Dec. 11, 1956 C. W. COX 2,773,375

FIBER WET-TREATING APPARATUS

Filed May 25, 1953 2 Sheets-Sheet 1

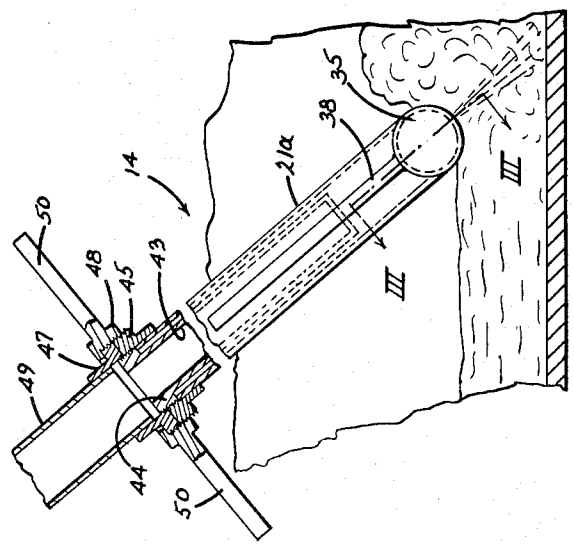


Fig. 2

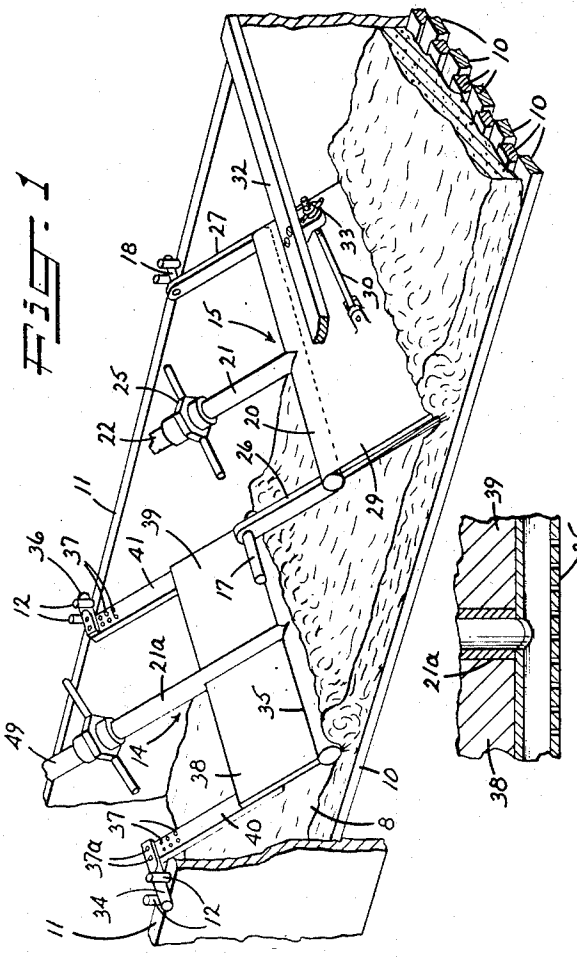


Fig. 1

Fig. 3

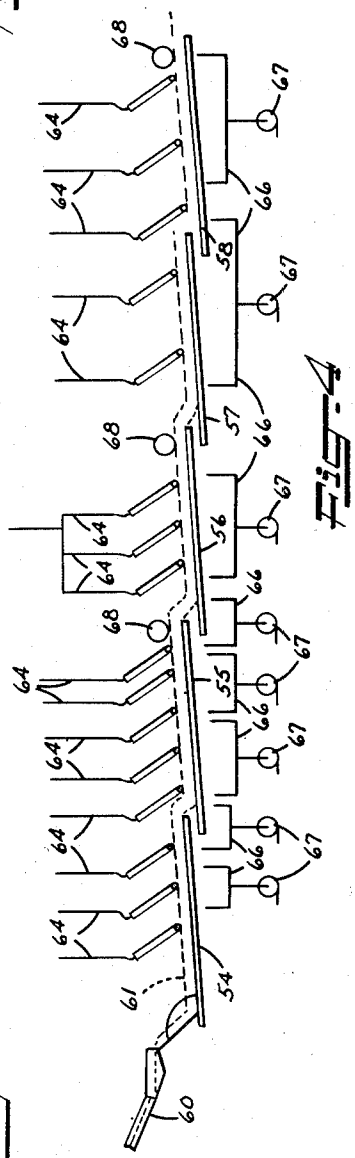


Fig. 4

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FIBER WET-TREATING APPARATUS

