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UN CARRETE

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71. SOLICITANTE

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NEENAH. WISCONSIN. ESTADOS UNIDOS DE AMERICA

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 Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

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1 **SOLICITUD DE:**
☒ Patente de Invención. ☐ Patente de Modelo de Utilidad.
☐ Capítulo I. ☒ Capítulo II.

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6 **Título (54):** MÉTODO Y APARATO PARA TRANSPORTAR UNA HOJA DESDE UNA SECADORA A UN CARRETE

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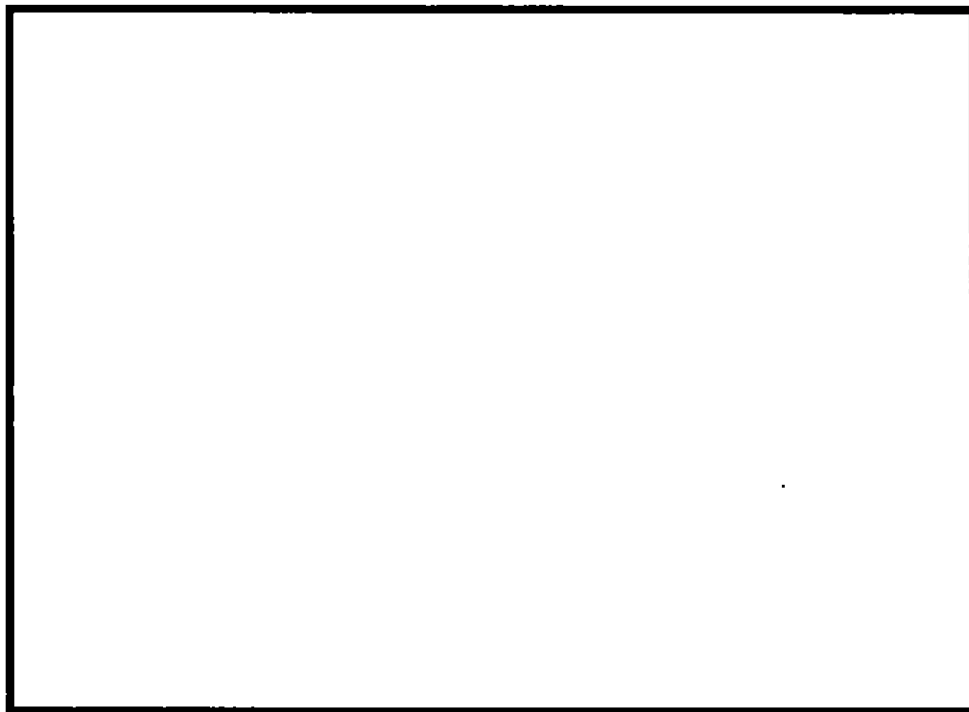
Instrucciones para el diligenciamiento del presente formulario, ver reverso de esta página.

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ANEXOS

- ☒ Comprobante de pago de la tasa de presentación de la solicitud. \$422.000
- ☐ Documento que acredite la existencia y representación legal cuando el solicitante sea persona jurídica.
- ☒ Poderes, si fuere el caso. Protocolo No. 17387
- ☒ Documento de cesión del inventor al solicitante o a su causante.
- ☐ Declaraciones
- ☒ Copia de la solicitud internacional. (Resumen, descripción, reivindicaciones, dibujos)
- ☒ Traducción de la solicitud internacional al castellano. (Resumen, descripción, reivindicaciones, dibujos)
- ☐ Copia del examen preliminar efectuado por la IPEA.
- ☐ Traducción del examen preliminar efectuado por la IPEA.
- ☐ De ser el caso, copia del contrato de acceso.
- ☐ De ser el caso, documento que acredite la licencia o autorización de uso de conocimientos tradicionales de las comunidades indígenas.
- ☐ De ser el caso, certificado de depósito del material biológico.
- ☐ Arte final 12x12.
- ☐ De ser el caso, información sobre otras solicitudes de patente o títulos obtenidos en el extranjero por el mismo titular o su causante, relacionadas parcial o totalmente con la invención de esta solicitud.
- ☒ Otros Tarjeta de Propietarios

11 FIGURA CARACTERÍSTICA:



12 Solicitante y representante

NOMBRE: PATROCIO CASTO DÍAZ

FIRMA:

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***** CONCEPTO *****

CANT. RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1 50005-01-01 SOLICITUDES	1 TRAMITES DE SOL. DE PATENTE DE IN	400,000.00
	TOTAL :	\$ 400,000.00

SON: CUATROCIENTOS MIL PESOS

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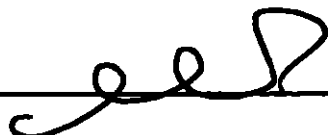
***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
BRIGARD & CASTRO LTDA	CONSIGNACION	BANCO POPULAR	050-00110-6	12688054	05/01/2004	29,049,000.00

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CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-09	OTROS SERVICIOS DE PROPIEDAD I	
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ESTA CERTIFICACION DE EXCEDENTE DE PAGO SOLO PODRA SER UTILIZADA
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1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

FOL. 5: TRANS. AREA

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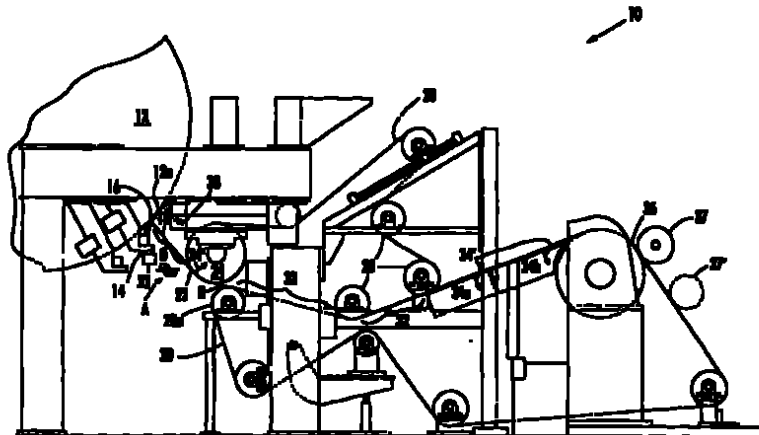
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(54) Title: METHOD AND APPARATUS FOR TRANSPORTING A SHEET FROM A DRYER TO A REEL



(57) Abstract: A system (10) and method for transferring a continuously advancing paper web from a dryer (12) to a reel section is provided. The system includes a first fabric (20) defining a first moving conveyor. The first fabric (20) may be a permeable fabric, which is positioned downstream from the dryer (12). A second fabric (30), which may also be permeable and defines a second moving conveyor (30), is also included. The first moving conveyor (20) overlaps the second moving conveyor (30) for a predetermined distance, and the first (20) and second (30) moving conveyors are configured to receive the paper web (18) between the conveyors. A vacuum device (24) is rotatably disposed against the first moving conveyor (20), and the dryer (12) and the vacuum device are disposed relative to each other to form an open draw. The vacuum device is configured to produce a vacuum to attract the web (18) to the first fabric (20) for transferring the advancing web into the predetermined distance where the first (20) and second (30) conveyors overlap.

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— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Title of the Invention

Method and Apparatus for Transporting a Sheet from a Dryer to a Reel

Background of the Invention

In the manufacture of paper or tissue products such as facial
5 tissues, bath tissues and paper towels, the base sheets are generally
produced by depositing an aqueous suspension of paper making fibers
onto a forming fabric, dewatering the suspension to form a web, drying
the web and winding the dried web into a roll for subsequent conversion
into a particular product. During manufacturing, most webs are adhered
10 to a steam heated Yankee dryer and thereafter dislodged from the
surface of the Yankee dryer by contact with a doctor blade (creping) prior
to winding to improve the softness and stretch of the sheet.

In some existing processes, the final sheet traverses an "open
draw" before being wound into rolls. Accordingly, the dried sheet is
15 momentarily unsupported before being wound. In the case of creped
tissue sheets, the sheet is dislodged from the creping cylinder and
passed unsupported from the creping cylinder to a reel. This is true for
both creped conventional (wet pressed) or creped through air dried
(TAD) sheets. In addition, it is envisioned that this process could be
20 utilized on a sheet that is not creped, similar to machine glazed (MG)
grades. As known in the tissue manufacturing business, these
unsupported runs or open draws are a source of sheet breaks and
production delay time. To compensate, the tissue paper sheets are

designed to have high strengths, particularly in the machine direction, in order to remain intact during manufacturing. However, high tissue strengths may negatively impact tissue softness, which is not desirable to the consumer.

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Summary of the Invention

The present invention provides a method and apparatus for transporting a sheet from a Yankee dryer, for example, to a reel, which advantageously leverages the open draw between the dryer and the reel. In so doing, tissue sheets having lower machine direction strength can
10 be made such that the tissue sheets are softer and more substantially square shaped in terms of the machine direction and cross machine direction tensile strengths.

According to an aspect of the invention, a system for transferring a continuously advancing paper web from a dryer to a reel section is
15 disclosed. The system has a first felt or fabric, which defines a first moving conveyor (herein, first fabric) and a second felt or fabric defining a second moving conveyor (herein, second fabric). The first fabric is positioned downstream from the dryer and may overlap the second fabric for a predetermined distance to receive the paper web between the
20 fabrics. Ideally, the fabrics are permeable fabrics, which may have the same – but more typically – disparate levels of permeability. Permeable fabrics contemplated by the invention generally exhibit air flow in the

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range of 50-700 cubic feet per minute (cfm) at 125 pascals pressure drop when the fabrics are new.

