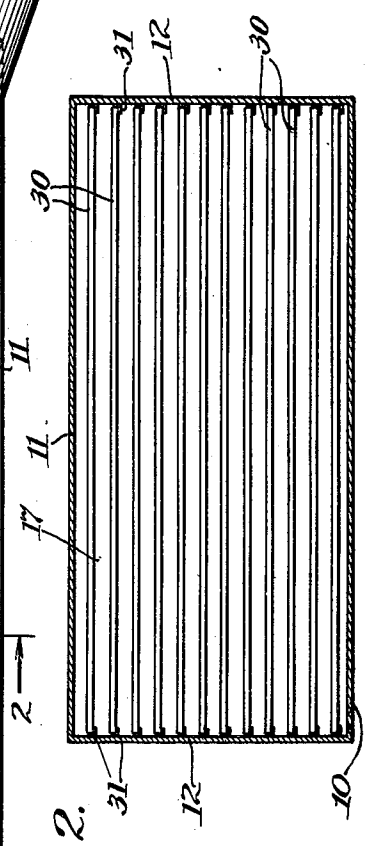


Fig. 2.

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Filed March 18, 1940 3 Sheets-Sheet 2

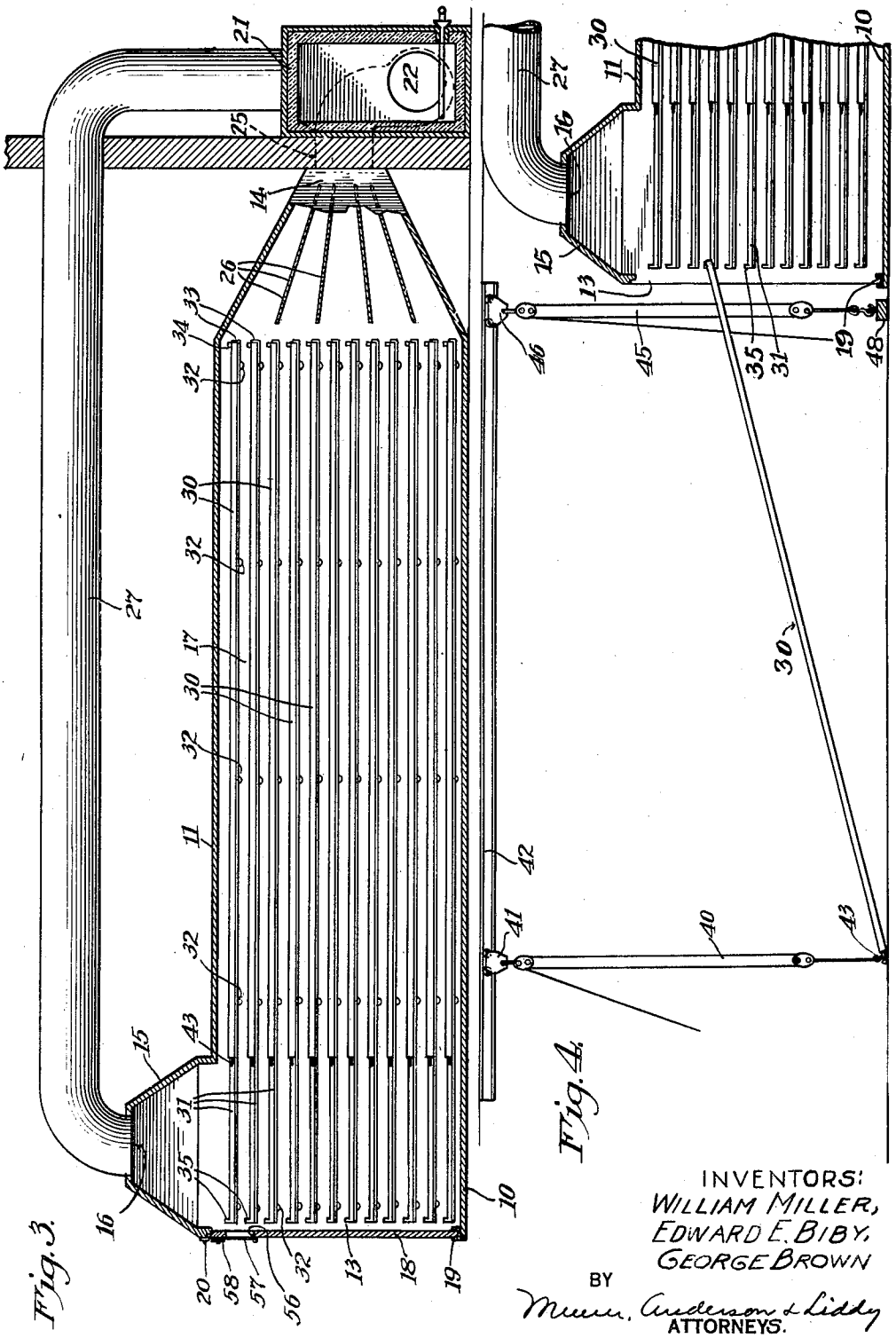


Fig. 3.

Fig. 4.