Filed May 25, 1953 2 Sheets-Sheet 2

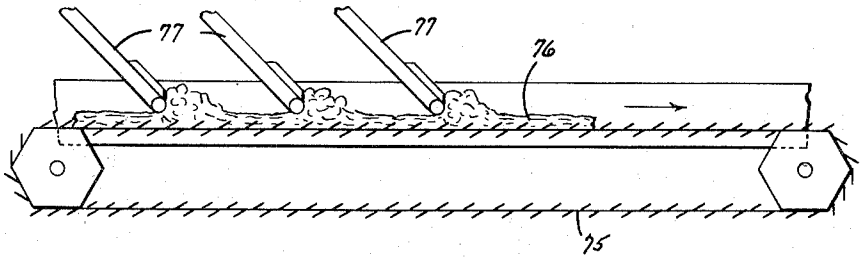


Fig. 5

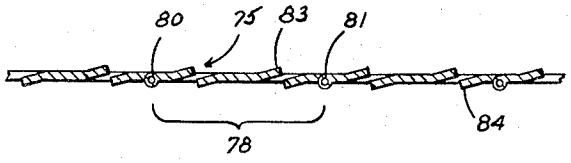


Fig. 6

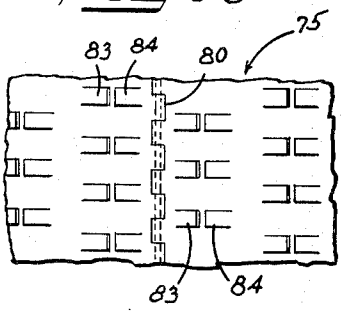


Fig. 7

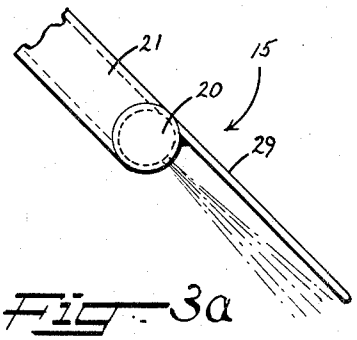


Fig. 3a

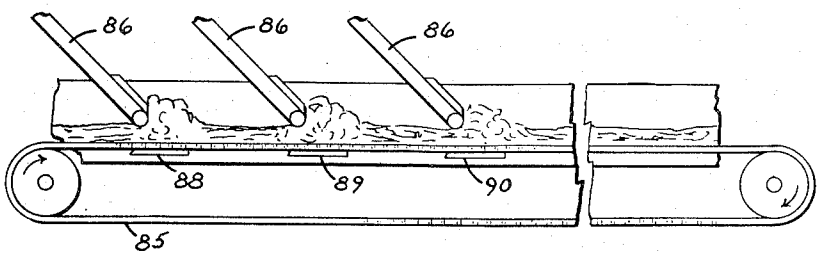


Fig. 8

United States Patent Office 2,773,375 Patented Dec. 11, 1956

2,773,375

FIBER WET-TREATING APPARATUS

Charles W. Cox, Decatur, Ala., assignor to American Viscose Corporation, Philadelphia, Pa., a corporation of Delaware

Application May 25, 1953, Serial No. 357,164

14 Claims. (Cl. 68—205)

This invention relates to apparatus for wet treating a blanket of unconnected, loose fibers in bulk which is particularly useful for introducing liquids into running blankets of fibers of the lengths found in natural fibers, such as cotton or wool, and the various types of synthetically produced staple fibers.

This application is a continuation-in-part of my prior application Serial No. 87,089, filed April 12, 1949, and issued on January 5, 1954, as U. S. Patent 2,665,189. That prior application discloses a method of wet treatment for blankets of unconnected fibers and also substantial parts of the apparatus as herein claimed.

