

Title (en)  
Method and installation for the forming of an air-laid fiber web

Title (de)  
Verfahren und Einrichtung zum Formen eines luftgelegten Faservlieses

Title (fr)  
Procédé et installation pour la formation d'un voile fibreux par voie aérolitique

Publication  
**EP 0950733 A1 19991020 (FR)**

Application  
**EP 99490010 A 19990331**

Priority  
FR 9805050 A 19980417

Abstract (en)  
To produce a non woven fabric (V), the carded fibers are deposited on to a permeable conveyor belt (7a) by an air flow after they have been aligned (5). The fiber material is passed through a carding process (4) using a carding drum (4h) with a number of peripheral units (4e,4f) to separate and align the fibers in parallel. On leaving the carding drum (4h), the fibers are taken by the leading doffer cylinder (5a) at the carding drum (4h) surface with a rotation significantly slower than the carding drum, and in the opposite direction. The doffer cylinder has a clothing with the points aligned to the rear, against its direction of rotation. An Independent claim is included for an assembly with a carding stage (4), a conveyor (7a) at the air flow station (8), and a system to guide the air flow to project the carded fibers on to the conveyor. The fiber alignment station (5) gives a constant fiber flow to a final rotating cylinder (6) for delivery into the air stream. Preferred Features: The fiber alignment station (5) takes the fibers from the carding drum (4h) to gather them into a condensed web. The fiber alignment station (5) has at least a leading doffer cylinder (5a), and a second condensing cylinder (5b) at the circumference of the doffer (5a), rotating at a slower speed than the doffer and in the opposite direction and with a clothing where the points are aligned to the rear against its direction of rotation. Or the condensing cylinder (5b) rotates in the same direction as the doffer (5a), with a clothing where the points are aligned forwards against its direction of rotation. The delivery cylinder (6) is at the circumference of the condensing cylinder (5b), rotating at a higher or the same speed and in the same direction. Its clothing has points aligned forwards, in the direction of rotation. Or the delivery cylinder rotates at a high speed, and against the rotation of the condensing cylinder (5b), with clothing points aligned forwards in its direction of rotation. The assembly can have two fiber alignment stations (5), in parallel. With a single delivery cylinder (6), the second condensing cylinder (5b) is at its circumference. The air flow from the pneumatic unit (8) is directed towards the carding drum (4h) to assist in detaching the fibers from it. The delivery cylinder (6) has a rotary speed which is sufficient to detach the fibers from its surface by centrifugal forces.

Abstract (fr)  
On forme par voie aérolitique un voile fibreux (V) sur une surface de formation et de transport (7a), en dispersant et en projetant sur cette surface des fibres individualisées au moyen d'un flux d'air, et en on fait subir aux fibres une opération de cardage préalablement à leur introduction dans le flux d'air. Selon une caractéristique essentielle de l'invention, entre l'opération de cardage et l'introduction des fibres dans le flux d'air, on agit sur le débit de fibres au moyen d'un ou plusieurs systèmes régulateurs (5) en sorte de rendre ce débit de fibres plus régulier. Dans une variante préférée de réalisation, un système régulateur (5) comprend au moins un premier cylindre peigne (5a) qui est prévu pour être entraîné en rotation avec une vitesse circonférentielle strictement inférieure à celle du cylindre de cardage (4h) et dans un sens de rotation opposé à celui du cylindre de cardage (4h), et qui est revêtu sur sa périphérie d'une garniture dont les dents ou pointes sont orientées vers l'arrière, c'est-à-dire à l'opposé de son sens de rotation. <IMAGE>

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CPC (source: EP US)  
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• [XAY] DE 19535876 A1 19970403 - HOLLINGSWORTH GMBH [DE]  
• [YA] FR 1473987 A 19670324  
• [A] US 5517726 A 19960521 - BEIER SCOTT B [US]  
• [A] EP 0704561 A1 19960403 - THIBEAU & CIE SA A [FR]  
• [A] PATENT ABSTRACTS OF JAPAN vol. 16, no. 342 (C - 0966) 24 July 1992 (1992-07-24)  
• [A] PATENT ABSTRACTS OF JAPAN vol. 10, no. 310 (C - 379) 22 October 1986 (1986-10-22)

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