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METHOD OF DRYING FLOOR COVERINGS AND OTHER FABRICS

Filed March 18, 1940 3 Sheets-Sheet 3

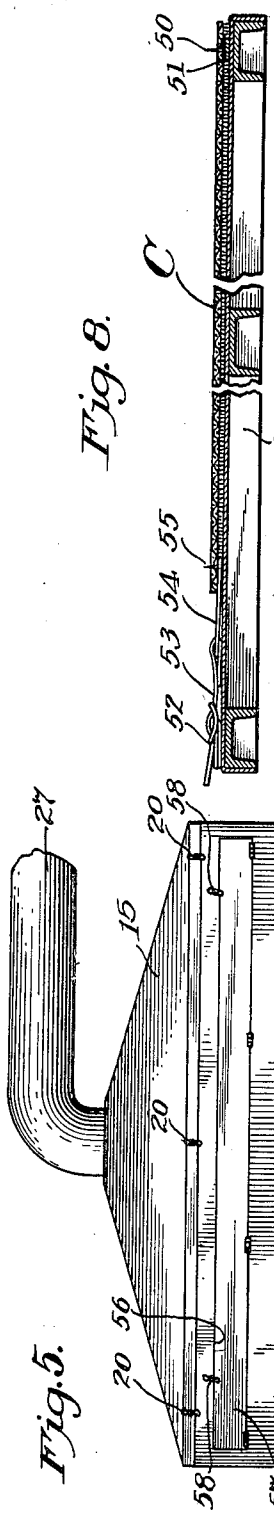


Fig. 5.

Fig. 8.

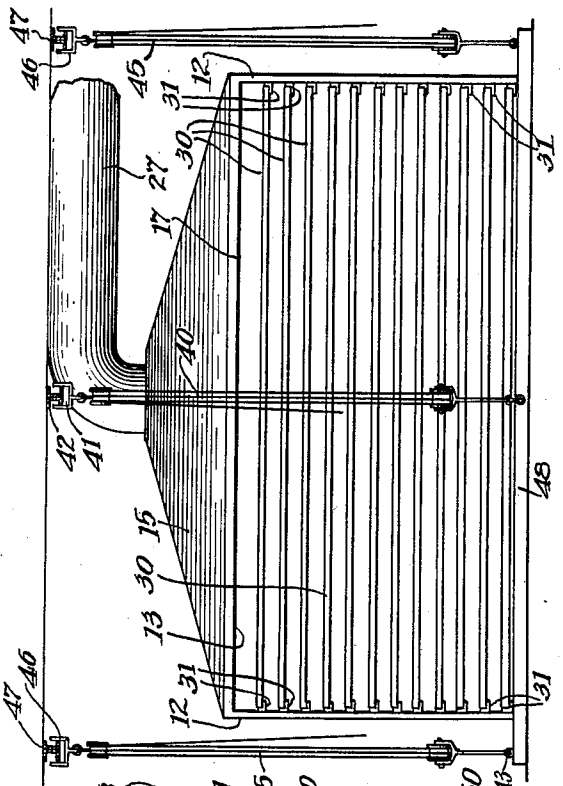


Fig. 6.