Nearly all types of textile fiber of the lengths found in natural fiber and artifically produced staple are subjected to wet treatments at some stage or other in their preparation for incorporation into finished manufactured goods. It is preferable to accomplish such processing by continuous methods. For example, in the preparation of rayon staple fiber, a preferred system of treatment involves wet cutting a tow, comprising perhaps 100,000 or more filaments, into lengths which may vary in length in a range of 1 to 6 inches, and distributing the output of the cutter over the surface of a conveyor having a formaninous surface as a blanket of uniform depth. One type of conveyor preferred is a series of "walking rail" machines which are used to advance the blanket through a series of spray stations in which the blanket is showered with various treating liquids from overhead spray devices. Extending alongside the "walking rail" apparatus are upright sidewalls or baffles which prevent the liquid from draining laterally from the blanket. The liquid infiltrates or trickles through the blanket and drains away through the clearances between the rails. The blanket, as it passes through the various shower stations, tends to become more packed and less permeable as a result of the liquid sprayed thereupon. To compensate for the retarded rate of liquid penetration resulting from packing the fibrous material, it is necessary to adjust the length of the wet treatment zones so that sufficient area and time will be provided for the liquid to pass through the blanket. Moreover, as slight differences in the thickness and density between sections of the blanket produce substantial differences in the rate of passage of the treating liquid through those sections of the blanket, uniformly treated fiber is difficult to obtain.

It is an object of the present invention to provide an apparatus for wet treating a running blanket of unconnected fibers of textile length to obtain rapid passage of the treating fluid through the fiber and to substantially reduce the space and equipment needed to carry out the liquid treatment. It is another object to carry out a liquid treatment in which the treating liquid is more efficiently used and the fiber is subjected to more uniform treatment. Another object is to disperse the fiber during the treatment to produce finished staple fiber having a high degree of separation or "openness." It is still another object to increase the capacity of existing wet treating equipment. Other objects, features, and advantages will

be apparent from the following description of the invention and the drawings in which

Fig. 1 is a perspective view of a portion of the wet treating apparatus for fibrous blankets, with portions being broken away to better illustrate an embodiment of the invention, and a modification thereof;

Fig. 2 is a partial longitudinal vertical section through a portion of the structure shown in Fig. 1, illustrating one form of fluid distributor on an enlarged scale;

Fig. 3 is a section view taken approximately along line III—III of Fig. 2;

Fig. 3*a* is a shortened fragmental side view of a modified liquid distributor shown in Fig. 1.

Fig. 4 is a diagrammatic view illustrating the invention as used in a large scale wet treating apparatus;

Fig. 5 is a diagrammatic view of another embodiment of the invention utilizing a modified conveyor;

Fig. 6 is a fragmentary vertical section, on an enlarged scale, through a portion of the conveyor illustrated in Fig. 5;

Fig. 7 is a fragmentary top view of the conveyor shown in Figs. 5 and 6; and

Fig. 8 is a diagrammatic view of still another embodiment of the invention utilizing a belt-type conveyor.

Briefly, the invention comprises an apparatus for discharging a sheet or a large number of small streams of a treating liquid into a running blanket of loose or unconnected fiber of textile length transversely with respect to the movement of the blanket. The apparatus is arranged so that the liquid is discharged in a direction such that it meets the blanket at a vertical angle less than a right angle measured between the approaching paths of the liquid and the blanket. The blanket is carried on a liquid-permeable conveyor surface and the liquid is prevented from leaving the blanket laterally by any suitable means, such as upright walls or baffles extending along the edges of the conveyor surface.