The system for transferring the web may also include a vacuum device rotatably disposed against the first fabric. The vacuum device
5 and the dryer may be arranged to form an open draw relative to each other. Optimally, the vacuum device is configured to produce a suction to attract the web to the first fabric for transferring the advancing web into the predetermined distance where the first and second fabric overlap. Further, a reel may be rotatably disposed against the second fabric. If
10 desired, the reel and the second fabric can cooperate to advance the web to a reel spool for winding.

Optimally, a vacuum box may be provided for holding the web against the second fabric. If provided, the vacuum box is disposed adjacent the second fabric. Alternatively, a blow box for holding the web
15 can be substituted for or supplement the vacuum box. Likewise, a static induction device can be used for holding the web in place on the fabrics.

According to another aspect of the invention, a system for transferring the advancing web from the dryer to the reel section can comprise a first felt conveyor or pick-up fabric conveyor configured to
20 receive the web from the dryer at a pick-up point on the first felt. A delivery or second felt conveyor ideally overlaps the first felt conveyor at an overlap area disposed apart from the pick-up point. The first and

second felt conveyors receive the web between the conveyors in the overlap area.

In this aspect, a lead-in roll is rotatably disposed against the first felt conveyor at a predetermined distance from the dryer such that a draw similar to that described above is formed between the dryer and the lead-in roll. The lead-in roll cooperates with the first felt conveyor to transfer the advancing web from the dryer in a direction toward the overlap area. Also, a reel is rotatably disposed against the second felt conveyor. The reel and the second felt conveyor cooperate to advance the web to a reel spool for winding the web.

The system may include a lead-in vacuum box located near the lead-in roll. In this case, the lead-in roll is disposed substantially between the dryer and the lead-in vacuum box, and the lead-in vacuum box suctions the web to the first felt conveyor as the first felt conveyor passes over the lead-in roll. If desired, an air scoop may be disposed substantially between the dryer and the lead-in roll to deflect an air mass from the dryer in a direction substantially toward the first felt conveyor. Additionally, a second vacuum box can be provided adjacent the second felt conveyor in the vicinity of the reel in a direction away from the lead-in roll.

According to another aspect of the invention, a method is disclosed for transporting the web from the dryer to the reel section. The

method may include the steps of continuously advancing the web from the dryer to a first fabric belt. The first fabric belt may be arranged to run across a device located near the dryer for picking up the web. The method may include the substeps of receiving the web on the first fabric belt by the pick-up device, advancing the web on the first fabric belt in the direction of a reel drum, guiding the web between the first fabric belt and a second fabric belt, threading a continuously advancing leading end portion of the web from the second fabric belt onto a reel spool adjacent the reel drum and continuously winding the threaded web into a parent roll from the reel spool. If desired the method may also include the steps of guiding the first fabric belt and the second fabric belt around at least one shear-inducing element while the web is positioned between the belts. Ideally, the first and second belts should be sufficiently wrapped around the at least one shear-inducing element to create shear forces to act upon the web and increase the softness of the web.

Brief Description of the Drawings

The above and other aspects and advantages of the present invention are apparent from the detailed description below in combination with the drawings in which:

Fig. 1 is a schematic diagram of an aspect of the invention illustrating an open draw between a dryer and a lead-in roll;

Fig. 2 is a schematic diagram of an alternative aspect of the invention;

Fig. 3 is a front view of an optional grooved lead-in roll taken along line III-III in Fig. 2; and

5 Fig. 4 is a schematic diagram of another alternative aspect of the invention.

Repeat use of reference characters in the present specification and drawings is intended to represent the same or analogous features or elements of the present invention.

10 **Detailed Description of The Drawings**

Detailed reference will now be made to the drawings in which examples embodying the present invention are shown. The drawings and detailed description provide a full and detailed written description of the invention, and of the manner and process of making and using it, so as to enable one skilled in the pertinent art to make and use it, as well as the best mode of carrying out the invention. However, the examples set forth in the drawings and detailed description are provided by way of explanation of the invention and are not meant as limitations of the invention. The present invention thus includes any modifications and variations of the following examples as come within the scope of the appended claims and their equivalents.

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As broadly embodied in the Figures, a system for transferring a continuously advancing paper web from a dryer to a reel section is provided. In general, a transfer system 10 is shown with a dryer, for example, a Yankee dryer 12, a creping station or doctor 14, a first fabric 20 (alternatively a first felt conveyor, first fabric belt or pick-up fabric conveyor), a second fabric 30 (alternatively second felt conveyor, delivery conveyor, second fabric felt) and a reel 36 or drum 36.

While Figures 1 and 2 illustrate system 10 having a plurality of conveyor rolls 28, vacuum boxes 34a, 34b and at least two belts 20, 30, it should be understood that the following descriptions of the example embodiments are not intended to limit the present invention to use only in such pre-assembled arrangements nor are all of the foregoing elements required and other elements may be added as required. Accordingly, the present invention is suitable for use with various types of systems for transferring a paper web from a web drying system (e.g., through-air dried, flat or Yankee dryer) to various types of reel sections.

Further, it is to be noted that first fabric 20 and second fabric 30 may be permeable fabrics having the same permeability; more likely, however, first fabric 20 and second fabric 30 have different permeabilities. Also, the permeabilities of the fabrics 20, 30 may change during operation of system 10 due to repeated web W contact with

fabrics 20, 30, which deposits and imbeds dust and debris on the fabrics 20,30.

With more particular reference to the Figures, the Yankee dryer 12 is shown in Fig. 1 delivering the web 18 to the creping station 14 and across a draw D to a vacuum roll 24. In an optimal arrangement, the first fabric belt 20 is located adjacent the second fabric belt 30 such that the first fabric belt 20 picks up the web 18 at a pick-up point 22 and delivers the web 18 in the direction of the second fabric belt 30. The web 18 continues in a direction of the reel 36 first through an overlap area 32 disposed between first fabric 20 and second fabric 30, both of which may be a screen, a fabric or the like. The web 18 continues in the direction of the optional vacuum box(es) 34a, 34b and across reel 36 until it is wound onto a reel spool 37. Reel spool 37 may be a spool, a spool with a core, or a coreless system around which a web 18 winds. It is also contemplated that reel spool 37 may be arranged elsewhere on system 10, such as in a position of reel spool 37', as required.

Fig. 1 further shows an aspect of the invention in which first fabric 20 defines a first moving conveyor. The first fabric 20 is positioned downstream from the dryer 12 and is configured to pick-up and move the web 18 towards the second fabric 30 as the web 18 leaves the creping station 14. The optional creping station or doctor 14 separates and deflects the web 18 from the dryer 12 to the first fabric 20. For instance,



Fig. 1 and 2 illustrate that a transfer plenum 16 may doctor off the web 18 from a surface of the dryer 12 by the transfer plenum 16 riding close to a dryer surface 12a. The doctor 14/transfer plenum 16 are optimally designed to divert and control boundary layer air to promote a smooth tissue or web 18 transition to the first fabric 20.

The second fabric 30 defines a second moving conveyor. The second moving conveyor 30 is overlapped by the first moving conveyor 20 as shown in Fig. 1 for a predetermined distance 32. The overlap area 32 ideally extends partially along both conveyors 20, 30 as shown in Figs. 1 and 2 but theoretically could run from substantially near the pick-up point 22 to the reel 36. Optimally, distance 32 need only be of sufficient length to ensure web 18 is securely positioned on second moving conveyor 30. Accordingly, the first and second moving conveyors 20, 30 in Fig. 1 receive the paper web 18 between the conveyors 20, 30 which extend together toward reel 36 to hold the web 18 in place for transfer to reel 36.

In the foregoing example, vacuum device 24 may again be rotatably disposed against the first moving conveyor 20. The dryer 12 and the vacuum device 24 are then disposed relative to each other to form open draw D. The vacuum device 24 is configured to produce a suction force or vacuum, indicated by arrow 24', to attract the web 18 to the first fabric 20 for transferring the advancing web 18 into the

predetermined distance 32 where the first and second conveyors 20, 30 overlap. If desired, a roll 28a and vacuum device 24 may be arranged to form a nip N into which the web 18 is received after the draw D.

5 The draw D of system 10 may have a length of between 4 inches to about 48 inches. Optimally, the open draw D defines a distance of between 10 inches to about 30 inches. The inventors have found that a draw D of approximately one foot advantageously accommodates various elements of system 10 while optimizing web 18 transfer from the creping station 14 to the first fabric 20 with fewer web 18 breaks.

10 As shown in Figure 1, once the web 18 reaches the vicinity of reel 36, web 18 can be held against the second moving conveyor 30 by vacuum boxes 34a, 34b, which operate to maintain a suction, indicated by arrow 34', on the lightweight web 18 to hold it securely against the conveyor 30 until it is wound onto the reel spool. By way of example,
15 vacuum boxes 34a, 34b may be configured to operate at a modest vacuum level of between 0.1" H₂O to about 3.0" H₂O. Alternatively, or also, a blow box 134 or a static induction device 234 (discussed in Fig. 2 below) may be provided in lieu of or in addition to vacuum box 34 to reduce or prevent fly-up of outside edges of web 18, since web 18 may
20 be a tissue product having a basis weight of about 2 grams per square meter (gsm) to about 65 gsm, or about 25 pounds per ream.