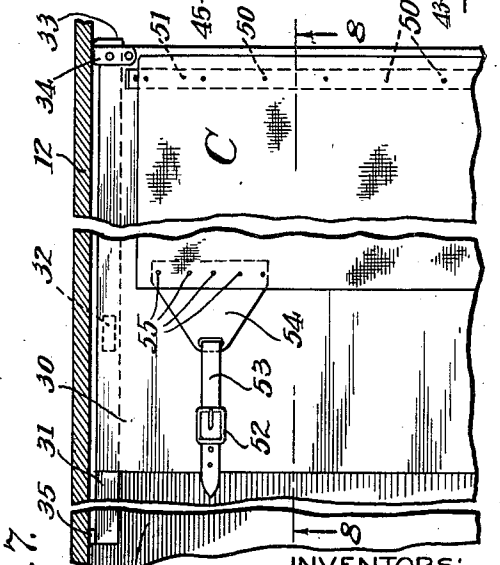


Fig. 7.

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2,270,031

METHOD OF DRYING FLOOR COVERINGS AND OTHER FABRICS

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Application March 18, 1940, Serial No. 324,600

8 Claims. (Cl. 34—7)

This invention relates generally to the art of cleaning floor and wall coverings such as rugs, carpets and tapestries, and more particularly to the drying thereof following the washing operation.

It is the present practice in cleaning floor coverings such as rugs, to suspend washed rugs on poles in a suitable drying room, into which heat is introduced until the rugs are dry. This method of drying involves considerable arduous labor in handling the rugs and requires from eight to twelve hours for the drying operation.

This method of drying rugs has the outstanding disadvantage of causing the nap to dry harsh and stiff, which necessitates a separate brushing operation with a stiff brush, in most cases ineffective to restore the nap to its original softness, and at best only partially softening the nap, thus actually impairing the quality of the rug. Furthermore, the rugs must next be tacked down on a floor, then sized and finally swept and subjected to a steaming operation in an effort to improve the condition of the nap, all of which involves approximately a further one and one-half hours for each average nine by twelve foot rug. In a plant cleaning an average of forty rugs per day, approximately fifty-four hundred square feet of sizing space is necessary. The present practice of handling rugs following the washing operation results in adversely affecting the condition of the nap in most instances; is relatively expensive; involves a large amount of labor in handling a rug many times; necessitates a large area of floor space which disproportionately increases the overhead; and involves such a large amount of time for the drying and subsequent operations upon a rug before it is ready for delivery, that the cost of properly cleaning a rug is comparatively high with the attendant unsatisfactory product.

The primary object of this invention is to overcome the many aforestated disadvantages of treating a washed rug or other covering by the provision of a method entirely eliminating various time consuming operations, and greatly simplifying and concentrating the remaining operations in a comparatively small space accommodating a number of rugs which are so steamed and dried concurrently that the nap will not be adversely affected and will dry in its original soft state so as to entirely obviate any subsequent operations upon a rug in an effort to improve its condition, all to the end that following this method which reduces the labor in handling the rug and the time and space involved to a minimum, the rug can be rolled up and is ready for delivery, whereby a high quality service can be rendered at a comparatively small cost.

Another object of this invention is to provide a method by which rugs to be dried are subjected to such heat in a closed chamber that a steamy atmosphere will be created which has the desired effect upon the nap, with the rugs supported nap side downmost upon an impervious support in a manner to insure that the nap will be the last portion of the rug to dry and will be sufficiently steamed during the drying operation to finally dry in its originnal soft state, all in a relatively short time as compared to present practice, and without necessitating any further operations upon the rug except to roll the rug for delivery.

With these and other objects in view, the invention resides in the method as set forth in the following specification and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a plan view, partly broken away, of a drying apparatus by which the method embodying this invention can be carried out;

Figure 2 is a transverse sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a vertical longitudinal sectional view of the drying apparatus shown in the preceding figures;

Figure 4 is a fragmentary longitudinal sectional view of the drying apparatus illustrating lifting mechanism embodied therein;

Figure 5 is a view of the drying apparatus in front elevation and in its working or closed position;

Figure 6 is a view similar to Figure 5 and illustrating the apparatus in open position;

Figure 7 is a fragmentary enlarged plan view of a portion of a typical rug support or platform embodied in the apparatus;

Figure 8 is a fragmentary vertical longitudinal sectional view taken on the line 8—8 of Figure 7.