In Fig. 1, a blanket **8** is shown supported on the rails **10** of a walking rail conveyor, with sidewalls or baffles **11** extending vertically along opposite sides of the conveyor to prevent the liquid from being discharged laterally from the blanket. Supported between the baffles **11** at each side are the liquid distributors **14** and **15**, each pivotably supported by axial members, such as the shafts **17** and **18** of the distributor **15**, on the top edges of the baffles **11** between the pegs **12**. The distributors **14** and **15** consist basically of conduits, such as the tubes **20** and **35** supported transversely over the running blanket **8**, which are apertured along a surface facing the blanket and which are supplied by suitable feed tubes **21** and **21***a*, respectively, connected with a reserve liquid supply reservoir (not shown). For example, in the distributor **15**, the feed tube **21** is connected in a T arrangement to a portion of the top wall of the tube **20**, as illustrated in Fig. 1. A supply line **22** is attached to the feed tube **21** at the union **25**. Extending from each end of the tube **20** are brackets **26** and **27** having axle members or trunnions **17** and **18** extending therefrom. A baffle **29** is secured to the liquid distribution tube **20** along its length, and corresponding to the width of the blanket **8**. The baffle **29** extends from the tube **20** to the region in which the liquid discharged from the tube **20** enters the leading edge of the blanket **8**. During operation of the apparatus, the baffle is supported at sufficient clearance with the conveyor rails **10** so that liquid and fibrous material of the blanket may pass under the baffle in the direction in which the blanket is advancing. The mixing of the liquid and the material of the blanket produces a suspension or slurry from which the liquid drains through the rails **10**. A mass or body of slurry of appreciable height is obtained immediately in advance of the distributor **15**, which would backwash into the stream of liquid discharged from

the distributor were it not for the baffle **29** acting as a supporting barrier. Such backwashing would interfere with the impact and penetration of the treating liquid being directed into the blanket. The angle of the distributor **15** with respect to the general plane of the upper surface of the blanket, or that of the conveyor surface upon which the blanket is supported, may be adjusted as desired by the threaded rod **30**, pivotably connected to the baffle **29** and longitudinally adjustable with respect to the cross bar **32** by means of the nut **33**.

The distributor **14** differs in construction from the distributor **15** in that its baffling means is disposed above the distributing tube rather than below, so that the rounded surface of the tube **35** may ride upon the surface of the blanket **8**, and the distributor may pivot freely upon its axles **34** and **36**. Baffles **38** and **39** may be attached, as shown, along the upper surfaces of the tube **35** and the side surfaces of a feed tube **21***a*. To the baffles **38** and **39** are secured support members **40** and **41**, respectively, each provided with holes **37** arranged in pairs to receive bolts **37***a* extending through the trunnions **34** and **36**. By bolting the axle elements **34** and **36** to the appropriate set of holes in the support members **40** and **41**, a tilt of the distributor **14** may be obtained which produces alignment of the liquid being discharged therefrom in a direction which results in a desired effect on the blanket. The distributor **15** may be supported by similar axle elements in conjunction with the adjustable threaded rod **30** to give a desired fixed tilt. Assuming that the angle of the tilt is that measured by the dihedral angle between the path or plane along which the liquid is discharged and the surface of the conveyor carrying the blanket toward said path, the distributors **14** and **15** may be adjusted readily within the range of 30 to 60 degrees. In normal operation, a distributor free to swing on pivotal support means, such as the distributor **14**, may be moved through a range of 5 to 10 degrees variation with the desired tilt.

As shown in Fig. 2, the distributor **14** is equipped with a changeable porous material filter **43** having an upper flanged portion **44** fitting within a recess of a standard pipe union **45** attached to the upper portion of the feed tube **21***a*. An interiorly-threaded rotatable union or element **48** is rotatably secured to a third union or element **47** by conventional overlapping flanges. The element **47** is secured in threaded relationship to the end of a supply line **49**. Element **48** is provided with handles **50** to facilitate detachment of the fluid distributor **14** from the supply line **49**.

Fig. 4 diagrammatically represents a series of "walking rail" conveyors **54**, **55**, **56**, **57**, and **58** which are used to concurrently convey a fibrous blanket **61** in a direction from left to right under a multiplicity of distributors **64**, such as heretofore described with respect to the previous figures. The distributors are disposed at a plurality of points spaced lengthwise of the path followed by the blanket of fibers over the conveyor and are arranged to receive and distribute a plurality of treating liquids at successive shower stations. The apparatus shown in Fig. 4 is illustrative of a portion of that used to treat viscose staple fiber produced by the wet cutting method in several successive wet treating stages. The staple fiber is washed or sluiced from a cutter (not shown) through a sluice **60** onto the conveyor **54**. In one commercial process the advancing blanket **61** is subjected by the various distributors, in the following order recited, to streams of recirculated water, fresh hot water, a desulfurizing solution containing sodium sulfide or the like, additional water, a bleach solution, water, and a soap solution. Squeeze rolls **68** are disposed along the path of the blanket at points where it is desired to express the liquid from the blanket to a greater degree than can be accomplished by the action of walking rail conveyors . For example, one of the squeeze rolls **68** may be positioned to squeeze the blanket after the sulfide or any other of the treatments before subjecting it to a washing treatment. Catch basins **66**, provided with pumps **67**, are positioned under the conveyor to receive the liquid that drains therethrough and the basins may be arranged, in any manner desired, to recirculate treating liquids. For example, treated water may be pumped from one basin to a distributor at a less advanced position along the blanket path for more efficient uses thereof.