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Fig. 2 illustrates another aspect of the invention in which a lead-in roll 124 is rotatably disposed against the first felt conveyor 20 a predetermined distance from the dryer 12 such that draw D is formed between the dryer 12 and the lead-in roll 124. The lead-in roll 124 cooperates with the first felt conveyor 20 to transfer the advancing web 18 from the dryer 12 in a direction toward the overlap area 32. If desired, the lead-in roll 124 may have at least one circumferential groove 25 as shown in Fig. 3 to help control boundary layer air in order to assist in the pick-up of web 18 and to hold web 18 on first felt conveyor 20 until web 18 reaches overlap area 32.

With more specific reference to the foregoing aspect, roll 124 with circumferential grooves 25 (Fig. 3) cooperates with the conveyor 20 to thread web 18 from the dryer 12 across draw D to first conveyor 20. In this aspect, tissue or web 18 can be doctored off dryer 12 and drawn by gravity at known web speeds or blown onto conveyor 20, which supports and carries the web 18 to the overlap area 32. Optionally, an air plenum 33 (Fig. 1) may be provided to blow air A in the direction of the felt conveyors 20 and 30 to help to ensure the transfer of web 18 across the draw D to conveyor 20 and towards conveyor 30.

If desired, a lead-in vacuum box 26 may be disposed adjacent the lead-in roll 124 as seen in Fig. 2. In this example, the lead-in roll 124 is thus disposed substantially between the dryer 12 and the lead-in vacuum

box 26. The lead-in vacuum box 26 may be configured to attract the web 18 by suction force to the first felt conveyor 20 as the first felt conveyor 20 passes over the lead-in roll 124. As suggested, box 26 may also be a static induction device or any combination of web attraction devices to
5 attract web 18 to lead-in roll 124 toward overlap area 32.

The exemplary embodiment of Fig. 2 can include one or more web attraction devices, such as vacuum box 34, blow box 134, or static induction device 234, as alluded to in the foregoing embodiment. By way of specific example, the vacuum box 34 is configured to help to maintain
10 the lightweight web 18 against second conveyor 30 until web 18 reaches the reel spool 37 for wind-up.

If desired, vacuum box 34 may include blow box edges (not shown) or be otherwise configured to blow air substantially perpendicular to a direction of movement of the conveyor 30 to create venturi effects
15 (to cause a drop in pressure) in the vicinity of conveyor 30 and assist in holding web 18 against the conveyor 30. Alternatively, web 18 may be held in place by a static induction device 234 in lieu of or in addition to vacuum box 34. The vacuum box 34 may also have replaceable plastic wear edges (not shown) to reduce wear on the fabric 20. With this
20 option, plastic (or other suitable material) wear edges can be easily replaced instead of necessitating replacement of conveyor belts 20 due to frequent, rapid contact with edges of the boxes 34.

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It should be understood that the number and placement of boxes 34, 134, 234 are not limited to the examples delineated above nor as shown in the Figures. For instance, the web attraction devices can be placed at any point along the pick-up conveyor 20 and/or delivery conveyor 30.

System 10 may further include an air scoop 38 disposed substantially between the dryer 12 and the lead-in roll 124. The air scoop 38 is configured to deflect an air mass (not shown) from a rotation of the dryer 12 in a direction substantially toward the first felt conveyor 20 to further assist in controlled transfer of web 18 to conveyor 20.

In another aspect of the invention, at least one shear-inducing element 128 may be disposed as seen for example in Fig 2. In this illustration, at least one of the first and second felt conveyors 20, 30 is sufficiently wrapped around the at least one shear-inducing element 128 to create shear forces that act upon the web 18 and increase the softness of the web 18. This S-wrap configuration may be located at any desired point along conveyors 20, 30 and may include a plurality of such configurations if required.

Fig. 2 also illustrates another aspect of system 10, which may include at least one device, such as exemplary devices 40 a, b, to apply topical agents to the conveyors 20, 30 to coat the web 18. Although two devices 40 a, b are shown, a plurality of such devices may be disposed

at various other locations in system 20. Further, additional devices as well as devices 40 a, b may be configured to each apply distinct topical agents as desired.

Fig. 4 illustrates a further aspect of the present invention in which
5 a system 110 for transferring and reeling a continuously advancing tissue web 18 from dryer 12 to a reel drum 36a until it is wound onto a reel spool 37a. A second reel drum 36b may be used in combination with reel drum 36a to assist in winding a parent roll 48. The system 110 may have only one conveyor 20, which is positioned downstream from
10 the dryer 12 such that draw D is formed between the conveyor 20 and the dryer 12 in an arrangement similar to the foregoing embodiments. Accordingly, the conveyor 20 is configured to continuously receive the web 18 across the draw D and continuously advance the web 18, in contact with a bottom side 20a of conveyor 20 in the direction of the reel
15 drum 36a located within a conveyor loop formed by conveyor 20.

According to another aspect of the invention, a method is disclosed for transporting the web 18 from the dryer 12 to the reel section 36 comprising the step of continuously advancing the web 18 from the dryer 12 to the first fabric belt 20. The first fabric belt 20 may be
20 permeable and is optimally arranged proximate the dryer 12 for picking up the web 18 as described above. Further steps may include receiving the web 18 on the first fabric belt 20 by the pick-up point 22, advancing

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the web 18 on the first fabric belt 20 in the direction of a reel drum 36, guiding the web 18 between the first fabric belt 20 and a permeable second fabric belt 30, threading a continuously advancing leading end portion (not shown) of the web 18 from the second fabric belt 30 onto a
5 reel spool 37 adjacent the reel drum 36, and continuously winding the threaded web 18 into a parent roll (not shown) from the reel spool 37.

The method may also include the steps of guiding the first fabric belt 20 and the second fabric belt 30 around the at least one shear-inducing element 128 while the web 18 is positioned between the belts
10 20, 30. In this example, the first and second belts 20, 30 should be sufficiently wrapped around the at least one shear-inducing element 128 so as to create shear forces that act upon the web 18 to increase the softness of the web 18 as desired by the consumer.

It will be apparent to those skilled in the art that various
15 modifications and variations can be made in the present invention without departing from the scope and spirit of the invention. For example, specific shapes, quantities, and arrangements of various elements of the illustrated embodiments may be altered to suit particular applications. It is intended that the present invention include such
20 modifications and variations as come within the scope of the appended claims and their equivalents.

That which is claimed is:

1. A system for transferring a continuously advancing paper web from a dryer to a reel section comprising:

5 a first fabric defining a first moving conveyor, the first fabric being positioned downstream from the dryer;

a second fabric defining a second moving conveyor, the first moving conveyor overlapping the second moving conveyor for a predetermined distance, the first and second moving conveyors being configured to receive the paper web between the conveyors; and

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a vacuum device rotatably disposed against the first moving conveyor, the dryer and the vacuum device disposed relative to each other to form an open draw therebetween, the vacuum device configured to produce a suction to attract the web to the first fabric for transferring the advancing web into the predetermined distance where the first and second conveyors overlap.

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2. The system of Claim 1, wherein the open draw defines a distance of between 4 inches to about 48 inches.

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3. The system of Claim 1, wherein the open draw defines a distance of between 10 inches to about 30 inches.



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4. The system of Claim 1, further comprising holding means for holding the web against the second moving conveyor.

5. The system of Claim 4, wherein the holding means for holding the web is a vacuum box.

5 6. The system of Claim 5, wherein the vacuum box is configured to produce a vacuum pressure of between 0.1 inches of water to about 3.0 inches of water.

7. The system of Claim 4, wherein the holding means for holding the web is a blow box.

10 8. The system of Claim 4, wherein the holding means for holding the web is a static induction device.

9. The system of Claim 1, further comprising a creping station, the creping station configured to separate and deflect the web from the dryer to the first fabric.

15 10. A system for transferring an advancing web from a dryer to a reel section comprising:

a first felt conveyor configured to receive the web from the dryer at a pick-up point on the first felt conveyor;

20 a second felt conveyor overlapping the first felt conveyor at an overlap area disposed apart from the pick-up point, the first and second felt conveyors being configured to receive the web between the conveyors proximate the overlap area; and

a lead-in roll rotatably disposed against the first felt conveyor a predetermined distance from the dryer such that a draw is formed between the dryer and the lead-in roll, the lead-in roll cooperative with the first felt conveyor such that the advancing web is transferred from the dryer in a direction toward the overlap area.

11. The system of Claim 10, where in the lead-in roll has at least one groove.

12. The system as in Claim 10, further comprising a lead-in vacuum box disposed adjacent the lead-in roll, the lead-in roll disposed substantially between the dryer and the lead-in vacuum box, the lead-in vacuum box configured to suctionally attract the web to the first felt conveyor as the first felt conveyor passes over the lead-in roll.

13. The system as in Claim 10, further comprising an air scoop disposed substantially between the dryer and the lead-in roll, the air scoop configured to deflect an air mass from the dryer in a direction substantially toward the first felt conveyor.

14. The system as in Claim 10, further comprising a second vacuum box disposed adjacent the second felt conveyor proximate a reel in a direction away from the lead-in roll, the reel rotatably disposed against the second felt conveyor, the reel and

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the second felt conveyor cooperating to advance the web to a reel spool for winding the web.