Referring specifically to the drawings, an apparatus by which the method embodied in this invention can be practiced is composed of a generally rectangular structure constructed of metal or wood defined by solid bottom and top walls 10 and 11, side walls 12, a front open end 13 and a rear open end reducing in cross-sectional area to a hot air inlet 14.

At the front end 13, the top wall 10 is provided with an opening defined by a hood 15 providing an outlet 16 from the drying chamber 17 formed by the structure between the inlet 14 and the outlet 16. The open front end 13 is closed by a

removable door 18 seating along its bottom edge in a channel member 19 and secured in closed position by suitable latches 20.

Hot air is supplied to the chamber 17 by a suitable furnace or heater 21 using gas or other fuel, the outlet 22 of the furnace being connected to the intake of a blower 23 driven by an electric motor 24 and discharging the heated air into the inlet 14 of the chamber 17 through a pipe 25. Suitable baffles 26 in the inlet end of the chamber 17 deflect the hot air from the inlet 14 sufficiently to effect a substantially uniform distribution of the air in the chamber.

Connecting the outlet 16 with the top of the furnace 21 is an air return duct 27 through which the heated air is recirculated and the heat thus conserved.

Supported in spaced superposed relation in the chamber 17 are article supporting elements in the form of rectangular platforms 30, all of identical construction and each of which can be constructed of wood or sheet metal on suitable frames to provide a smooth and impervious surface on which to secure the rug or other covering for the drying operation.

The platforms 30 are slidably mounted in the chamber on rails 31 fixed to the side walls 12 and having rotatably mounted rollers 32 at intervals to facilitate movement of the platforms on the rails from the extreme position in the chamber wherein the platforms engage stops 33 on the rails as shown in Figures 3 and 7, to other positions exteriorly of the chamber. One of these positions is shown in Figure 4 and illustrates the forward end of a platform resting on the floor, with the rear end of the platform releasably retained against disengagement from the rails by coacting stops 34 and 35 on the platform and forward ends of the rails, respectively.

In order to facilitate handling of the platforms, a suitable block and tackle 40 carried by a trolley 41 operating on an overhead track 42 can be connected to a handle 43 on the forward end of any platform to raise and lower the forward end of same.

Two other blocks and tackle 45 having trolleys 46 operating on other overhead tracks 47 are connected to a cross bar 48 to form a sling or cradle in which the rear end of any platform can be raised and lowered. However, with drying chambers of comparatively low height, the weight of a platform will permit same to be easily handled by two operators to obviate the necessity of using the block and tackle systems.

At the rear edge of each platform, a series of upstanding pins 50 are provided on a bar 51 secured to the platform to enable a rug or other covering to be attached at one end to the platform. At the forward end of each platform, a series of suitable buckles 52 are secured for co-action with straps 53 secured to plates 54 having rows of upstanding pins 55 adapted to be engaged by the other end of the rug. Thus, by pulling upon the straps 53, a rug can be stretched taut on a platform for the drying operation. Adjacent its upper edge, the door 18 is provided with a vent opening 56 closed by a hinged door 57 which can be secured in closed position by catches 58.

The operation of the invention is as follows:

In carrying out the method embodied in this invention, one of the platforms 30 is withdrawn sufficiently for a washed and wet rug or other covering C which has been sized, if necessary, to be secured and stretched on the platform in an inverted position which will dispose the nap side of the rug downmost in contact with the smooth impervious surface of the platform as shown in Figure 8. The platform is now shifted into the chamber 17 and the remaining platforms loaded as just described. With all platforms in place as shown in Figure 3, the door 18 is closed, and the furnace 21 and motor 24 are started to force heated air through the chamber 17 so that the air will flow in the narrow passages above and below each platform and be recirculated.

As the wet rugs are heated, the air absorbs moisture and creates a steamy atmosphere which in practice can range from 160 to 250 degrees Fahrenheit or more if desired.