The process just indicated with respect to viscose staple fiber is merely illustrative of the many uses to which the present invention may be applied in connection with the preparation of all types of synthetic staple and natural fibers. The fluid distributors may be used with any type of blanket conveyor having a sufficiently opened or foraminous surface to permit drainage of liquid. Such a liquid distributor system, as described, may be canted at small angles which do not appreciably interfere with the normal progress of the blanket. The fluid distributors may be held in a fixed position by adjustable means, such as the rod **30** which holds the distributor **15** in a fixed position, or they may be allowed to ride upon the surface of the blanket as it passes under them and be free to swing on pivotable supports, in the manner of the distributor **14** as shown in Fig. 1.

For example, in a conveyor 38 inches wide, two pieces of pipe may be formed into a **T** manifold, and the horizontal branch of the **T** may be provided with ⅛ inch holes having parallel axes spaced approximately 1¼ inches apart, although many other arrangements as to size and spacing of the holes are satisfactory. The distributor operates successfully when positioned so that the jets of fluid issuing from the holes discharge into the blanket along a plane or path extending at an angle of approximately 40 degrees with the surface of the conveyor supporting the blanket. With the distributor canted at such an angle, the fluid satisfactorily penetrates a depth of about five inches when supplied at a pressure of at least 30 pounds per square inch.

The fluid stream, as it penetrates the blanket, is deflected and its force is dissipated throughout the section of the blanket. The deflection may be accomplished entirely by collision of the sheet of liquid with the relatively dense unfluffed blanket portion continuously passing into the path of the liquid discharged from the distributor, or if the stream is sufficiently powerful, a portion of it may reach the surface of the conveyor. The pressure may be varied to produce any penetration desired. Preferably, the liquid sheet or portion thereof should not reach the conveyor surface with sufficient force to wash fibers through the openings of the surface and cause appreciable fiber loss. Generally, it will be desired to penetrate the blanket almost completely, with a preferable manner of operating the fluid distributor being to impart the fluid at such a velocity that its force becomes entirely dissipated as it reaches the lowest strata of the blanket.

The action of the liquid applied by the distributor is such that the portion of the blanket which is passed into the liquid stream takes the form of a liquid suspension of fibers of greatly increased volume in which the adjacent fibers are very effectively separated from each other in a preponderance of the liquid. In addition to thoroughly disintegrating any bunches or other compact masses of fibrous material that may have been contained in the blanket, the fibers are subjected to a very thorough and uniform liquid treatment. As the blanket is carried away from the distributor, the liquid rapidly drains out of the fluffed and "opened" blanket through the foraminations in the conveyor at a greater rate than is obtainable through the relatively compact blanket characteristic of conventional wet treatment processes.

Figs. 5 to 8 illustrate additional embodiments of the invention in which liquid distributors as hereinbefore described may be employed. Fig. 5 is a diagrammatic view illustrating an endless belt-type perforated conveyor **75** which may be used to transport a blanket **76** of uncon-

nected fibers, in the direction as indicated by the arrow, relative to a plurality of liquid distributors 77 in the general manner as hereinbefore described. The blanket is disintegrated under each distributor by the liquid issuing therefrom and then reformed by drainage of the liquid from the suspended fibers before it passes under the next distributor.

The conveyor 75 comprises a plurality of sections 78, each being hinged at 80 and 81 to adjacent sections 78 as illustrated in Figs. 6 and 7. Each section 78 is formed, as by drop-pressing between mating dies, to form a large number of tabs or elements 83 and 84 which incline upwardly and downwardly, respectively, from the general plane of the conveyor or section.