15. A system for transporting an advancing paper web comprising:

5 a pick-up fabric conveyor configured to receive and transport the web across an open draw between a dryer and the pick-up fabric conveyor;

a delivery conveyor disposed in partial moving engagement with the pick-up fabric conveyor along a length of each of the
10 delivery and pick-up fabric conveyors, the delivery and pick-up fabric conveyors being configured to receive the web between the conveyors; and

transferring means for transferring the web from the draw to the pick-up fabric conveyor, the transferring means disposed
15 against the pick-up fabric conveyor and at least partially between the dryer and the delivery conveyor, the transferring means cooperative with the pick-up fabric conveyor for transferring the advancing web from the pick-up fabric conveyor to between the conveyors in the direction of a reel assembly.

20 16. A method for transporting a web from a dryer to a reel section comprising the steps of:

continuously advancing the web from the dryer to a first fabric belt, the first fabric belt arranged to run across pick-up means disposed proximate the dryer for picking up the web; receiving the web on the first fabric belt by the pick-up means;

advancing the web on the first fabric belt in a direction of a downstream reel spool;

guiding the web between the first fabric belt and a second fabric belt;

threading a continuously advancing leading end portion of the web from the second fabric belt onto the reel spool adjacent a reel drum; and

continuously winding the threaded web into a parent roll on the reel spool.

17. The method of Claim 16, further comprising the step of continuously creping the web as the web advances from the dryer to the first fabric belt.

18. The method of Claim 16, wherein the web is a tissue product having a basis weight of between about 2 grams per square meter (gsm) to about 65 gsm.

19. A system for transferring a continuously advancing tissue web from a dryer to a reel section comprising:

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a first permeable conveyor positioned downstream from the dryer, the first permeable conveyor configured to continuously move the web;

5 a second permeable conveyor configured to continuously move the web, the first permeable conveyor overlapping the second permeable conveyor for a predetermined distance, the first and second permeable conveyors being configured to receive the tissue web between the conveyors; and

10 a web attraction device disposed proximate the first permeable conveyor and further disposed relative to the dryer to form an open draw therebetween, the web attraction device configured to attract the web to the first permeable conveyor for transferring the advancing web into the predetermined distance where the first and second permeable conveyors overlap.

15 20. The system of Claim 19, further comprising means for coating the web.

21. The system of Claim 20, wherein the means for coating is at least one of the first and second permeable conveyors, the at least one of the first and second permeable conveyors configured to add a topical agent to the web.

20

22. A system for transferring and reeling a continuously advancing tissue web from a dryer to a reel section comprising a

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conveyor positioned downstream from the dryer such that an open draw is formed between the conveyor and the dryer, the conveyor configured to continuously receive the web across the draw and continuously advance the web along a bottom side of the conveyor in a direction of a reel drum located within a conveyor loop.

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23. The system of claim 22, further comprising a pick-up device disposed proximate the draw and the conveyor, the pick-up device configured to attract the web to the conveyor for transferring the advancing web to the reel section.

10

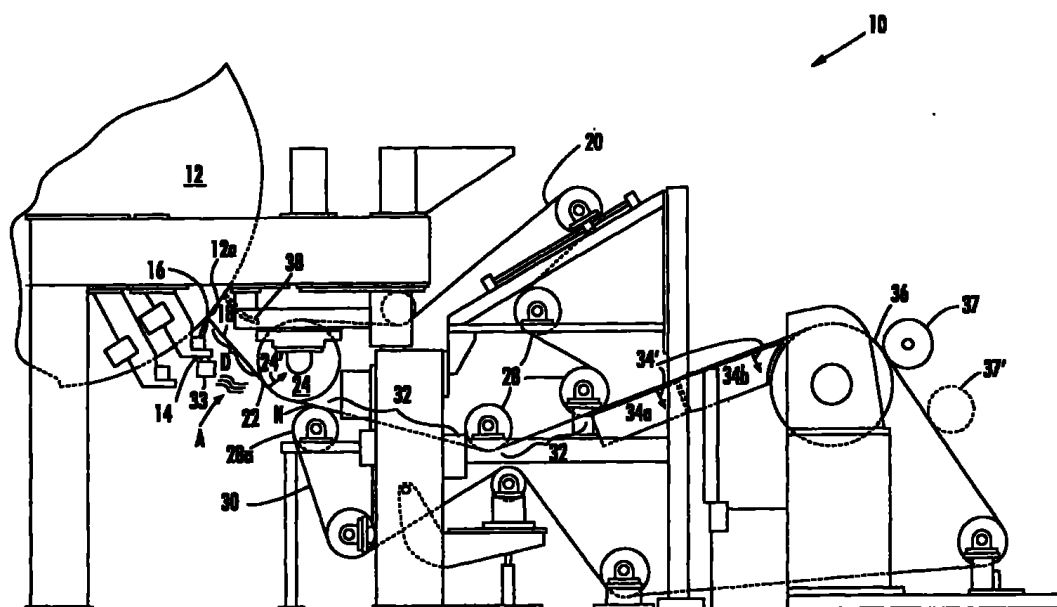


FIG. 1

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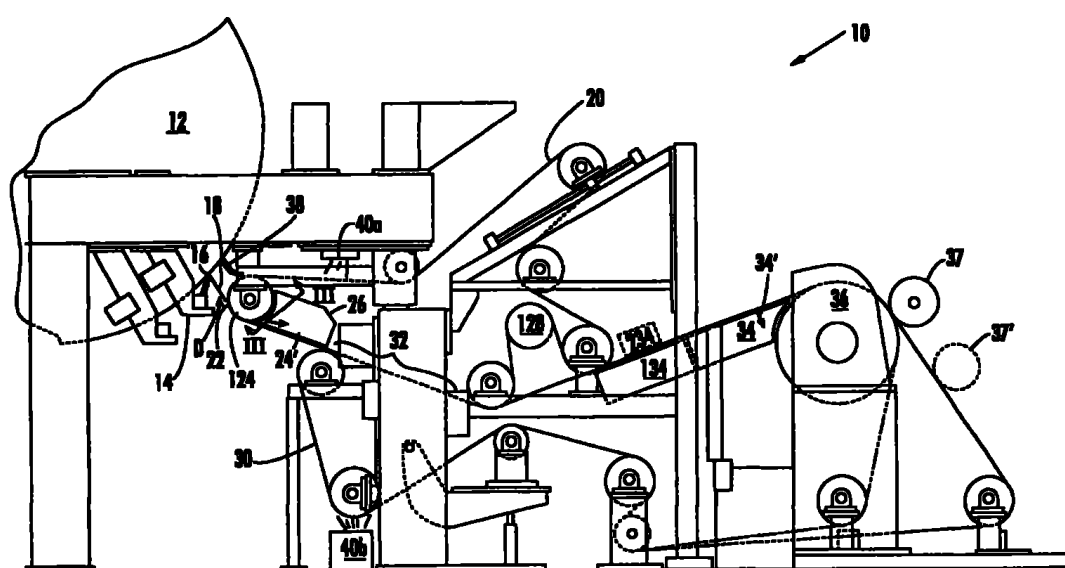