As the drying operation proceeds, the upper and exposed back of each rug is the first part of the rug to dry, due to the fact that the nap side of the rug is confined against the impervious surface of a platform which delays the drying of the nap portion with highly advantageous results.

By this method of drying a rug, no sizing is drawn into the nap to stiffen it, and the nap is effectively steamed during the drying operation so that when finally dry, it is in its normally soft condition, thus eliminating all subsequent brushing, steaming and sweeping operations necessary in the present practice of cleaning rugs.

When the rugs are partially dry any excessive amount of steam can be vented from the apparatus by opening the door 57 so as to expedite the final drying of the rugs without stiffening the nap, as sufficient steam has been present during the previous portion of the drying operation to steam the nap and aid in preventing same from drying out first.

What is claimed is:

1. The method of drying coverings having a nap on one side only, by utilizing a heating chamber containing a smooth impervious supporting surface for a covering, which comprises: securing a wet covering on the supporting surface with the nap side of the covering in contact with the surface; and circulating heated air in the chamber at a temperature sufficient to create a steamy atmosphere therein and first dry the exposed back portion of the covering, with the drying of the nap portion thereof delayed by its confinement against the supporting surface so as to effect steaming of the nap portion and its final drying in a soft condition.

2. The method of drying coverings having a nap on one side only, by utilizing a heating chamber containing a smooth impervious supporting surface for a covering, which comprises: securing a wet covering on the supporting surface with the nap side of the covering in contact with the surface; circulating heated air in the chamber at a temperature sufficient to create a steamy atmosphere therein and first dry the exposed back portion of the covering, with the drying of the nap portion thereof delayed by its confinement against the supporting surface so as to effect steaming of the nap portion and its final drying in a soft condition; and venting the chamber to atmosphere when the drying operation has progressed sufficiently to effect a predetermined steaming of the nap portion of the covering, so as to expedite the final drying

of the covering without adversely affecting the condition of the nap.

3. The method of drying coverings having a nap on one side only, by utilizing a heating chamber and an impervious supporting surface for a covering, which comprises: securing a wet covering nap side downmost on the supporting surface; subjecting the thus supported covering in the heating chamber to the action of heated air at a temperature sufficient to create steam in the covering and first dry the exposed back of the covering, with the drying of the nap delayed by its contact with the supporting surface, to insure that the nap will dry in a normal soft condition.

4. The method of drying coverings having a nap on one side only, by utilizing a heating chamber, which comprises: supporting the covering substantially flat in the chamber; subjecting the covering to the action of heated air at a temperature sufficient to create a steamy atmosphere in the chamber; and protecting the nap side of the covering against direct contact with the air so as to delay the drying of the nap until after the back of the covering has dried, whereby the nap will be steamed and will dry in a normally soft condition.

5. The method of drying cloth having a nap on one side only and a backing to which sizing is applied, by utilizing a heating chamber, which comprises: supporting the cloth in the chamber; generating steam in the chamber by the circulation of heated air therein so as to dry the cloth; and shielding the nap from the drying effect of the air sufficiently to delay the drying of the nap until after the backing of the fabric has dried to an extent which will prevent sizing in the backing from being drawn into the nap to stiffen same.

6. The method of drying fabric material having a nap on one side only by utilizing an enclosed space which comprises: supporting the wet fabric material in the space; subjecting the material to a drying heat by circulation of a heating medium in the space, in contact with the back of the fabric only; and shielding the nap of the material from the drying effect of the heat sufficiently for the back of the fabric to dry before the nap.

7. The method of drying fabric material having a nap on one side only which comprises: immovably supporting the wet fabric material; subjecting the material to a circulating drying heating medium in contact with the back of the fabric only; and shielding the nap of the material from the drying effect of the heat sufficiently for the moisture content of the back to be removed therefrom more rapidly than is the moisture content of the nap.

8. The method of drying fabric materials having a nap on one side only by utilizing an enclosed space which comprises: supporting the wet fabric flatwise in the space; circulating a drying heating medium in the space, in contact with the back of the fabric only; and shielding the nap side of the material from the heat sufficiently for the back of the fabric to dry more rapidly than the nap.

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