The opening between each pair of adjacent elements 83 and 84 constitutes a drainage aperture or perforation through the conveyor section. Each adjacent pair of elements, i. e., an upwardly-inclined element and the nearest downwardly-inclined element, may be considered as displaced portions of a section that was flat or plane before the formation of the elements. Such elements are preferably provided without subtraction of material from the section in which they are formed. If preferred, the sheet can be formed without the downwardly inclined tabs or elements 84, so long as the ends of the upwardly-inclined elements are disposed above the surrounding flat surface of the conveyor and incline in the direction of intended movement of the conveyor, and the forward component of the liquid path from the distributor.

The essential advantage of forming the conveyor 75 as described above, is that the liquid, discharged from the inclined distributor, strikes the conveyor surface at such an angle not aligned with the apertures between adjacent elements 83 and 84. This is true also if the conveyor is fabricated with only upwardly inclined elements. That is, the upwardly inclined elements, as they pass through the path of liquid issuing from the distributor, extend over respective apertures and shield the apertures from the direct passage of liquid from the distributor. To obtain this result, the conveyor is driven so that the conveyor movement and the free ends of the upwardly inclined elements 83 extend in the same direction. The upwardly-curved surfaces of the elements 83 promote a deflection of the liquid into the fiber blanket, and effectively prevent any liquid from being driven directly through the conveyor. Such a conveyor is supported by pulleys at each end thereof which are preferably polygonal, with each of the polygonal surfaces being the same length as that of the sections 78, so that the under surfaces of the section of the conveyor extending around the pulleys, conform substantially to the peripheries thereof.

Fig. 8 illustrates another embodiment of the invention wherein a blanket of loose fibers is carried on a conveyor 85, which comprises a perforated screen or belt of any liquid-permeable material. A plurality of liquid distributors 86 are supported immediately above the belt at an inclination with the plane of the conveyor as shown by the drawing and heretofore described in regard to Figs. 1–7. Supported immediately under, and preferably in engagement with the portion of the conveyor 85 on which the blanket is disposed, are non-permeable plates 88, 89, and 90. The important aspect of the disposition of these plates is that they are aligned under respective distributors to intersect with the path of the liquid discharged from the distributors. The upper surface of each plate is preferably flat and should extend far enough beyond the intersection of the path of the liquid and the plate, in the direction of conveyor advancement, to assure that liquid, which is only partly deflected by fibers, will also be deflected by the upper surface of the conveyor and the underlying plate portion.

The surfaces of the conveyor 85 are preferably, as smooth as the perforations therethrough will permit, so as to provide, at any particular blanket-disintegrating station therealong, an efficient liquid-deflecting surface, with the tendency to force liquid through the conveyor perforations disposed over the plates being minimized. In practice, any liquid penetrating the blanket and reaching the conveyor in appreciable volume forms a layer of the liquid adjacent the conveyor surface, in which layer the fibers are suspended and prevented from being forced into the conveyor apertures underlain by a deflection plate. A suspension of the liquid and fibers is formed on the conveyor immediately in advance in each distributor and above each of the deflector plates. This suspension, once carried beyond the deflector plates, may promptly pass through the perforations of the conveyor, leaving the fibers of the blanket in a natural highly-fluffed state of distribution as a result of the natural unforced drainage of the liquid therefrom.

As a consequence of utilizing high velocity treating liquid to fluff or open the blankets, the capacity of a given amount of conveyor area, assuming adequate permeability of the conveyor to liquids, is increased substantially when using fluid distributors of the type herein described instead of conventional shower devices; or stated otherwise, the washing or liquid treating of running fibrous blankets may be accomplished by the present invention in a portion of the space now allotted for the continuous wet treatment of blankets of comparable thickness and texture.

While preferred embodiments of the invention have been shown, it is to be understood that changes and variations may be made without departing from the spirit and scope of the invention as defined by the appended claims.