FIG. 2

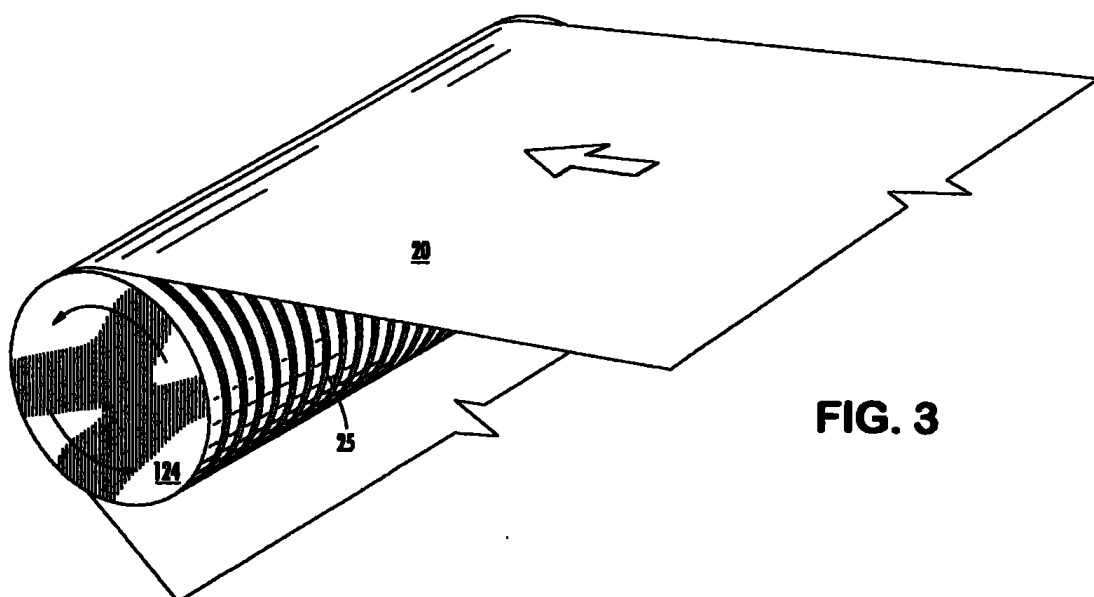
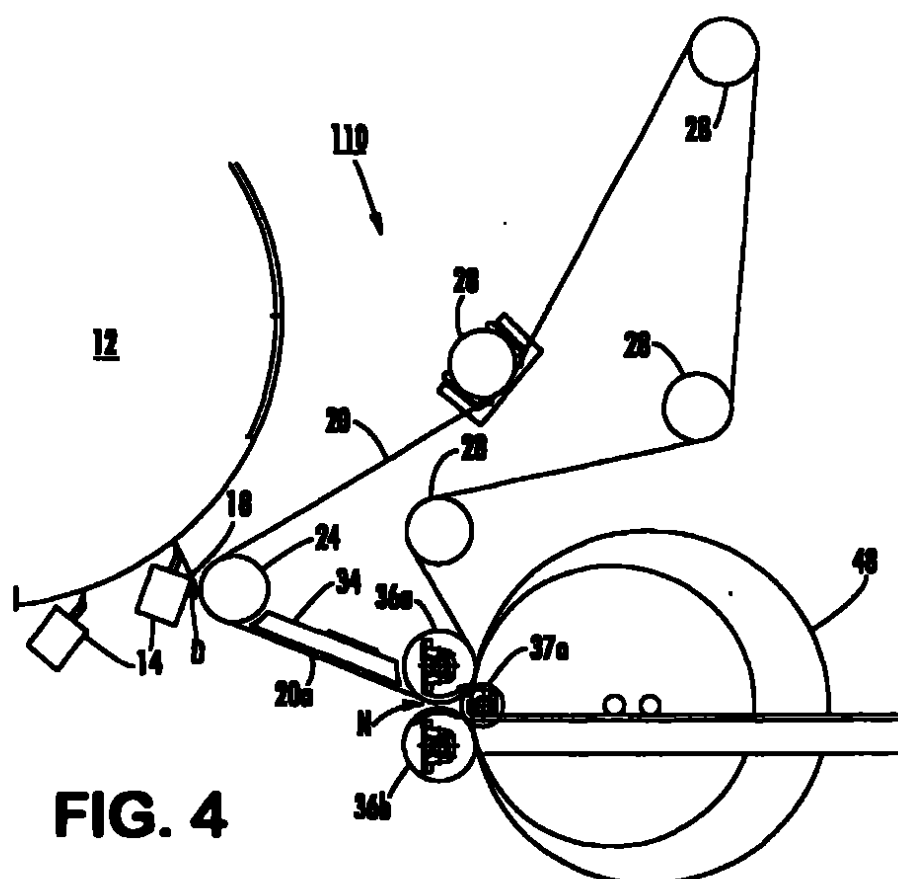


FIG. 3



INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 02/37661

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 02169/00 065H20/06

According to International Patent Classification (IPC) or to both regional classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 0216 065H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data bases consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 037 509 A (WEDEL GREGORY L) 6 August 1991 (1991-08-06) column 6, line 45 -column 10, line 59; figures ---	1-3, 9-12, 15-19
A	US 4 726 502 A (CRYDERMAN GARY G) 23 February 1988 (1988-02-23) the whole document ---	1,10,15, 16,19,22
A	EP 0 886 005 A (CASPAR ROMAN C) 23 December 1998 (1998-12-23) column 4, line 31 -column 7, line 39; figures -----	1,10,15, 16,19,22

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

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"D" document relating to an oral disclosure, use, exhibition or other means

"E" document published prior to the international filing date but later than the priority date claimed

"F" later documents published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"G" documents of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken into account

"H" documents of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is considered with any or more other such documents, such combination being obvious to a person skilled in the art.

"I" documents relevant to the same patent family

Date of the actual completion of the international search

18 March 2003

Date of mailing of the international search report

19.03.03

Name and mailing address of the ISA

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Authorized officer

Haaken, W

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 82/37661

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 8.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1 - 8.

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-8

A system for transferring a continuously advancing paper from a dryer to a reel section comprising:

a first fabric defining a first moving conveyor, the first fabric being positioned downstream from the dryer;

a second fabric defining a second conveyor, the first moving conveyor overlapping the second moving conveyor for a predetermined distance, the first and second moving conveyors being configured to receive the paper web between the conveyors;and

a vacuum device rotatably disposed against the first moving conveyor, the dryer and the vacuum device disposed relative to each other to form an open draw therebetween, the vacuum device configured to produce a suction to attract the web to the first fabric for transferring the advancing web into the predetermined distance where the first and second conveyors overlap,

further comprising holding means for holding the web against the second moving conveyor.

2. Claims: 12,13

A system for transferring an advancing web from a dryer to a reel section comprising:

a first felt configured to receive the web from the dryer at a pick-up point on the first felt conveyor;

a second felt conveyor overlapping the first felt conveyor at an overlap area disposed apart from a pick-up point, the first and second felt conveyors being configured to receive the web between the conveyors proximate the overlap area; and a lead-in roll rotatably disposed against the first felt conveyor a predetermined distance from the dryer such that a draw is formed between the dryer and the lead-in roll, the lead-in roll cooperative with the first felt conveyor such that the advancing web is transferred from the dryer toward the overlap area,

the system further comprising a lead-in vacuum box disposed adjacent the lead-in roll, the lead-in roll disposed substantially between the dryer and the lead-in vacuum box, the lead-in vacuum box configured to suctionally attract the web to the first felt conveyor passes over the lead in roll

and/or

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

the system further comprising an air scoop disposed substantially between the dryer and the lead-in roll, the air scoop configured to deflect an air mass from the dryer in a direction substantially towards the first felt conveyor.

3. Claims: 14, 21-23

A system for transferring an advancing web from a dryer to a reel section comprising:

a first felt configured to receive the web from the dryer at a pick-up point on the first felt conveyor;

a second felt conveyor overlapping the first felt conveyor at an overlap area disposed apart from a pick-up point, the first and second felt conveyors being configured to receive the web between the conveyors proximate the overlap area; and a lead-in roll rotatably disposed against the first felt conveyor a predetermined distance from the dryer such that a draw is formed between the dryer and the lead-in roll, the lead-in roll cooperative with the first felt conveyor such that the advancing web is transferred from the dryer toward the overlap area,

the system further comprising a second vacuum box disposed adjacent the second felt conveyor proximate a reel direction away from the lead-in roll, the reel rotatably disposed against the second felt conveyor, the reel and the second felt conveyor cooperating to advance the web to reel spool for winding,

and/or

A system for transferring a continuously advancing tissue web from a dryer to a reel section comprising:

a first permeable conveyor positioned downstream from the dryer, the first permeable conveyor configured to continuously move the web;

a second permeable conveyor configured to continuously move the web, the first permeable conveyor overlapping the second permeable conveyor for a predetermined distance, the first and second permeable conveyors being configured to receive the tissue web between the conveyors; and

a web attraction device disposed relative to the dryer to form an open draw therebetween, the web attraction device configured to attract the web to the first permeable conveyor for transferring the advancing web into the predetermined distance where the first and second permeable conveyors overlap,

FURTHER INFORMATION CONTINUED FROM PCT/BA/ 218

further comprising means for coating the web,

and/or

a system for transferring and reeling a continuously advancing tissue web from a dryer to a reel section comprising a conveyor positioned downstream from the dryer such that an open draw is formed between the conveyor and the dryer, the conveyor configured to continuously receive the web across the draw and continuously advance the web along a bottom side of the conveyor in a direction of a reel drum located within a conveyor loop.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 02/37661

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5037509	A	06-08-1991	CA 2043925 A1	30-04-1992
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			EP 0886005 A2	23-12-1998
			US 6022452 A	08-02-2000

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(30) Fecha de Prioridad: 10/025.205
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Declaraciones bajo la Regla 4.17:

respecto al derecho del solicitante para solicitar y que se le conceda una patente (Regla 4.17 (II)) para todas las designaciones.

respecto al derecho del solicitante a reivindicar prioridad de la solicitud más temprana (Regla 4.17 (III)) para todas las designaciones

Publicado:

— con el informe de búsqueda.

Para los códigos de dos letras y otras abreviaturas, referirse a las "Notas de Guía sobre Códigos y Abreviaturas" que aparece al comienzo de cada emisión regular de la Gaceta del PCT.

(54) Título: METODO Y APARATO PARA TRANSPORTAR UNA HOJA DESDE UNA SECADORA HASTA UN CARRETE

(57) Resumen: Se proporciona un sistema (10) y un método para transferir un sustrato de papel que avanza continuamente desde un secador (12) a una sección de carrete. La primera tela (20) puede ser una tela permeable, la cual está posicionada corriente abajo del secador (12). También se incluye una segunda tela (30), la cual también puede ser permeable y define un segundo transportador en movimiento (30). El primer transportador en movimiento (20) se superpone al segundo transportador en movimiento (30) por una distancia predeterminada, y el primer (20) y segundo (30) transportador en movimiento están configurados para recibir el sustrato de papel (18) en medio de los transportadores. Un dispositivo de vacío (24) está dispuesto rotativamente contra el primer transportador (20) en movimiento, y el secador (12) y el dispositivo de vacío están dispuestos en relación uno con el otro para formar un jalado abierto. El dispositivo de vacío está configurado para producir un vacío para atraer el sustrato (18) de la primera tela (20) para transferir el sustrato que avanza a la distancia predeterminada donde el primer (20) y segundo (30) transportador se superponen.