I claim:

1. An apparatus for treating a running blanket of fibrous material, said apparatus including a conveyor having a permeable surface on which said fibrous material is adapted to be disposed, means for discharging a narrow stream of liquid angularly toward said permeable surface, said liquid stream being of sufficient velocity to substantially penetrate and convert said fibrous blanket on said permeable surface into a liquid suspension of fibrous material, baffle means connected in juxtaposed relationship with said liquid discharge means, said baffle means being adapted to prevent backwashing of said liquid suspension of fibrous material, and means for supporting said baffle and liquid discharge means for movement as a unit relative to said conveyor.

2. An apparatus for treating a running blanket of fibrous material, said apparatus including a conveyor having a permeable surface on which said fibrous material is adapted to be disposed, means for discharging a narrow stream of liquid angularly toward said permeable surface, said liquid stream extending generally in the direction of travel of said conveyor and forming an angle ranging from 30 to 60 degrees with said permeable surface and being of sufficient velocity to substantially penetrate and convert said fibrous blanket on said permeable surface into a liquid suspension of fibrous material, baffle means connected in juxtaposed relationship with said liquid discharge means, said baffle means being adapted to prevent backwashing of said liquid suspension of fibrous material, means for supporting said baffle and liquid discharge means for movement as a unit relative to said conveyor, and means for preventing the flow of the liquid suspension of the fibrous material in a direction transversely of said conveyor.

3. An apparatus for treating a running blanket of fibrous material, said apparatus including a conveyor having a permeable surface on which said fibrous material is adapted to be disposed, means for discharging a narrow stream of liquid angularly toward said permeable surface, said liquid stream being of sufficient velocity to substantially penetrate and convert said fibrous blanket on said permeable surface into a liquid suspension of

fibrous material, baffle means connected in juxtaposed relationship with said liquid discharge means, said baffle means being adapted to prevent backwashing of said liquid suspension of fibrous material, pivot means for swingably supporting said baffle and liquid discharge means for movement as a unit relative to said conveyor, said pivot means allowing self-adjustment of said baffle and liquid discharge means in response to the thickness of the blanket of fibrous material.

4. A liquid distributor assembly for treating and disintegrating a running blanket of fibrous material, said assembly including an elongated perforated member, means for supplying liquid under pressure to said perforated member for discharge therefrom at high velocity and in the form of a narrow stream extending across the running blanket of fibrous material, baffle means connected in juxtaposed relationship with said member, said baffle means being adapted to prevent the backwashing of liquid and fiber into the stream of liquid discharging from said member, and means for swingably supporting said member and said baffle means for movement as a unit about an axis approximately parallel to said member.

5. An apparatus for treating a running blanket of fibrous material, said apparatus including a conveyor having a foraminous surface for supporting and continuously moving the blanket of fibrous material in one direction, a liquid distributor assembly, means for supporting said assembly for pivotal movement about an axis spaced above and extending transversely of said conveyor, said liquid distributor assembly including first means adapted to discharge liquid into the blanket of fibrous material with a sufficient velocity to facilitate disintegration thereof, and second means connected with said first means and adapted to serve as a baffle for preventing backwashing of that portion of the fibrous blanket disintegrated by the liquid discharged from said first means.

6. An apparatus for treating a running blanket of fibrous material, said apparatus including a conveyor having a foraminous surface for supporting and continuously moving the blanket of fibrous material in one direction, first means adapted to discharge a narrow stream of liquid into said running blanket, means for supplying liquid under pressure to said first means, second means connected in juxtaposed relationship with said first means and adapted to serve as a baffle for preventing backwashing of the running blanket treated by said first means, one of said first and second means having a portion thereof engaging with the running blanket, and means for swingably supporting said first and second means for movement as a unit about an axis spaced above and extending transversely across said conveyor.

7. A construction as defined in claim 6 wherein said first means engages with the running blanket and said first and second means are mounted for free swinging movement about said axis.

8. An apparatus for treating a running blanket of fibrous material, said apparatus including a conveyor having a foraminous surface for supporting and continuously moving the blanket of fibrous material in one direction, first means adapted to discharge a narrow stream of liquid into said running blanket, means for supplying liquid under pressure to said first means, said first means extending transversely of said conveyor and being inclined to the surface thereof, said inclination of said first means from said conveyor ranging from 30 to 60 degrees measured in the direction of movement of said conveyor, second means connected in juxtaposed relationship with said first means and adapted to serve as a baffle for preventing backwashing of the running blanket treated by said first means, one of said first and second means having a portion thereof engaging with the running blanket, and means for swingably supporting said first and second means for movement as a unit about an axis spaced above and extending transversely across said conveyor.