MÉTODO Y APARATO PARA TRANSPORTAR UNA HOJA DESDE UNA
SECADORA A UN CARRETE

Antecedentes de la Invención

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En la fabricación de papel o de productos de
tisú tal como tisús faciales, tisús para baño y toallas de
papel, las hojas de base son generalmente producidas
mediante el depositar una suspensión acuosa de fibras para
10 hacer papel sobre una tela formadora, desaguar la suspensión
para formar un tejido, secar el tejido y enrollar el tejido
secado en un rollo para una conversión subsecuente en un
producto particular. Durante la fabricación, la mayoría de
los tejidos son adheridos a una secadora Yankee calentada
15 con vapor y después se desalojan de la superficie de la
secadora Yankee por contacto con una cuchilla de doctor
(crepado) antes del enrollado para mejorar la suavidad y
estiramiento de la hoja.

20

En algunos procesos existentes, la hoja final
atraviesa un "jalado abierto" antes de ser enrollada en los
rollos. Por tanto la hoja secada no está soportada
momentáneamente antes de ser enrollada. En el caso de las

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hojas de tisú crepadas, la hoja es desalojada del cilindro de crepado y se pasa sin soporte desde el cilindro de crepado a un carrete. Esto es verdad para ambos el crepado convencional (prensado en húmedo) o el crepado a través de
5 hojas secadas a través de aire (TAD). Además se prevé que este proceso puede ser utilizado en una hoja que no está crepada, similar a las clases vidriadas a máquina (MG). Como se conoce en el negocio de la fabricación de tisú, estas corridas sin soporte o jaladas abierto son una fuente de
10 rompimientos de hoja y de producción de retraso de tiempo. Para compensar, las hojas de papel de tisú sin diseñadas para tener resistencias altas, particularmente en la dirección de la máquina a fin de permanecer intactas durante la fabricación. Sin embargo, las resistencias de tisú alta
15 pueden impactar negativamente la suavidad del tisú, lo cual no es deseable para el consumidor.

Síntesis de la Invención

20 La presente invención proporciona un método y un aparato para transportar una hoja desde una secadora Yankee, por ejemplo, a un carrete, el cual nivela ventajosamente el jalado abierto entre la secadora y el

carrete. Al hacer esto, las hojas de tisú que tienen una resistencia en la dirección de la máquina más baja pueden ser hecha de manera que las hojas de tisú son más suaves y de forma esencialmente más cuadrada en términos de las resistencias a la tensión en la dirección de la máquina y en la dirección transversal a la máquina.

De acuerdo a un aspecto de la invención, está descrito un sistema para transferir un tejido de papel que avanza continuamente desde una secadora a una sección de carrete. El sistema tiene una primera tela o fieltro, la cual define un primer transportador en movimiento (aquí, primera tela) y un segundo fieltro o tela que define un segundo transportador en movimiento (aquí, segunda tela). La primera tela es colocada hacia debajo de la secadora y puede traslapar la segunda tela por una distancia predeterminada para recibir el tejido de papel entre las telas. Idealmente, las telas son telas permeables las cuales pueden tener los mismos, pero más típicamente, niveles dispares de permeabilidad. Las telas permeables contempladas por la invención generalmente exhiben un flujo de aire en el rango de 50.700 pies cúbicos por minuto (cfm) a 125 pascales de caída de presión cuando las telas son nuevas.

El sistema para transferir el tejido también puede incluir un dispositivo de vacío colocado giratoriamente en contra de la primera tela. El dispositivo de vacío y la secadora pueden estar arreglados para formar un jalado abierto con respecto uno a otro. Optimamente, el dispositivo de vacío está configurado para producir una succión para atraer el tejido a la primera para transferir el tejido que avanza adentro de la distancia predeterminada en donde traslapan las telas primera y segunda. Además un

10 carrete puede ser colocado giratoriamente en contra de la segunda tela. Si se desea, el carrete y la segunda tela pueden cooperar para avanzar el tejido a un carrete enrollador para el enrollado.

15 Optimamente, una caja de vacío puede ser proporcionada para retener el tejido en contra de la segunda tela. Si se proporcionó, la caja de vacío está colocada a un lado de la segunda tela. Alternativamente, una caja de soplado para sostener el tejido puede ser substituida por o

20 complementar la caja de vacío. En forma similar, un dispositivo de inducción estática puede ser usado para sostener el tejido en el lugar sobre las telas.

De acuerdo a otro aspecto de la invención, un sistema para transferir el tejido que avanza desde la secadora a la sección de carrete puede comprender un primer transportador de fieltro o un transportador de tela de recolección configurado para recibir el tejido desde la secadora en un punto de recolección sobre el primer fieltro. Un transportador de fieltro de entrega o segundo transportador idealmente traslapa el primer transportador de fieltro en un área de traslape y colocada y separada del punto de recolección. Los transportadores de fieltro primero y segundo reciben el tejido entre los transportadores en el área de traslape.

En este aspecto, un rodillo de guía está colocado giratoriamente en contra del primer transportador de fieltro a una distancia predeterminada desde la secadora de manera que un jalado similar a aquel descrito arriba se lleve a cabo entre la secadora y el rodillo de guía. El rodillo de guía coopera con el primer transportador de fieltro para transferir el tejido que avanza desde la secadora en una dirección hacia el área de traslape. También, un carrete está giratoriamente colocado en contra del segundo transportador de fieltro. El carrete y el

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segundo transportador de fieltro cooperan para hacer avanzar el tejido a un carrete de enrollador para el enrollado del tejido.

5 El sistema puede incluir una caja de vacío de guía localizada cerca del rodillo de guía. En este caso, el rodillo de guía está colocado esencialmente entre la secadora y la caja de vacío de guía, y la caja de vacío de guía succiona al tejido en el primer transportador de
10 fieltro al pasar el primer transportador de fieltro sobre el rodillo de guía. Si se desea, una depresión de aire puede estar colocada esencialmente entre la secadora y el rodillo de guía para deflexionar una masa de aire desde la secadora en una dirección esencialmente hacia el primer transportador
15 de fieltro. Adicionalmente, una segunda caja de vacío puede ser proporcionada a un lado del segundo transportado de fieltro en la cercanía del carrete en una dirección hacia fuera del rodillo de guía.

20 De acuerdo a otro aspecto de la invención, se describe un método para transportar el tejido desde la secadora a la sección de carrete. El método puede incluir los pasos de hacer avanzar continuamente el tejido desde la

secadora a una primera banda de tela. La primera banda de tela puede estar arreglada para correr a través de un dispositivo localizado cerca de la secadora para recoger el tejido. El método puede incluir los subpasos de recibir el

5 tejido sobre la primera banda de tela por el dispositivo de recolección, hacer avanzar el tejido sobre la primera banda de tela en la dirección de un tambor de carrete, guiar el tejido entre la primera banda de tela y una segunda banda de tela, enhebrando una parte de extremo delantera que avanza

10 continuamente del tejido desde la segunda banda de tela sobre un carro enrollador de carrete a un lado del tambor de carrete y continuamente enrollando el tejido enhebrado en un rollo padre desde el carrete de enrollador. Si se desea el método también puede incluir los paso de guiar la primera

15 banda de tela y la segunda banda de tela alrededor de por lo menos un elemento inductor de corte mientras que el tejido está colocado entre las bandas. Idealmente las bandas primera y segunda deben ser envueltas suficientemente alrededor de por lo menos un elemento inductor de corte para

20 crear las fuerzas de corte para actuar sobre el tejido y aumentar la suavidad del tejido.



Breve Descripción de los Dibujos

Los anteriores y otros aspectos y ventajas de la presente invención son evidentes de la descripción
5 detallada dada abajo en combinación con los dibujos en los cuales:

La figura 1 es un diagrama esquemático de un aspecto de la invención que ilustra un jalado abierto entre
10 la secadora y el rodillo de guía;

La figura 2 es un diagrama esquemático de un aspecto alterno de la invención.

15 La figura 3 es una vista frontal de un rodillo de guía ranurado opcional tomado a lo largo de la línea III-III de la figura 2; y

La figura 4 es un diagrama esquemático de otro
20 aspecto alterno de la invención.

El uso repetido de los caracteres de referencia en la descripción y dibujos se intenta que

represente las mismas análogas características o elementos de la presente invención.

Descripción Detallada de los Dibujos

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Se hará ahora referencia detallada a los dibujos en los cuales los ejemplos involucrando la presente invención están mostrados. Los dibujos y la descripción detallada proporcionan una descripción escrita completa y detallada de la invención, y de la forma y del proceso para hacer y usarla, como para permitir a un experto en el arte pertinente el hacer y usarla, así como el mejor modo de llevar a cabo la invención. Sin embargo, los ejemplos establecidos en los dibujos y en la descripción detallada son proporcionados por vía de explicación de la invención y no se quiere que sean limitaciones de la invención. La presente invención por tanto incluye cualesquiera modificaciones y variaciones de los siguientes ejemplos como caen dentro del alcance de las reivindicaciones anexas y de sus equivalentes.

Como se involucra ampliamente en las figuras, se proporciona un sistema para transferir un tejido de papel



que avanza continuamente desde una secadora a una sección de
carrete. En general, un sistema de transferencia 10 está
mostrado con una secadora, por ejemplo, una secadora Yankee
12, una estación de crepado o doctor 14, una primera tela
5 20 (alternativamente un primer transportador de fieltro, la
primera banda de tela o el transportador de tela de
recolección), una segunda tela 30 (alternativamente un
segundo transportador de fieltro, un transportador de
entrega, un segundo fieltro de tela), y un carrete 36 o
10 tambor 36.