9. An apparatus for treating a running blanket of fibrous material, said apparatus including a conveyor having a foraminous surface for supporting and continuously moving the blanket of fibrous material in one direction, first means adapted to discharge a narrow stream of liquid into said running blanket, means for supplying a liquid under pressure to said first means, said first means extending transversely of said conveyor and being inclined to the surface thereof, said inclination of said first means from said conveyor ranging from 30 to 60 degrees measured in the direction of movement of said conveyor, second means connected in juxtaposed relationship with said first means and adapted to serve as a baffle for preventing backwashing of the running blanket treated by said first means, one of said first and second means having a portion thereof engaging with the running blanket, means for swingably supporting said first and second means for movement as a unit about an axis spaced above and extending transversely across said conveyor, and means positioned parallel to the edges of said conveyor for preventing liquid and fibrous material from flowing therefrom.

10. A construction as defined in claim 9 wherein said second means is inclined at approximately the same angle relative to said conveyor as said first means.

11. An apparatus for treating a running blanket of fibrous material, said apparatus including a conveyor having a foraminous surface for supporting and continuously moving the blanket of fibrous material in one direction, first means adapted to discharge a narrow stream of liquid into said running blanket, means for supplying liquid under pressure to said first means, second means connected in juxtaposed relationship with said first means and extending between said first means and said conveyor, said second means serving as a baffle for preventing backwashing of the running blanket treated by said first means, said second means having a portion thereof engaging with the running blanket and means for swingably supporting said first and second means for movement as a unit about an axis spaced above and extending transversely across said conveyor.

12. An apparatus for treating a running blanket of fibrous material, said apparatus including a conveyor having a foraminous surface for supporting and continuously moving the blanket of fibrous material in one direction, first means adapted to discharge a narrow stream of liquid into said running blanket, means for supplying liquid under pressure to said first means, said first means extending transversely of said conveyor and being inclined to the surface thereof, said inclination of said first means relative to said conveyor ranging from 30 to 60 degrees measured in the direction of movement of said conveyor, second means connected in juxtaposed relationship with said first means and adapted to serve as a baffle for preventing backwashing of the running blanket treated by said first means, one of said first and second means having a portion thereof engaging with the running blanket, means for swingably supporting said first and second means for movement as a unit about an axis spaced above and extending transversely across said conveyor, and means for adjustably varying the inclination of said first means.

13. An apparatus for treating a running blanket of fibrous material, said apparatus including a conveyor having a foraminous surface for supporting and continuously moving the blanket of fibrous material in one direction, said foraminous surface of said conveyor being formed of a plurality of struck-out tabs inclined upwardly in the direction of movement of said conveyor, first means adapted to discharge a narrow stream of liquid into said running blanket, means for supplying liquid under pressure to said first means, second means con-

nected in juxtaposed relationship with said first means and adapted to serve as a baffle for preventing backwashing of the running blanket treated by said first means, one of said first and second means having a portion thereof engaging with the running blanket and means for swingably supporting said first and second means for movement as a unit about an axis spaced above and extending transversely across said conveyor.

14. An apparatus for treating a running blanket of fibrous material, said apparatus including a conveyor having a foraminous surface for supporting and continuously moving the blanket of fibrous material in one direction, first means adapted to discharge a narrow stream of liquid into said running blanket, means for supplying liquid under pressure to said first means, a stationary flat deflecting plate positioned below a portion of said foraminous surface and in alignment with said first means, said plate serving to prevent liquid from passing through said

foraminous surface and to deflect such liquid into the running blanket, second means connected in juxtaposed relationship with said first means and adapted to serve as a baffle for preventing backwashing of the running blanket treated by said first means, one of said first and second means having a portion thereof engaging with the running blanket, means for swingably supporting said first and second means for movement as a unit about an axis spaced above and extending transversely across said conveyor and means for preventing the flow of the running blanket of fibrous material in a direction transversely of said foraminous surface.

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