Aún cuando las figuras 1 y 2 ilustran el
sistema 10 que tiene una pluralidad de rodillos de
transportador 28, las cajas de vacío 34a y 34b y por lo
15 menos dos bandas 20 y 30, deberá entenderse que la siguiente
descripción de las incorporaciones de ejemplo no se intenta
que limiten la presente invención para usarse solo en tales
arreglos preensamblados ni son todos los anteriores
elementos requeridos y otros elementos pueden ser agregados
20 como se requiera. Por tanto, la presente invención es
adecuada para usarse con varios tipos de sistemas para
transferir un tejido de papel desde un sistema de secado de

tejido (por ejemplo un secado a través de aire, una secadora plana o Yankee) a varios tipos de secciones de carrete.

Además deberá notarse que la primera tela 20 y la segunda tela 30 pueden ser telas permeables que tienen la misma permeabilidad; más factiblemente, sin embargo, la primera tela 20 y la segunda tela 30 tienen diferentes permeabilidades. También, las permeabilidades de las telas 20 y 30 pueden cambiar durante la operación del sistema debido al contacto W de tejido repetido con las telas 20 y 30 que deposita y encastra polvo y desperdicios sobre las telas 20 y 30.

Con una referencia más particular a las figuras, la secadora Yankee 12 está mostrada en la figura 1 entregando el tejido 18 a la estación de crepado 14 y a través de un jalado D a un rodillo de vacío 24. En un arreglo optimo, la primera banda de tela 20 está localizada a un lado de la segunda banda de tela 30 de manera que la primera banda de tela 20 recoja el tejido 18 en el punto de recolección 22 y entrega el tejido 18 en la dirección de la segunda banda de tela 30. El tejido 18 continua en una dirección del carrete 36 primero a través un área de traslape

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32 colocada entre la primera tela 20 y la segunda tela 30, ambas de las cuales pueden ser una rejilla, una tela o similares. El tejido 18 continua en la dirección de la caja o cajas de vacío opcionales 34a y 34b y a través del carrete 5 36 hasta que se enrolla sobre un carrete de enrollador 37. El carrete de enrollador 37 puede ser un carrete, un carrete con núcleo, o un sistema sin núcleo alrededor del cual se enreda el tejido 18. También se contempla que el carrete de enrollador 37 puede ser arreglado en otra parte en el 10 sistema 10, tal como en una posición del carrete de enrollador 37' como se requiera.

La figura 1 además muestra un aspecto de la invención en el cual la primera tela 20 define un primer 15 transportador en movimiento. La primera tela 20 está colocada hacia abajo de la secadora 12 y está configurada para recoger y mover el tejido 18 hacia la segunda tela 30 al dejar el tejido 18 la estación de crepado 14. La estación de crepado opcional o doctor 14 separa y deflexiona el 20 tejido 18 desde la secadora 12 a la primera tela 20. Por ejemplo, la figura 1 y la figura 2 ilustran que un pleno de transferencia 16 puede quitar el tejido 18 de la superficie de la secadora 12 por el pleno de transferencia 16 viajando

cerca de una superficie de la secadora 12a. El pleno de transferencia 16/doctor 14 son diseñados óptimamente para desviar y controlar el aire de capa de límite para promover una transición suave del tejido o tisú 18 a la primera tela

5 20.

La segunda tela 30 define un segundo transportador en movimiento. El segundo transportador en movimiento 30 es traslapado por el primer transportador en movimiento 20 como se mostró en la figura 1 por una distancia predeterminada 32. El área de traslape 32 idealmente se extiende parcialmente a lo largo de ambos transportadores 20 y 30 como se mostró en las figuras 1 y 2 pero teóricamente debe correr desde esencialmente cerca del

10 movimiento 20 como se mostró en la figura 1 por una distancia predeterminada 32. El área de traslape 32 idealmente se extiende parcialmente a lo largo de ambos transportadores 20 y 30 como se mostró en las figuras 1 y 2 pero teóricamente debe correr desde esencialmente cerca del

15 punto de recolección 22 al carrito 36. Óptimamente, la distancia 32 necesita solo ser una longitud suficiente para asegurar que el tejido 18 es colocado seguramente sobre el segundo transportador de movimiento 30. Por tanto, los transportadores en movimiento primero y segundo 20 y 30 de

20 la figura 1 reciben el tejido de papel 18 entre los transportadores 20 y 30 los cuales se extienden juntos hacia el carrito 36 para sostener el tejido 18 en su lugar para la transferencia al carrito 36.

En el ejemplo anterior, el dispositivo de vacío 24 puede de nuevo estar colocado giratoriamente en contra del primer transportador en movimiento 20. La secadora 12 y el dispositivo de vacío 24 son entonces
5 colocados uno con respecto a otro para formar un jalado abierto D. El dispositivo de vacío 24 está configurado para producir un vacío fuerza de succión, indicada por la flecha 24' para atraer el tejido 18 a la primera tela 20 para transferir el tejido que avanza 18 adentro de la distancia
10 predeterminada 32 en donde los transportadores primero y segundo 20 y 30 traslapan. Si se desea, un rodillo 28a y el dispositivo de vacío 24 pueden estar arreglados para formar un punto de presión N dentro del cual el tejido 18 es recibido después del jalado D.

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El jalado D del sistema 10 puede tener una longitud de entre 4 pulgadas a alrededor de 48 pulgadas. Óptimamente, el jalado D abierto define una distancia de
entre 10 pulgadas a alrededor de 30 pulgadas. Los inventores
20 han encontrado que un jalado D de aproximadamente un pie acomoda ventajosamente varios elementos del sistema 10 mientras que se optimiza la transferencia del tejido 18

desde la estación de crepado 14 a la primera tela 20 con pocos rompimientos de tejido 18.

Como se mostró en la figura 1, una vez que el
5 tejido 18 alcanza la vecindad del carrete 36, el tejido 18 puede ser mantenido en contra del segundo transportador en movimiento 30 por las cajas de vacío 34a y 34b las cuales separan para mantener una succión indicada por la flecha 34' sobre el tejido de peso ligero 18 para sostenerlo
10 seguramente en contra del transportador 30 hasta que este se enrolla sobre el carrete de enrollador. Por vía de ejemplo, las cajas de vacío 34a y 34b pueden ser configuradas para operar a un nivel de vacío modesto de entre 0.1" H₂O a alrededor de 3,0" H₂O. Alternativamente, o también, una caja
15 de soplado 134 o un dispositivo de inducción estática 234 (discutida en la figura abajo) puede proporcionarse en lugar de o además de la caja de vacío 34 para reducir o evitar el volado de las orillas exteriores del tejido 18, ya que el tejido 18 puede ser un producto de tisú que tenga un peso
20 base de alrededor de 2 gramos por metro cuadrado (gsm) a alrededor de 65 gramos por metro cuadrado o alrededor de 25 libras por resma.

La figura 2 ilustra otro aspecto de la invención en el cual el rodillo de guía 124 está colocado giratoriamente en contra del primer transportador de fieltro 20 por una distancia predeterminada desde la secadora 12 de manera que el jalado D es formado entre la secadora 12 y el rodillo de guía 124. El rodillo de guía 124 coopera con el primer transportador de fieltro 20 para transferir el tejido que avanza 18 desde la secadora 12 en una dirección hacia el área de traslape 32. Si se desea, el rodillo de guía 124 puede tener por lo menos una ranura circunferencial 25 como se mostró en la figura 3 para ayudar a controlar el aire de capa de límite a fin de ayudar en la recolección del tejido 18 y para sostener el tejido 18 sobre el primer transportador de fieltro 20 hasta que el tejido 18 alcanza el área de traslape 32.

Con una referencia más específica al aspecto anterior, el rodillo 124 con las ranuras circunferenciales 25 (figura 3) coopera con el transportador 20 para enhebrar el tejido 18 desde la secadora 12 a través del jalado D a un primer transportador 20. En este aspecto, el tejido o tisú 18 puede ser sometido a doctor fuera de la secadora 12 y jalado por gravedad a velocidades de tejido conocidas o

soplados sobre el transportador 20 el cual sostiene y lleva el tejido 18 al área de traslape 32. Opcionalmente, un pleno de aire 33 (figura 1) puede ser proporcionado para soplar el aire A en la dirección de los transportadores de fieltro 20 y 30 para ayudar a asegurar la transferencia del tejido 18 a través del jalado D a un transportador 20 y hacia el transportador 30.

Si se desea una caja de vacío de guía 26 puede ser colocada a un lado del rodillo de guía de 124 como se ve en la figura 2. En este ejemplo, el rodillo de guía 124 está por tanto colocado esencialmente entre la secadora 12 y la caja de vacío de guía 26. La caja de vacío de guía 26 puede estar configurada para atraer el tejido 18 por fuerza de succión al primer transportador de fieltro 20 al pasar el primer transportador de fieltro 20 sobre el rodillo de guía 124. Como se sugirió, la caja 26 también puede ser un dispositivo de inducción estática o cualquier combinación de dispositivos de atracción de tejido para atraer el tejido 18 a un rodillo de guía 124 hacia el área de traslape 32.

La incorporación de ejemplo de la figura 2 puede incluir uno o más dispositivos de atracción de tejido,

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tal como una caja de vacío 34, la caja de soplado 134 o el dispositivo de inducción estática 234, como se sugirió en la incorporación anterior. Por vía de un ejemplo específico, la caja de vacío 34 está configurada para ayudar a mantener
5 el peso ligero 18 en contra de un segundo transportador 30 hasta que el tejido 18 alcanza el carrete de enrollador 37 para el enrollado.

Si se desea, la caja de vacío 34 puede incluir
10 las orillas de caja de soplado (no mostrada) o estar configurada de otra manera para soplar el aire esencialmente perpendicular a una dirección de movimiento del transportador 30 para crear efectos venturi (para provocar una caída en la presión) en la cercanía de un transportador
15 30 y ayudar en sostener el tejido 18 en contra del transportador 30. Alternativamente, el tejido 18 puede ser colocado en el lugar por un dispositivo de inducción estática 234 en lugar de o además de la caja de vacío 34. La caja de vacío 34 también puede tener las orillas de desgaste
20 de plástico reemplazables (no mostradas) para reducir el desgaste sobre el tejido 20. Con esta opción, las orillas de desgaste de plástico (u otro material adecuado) pueden ser fácilmente reemplazadas en vez de necesitar el remplazo de

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las bandas transportadoras 20 debido al contacto rápido y frecuente con las orillas de las cajas 34.

Deberá entenderse que el número y colocación
5 de las cajas 34, 134 y 234 no está limitada a los ejemplos delineados arriba ni como se muestra en las figuras. Por ejemplo, los dispositivos de atracción de tejido pueden ser colocados en cualquier punto a lo largo del transportador de recolección 20 y/o el transportador de entrega 30.

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El sistema 10 puede además incluir una depresión de aire 38 colocada esencialmente entre la secadora 12 y el rodillo de guía 124. La depresión de aire 38 está configurada para deflecar una mas de aire (no
15 mostrada) de una rotación de la secadora 12 en una dirección esencialmente hacia el primer transportador de fieltro 20 para ayudar adicionalmente a controlar la transferencia del tejido 18 al transportador 20.

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En otro aspecto de la invención, por lo menos un elemento inductor de corte 128 puede ser colocado como se ve por ejemplo en la figura 2. En esta ilustración, por lo menos uno de los transportadores de fieltro primero y

segundo 20 y 30 está envuelto suficientemente alrededor de por lo menos un elemento inductor de corte 128 para crear las fuerzas de corte que actúan sobre el tejido 18 y aumentar la suavidad del tejido 18. Esta configuración de
5 envoltura S puede estar localizada en cualquier punto deseado a lo largo de los transportadores 20 y 30 y puede incluir una pluralidad de tales configuraciones si se requieren.

10 La figura 2 también ilustra otro aspecto del sistema 10 el cual puede incluir por lo menos un dispositivo, tal como los dispositivos de ejemplo 40a b para aplicar los agentes tópicos a los transportadores 20 y 30 para recubrir el tejido 18. Aún cuando están mostrados dos
15 dispositivos 40a y b, una pluralidad de tales dispositivos puede estar colocada en varios otros lugares en el sistema 20. Los dispositivos adicionales así como los dispositivos 40a y b pueden estar configurados para cada uno aplicar agentes tópicos distintos como se desee.

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La figura 4 ilustra un aspecto adicional de la presente invención en la cual un sistema 110 para transferir y enrollar un tejido de tisú que avanza continuamente 18

desde la secadora 12 en un tambor de carrete 36a hasta que este está enrollado sobre un carrete de enrollador 37a. Un segundo tambor de carrete de 36b puede ser usado en combinación con el tambor de carrete 36a para ayudar en el
5 enrollado de un rollo padre 48. El sistema 110 puede tener solo un transportador 20, el cual está colocado hacia abajo desde la secadora 12 de manera que el jalado D es formado entre el transportador 20 y la secadora 12 en un arreglo similar a las incorporaciones anteriores. Por tanto, el
10 transportador 20 está configurado para recibir continuamente el tejido 18 a través del jalado D y continuamente avanzar el tejido 18, en contacto con un lado de fondo 20a del transportador 20 en la dirección del tambor de carrete 36a localizado dentro de un circuito transportador formado por
15 el transportador 20.

De acuerdo a otro aspecto de la invención, está descrito un método para transportar el tejido 18 desde la secadora 12 a la sección de carrete 36 que comprende el
20 paso de hacer avanzar continuamente el tejido 18 desde la secadora 12 a la primera banda de tela 20. La primera banda de tela 20 puede ser permeable y está opcionalmente arreglada cerca de la secadora 12 para la recolección del

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tejido 18 como se describió arriba. Los pasos adicionales pueden incluir el recibir el tejido 18 sobre la primera banda de tela 20 por el punto de recolección 22 avanzando al tejido 18 sobre la primera banda de tela 20 en la dirección
5 del tambor de carrete 36, guiando el tejido 18 entre la primera banda de tela 20 y una segunda banda de tela permeable 30, enhebrando una parte de extremo delantera que avanza continuamente (no mostrada) del tejido 18 desde la segunda banda de tela 30 sobre un carrete de enrollador 37 a
10 un lado del tambor del carrete 36 y continuamente enrollar el tejido enhebrado 18 en un rollo padre (no mostrado) desde un carrete de enrollador 37.

El método también incluye los pasos de guiar
15 la primera banda de tela 20 y la segunda banda de tela 30 alrededor de por lo menos un elemento de inducción de corte 128 mientras que el tejido 18 está colocado entre las bandas 20 y 30. En este ejemplo, las bandas primera y segunda 20 y 30 deben ser envueltas suficientemente alrededor de por lo
20 menos un elemento de inducción de corte 128, para crear las fuerzas de corte que actúan sobre el tejido 18 para aumentar la suavidad del tejido 18 como se desee por el consumidor.

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Será evidente por aquellos expertos en el arte
el que pueden hacerse varias modificaciones y variaciones en
la presente invención sin departir del alcance y espíritu de
la invención. Por ejemplo, las formas específicas,
5 cantidades y arreglos de los varios elementos de las
incorporaciones ilustradas pueden ser alterados para
adecuarse a aplicaciones particulares. Se intenta que la
presente invención incluya tales modificaciones y
variaciones como caen dentro del alcance de las
10 reivindicaciones anexas y de sus equivalentes.

REIVINDICACIONES

1. Un sistema para transferir un tejido de papel que avanza continuamente desde una secadora a una
5 sección de carrete que comprende:

una primera tela que define un primer transportador en movimiento, la primera tela estando colocada hacia abajo de la secadora;

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una segunda tela que define un segundo transportador de movimiento, el primer transportador en movimiento traslapa el segundo transportador en movimiento por una distancia predeterminada, los transportadores en
15 movimiento primero y segundo estando configurados para recibir el tejido de papel entre los transportadores; y

un dispositivo de vacío colocado giratoriamente en contra del primer transportador en
20 movimiento, la secadora y el dispositivo de vacío colocados unos con respecto a otro para formar un jalado abierto entre los mismos, el dispositivo de vacío está configurado para producir succión para atraer el tejido a la primera tela

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para transferir el tejido que avanza a la distancia predeterminada en donde los transportadores primero y segundo traslapan.

5 2. El sistema tal y como se reivindica en la cláusula 1 caracterizado porque el jalado abierto define una distancia de entre 4 pulgadas a alrededor de 48 pulgadas.

 3. El sistema tal y como se reivindica en la
10 cláusula 1 caracterizado porque el jalado abierto define una distancia de entre 10 pulgadas a alrededor de 30 pulgadas.

 4. El sistema tal y como se reivindica en la cláusula 1 caracterizado además porque comprende medios de
15 soporte para sostener el tejido en contra del segundo transportador en movimiento.

 5. El sistema tal y como se reivindica en la cláusula 4 caracterizado porque los medios de soporte para
20 sostener el tejido son una caja de vacío.

 6. El sistema tal y como se reivindica en la cláusula 5 caracterizado porque la caja de vacío está

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configurada para producir una presión de vacío de entre 0,1
pulgadas de agua a alrededor de 3,0 pulgadas de agua.

7. El sistema tal y como se reivindica en la
5 cláusula 4 caracterizado porque los medios de soporte para
sostener el tejido son una caja de soplado.

8. El sistema tal y como se reivindica en la
cláusula 4 caracterizado porque los medios de soporte para
10 sostener el tejido son un dispositivo de inducción estática.

9. El sistema tal y como se reivindica en la
cláusula 1 caracterizado porque comprende además una
estación de crepado, la estación de crepado está configurada
15 para separar y deflexionar el tejido desde la secadora a la
primera tela.

10. Un sistema para transferir y avanzar un
tejido desde una secadora a una estación de carrete que
20 comprende:

un primer transportador de fieltro configurado para recibir el tejido desde la secadora en un punto de recolección sobre el primer transportador de fieltro;

5 un segundo transportador de fieltro que traslapa el primer transportador de fieltro en un área de traslape colocada y separada desde el punto de recolección, los transportadores de fieltro primero y segundo están configurados para recibir el tejido entre los
10 transportadores cerca del área de traslape; y

un rodillo de guía colocado giratoriamente en contra del primer transportador de fieltro por una distancia predeterminada en la secadora de manera que es formado un
15 jalado entre la secadora y el rodillo de guía, el rodillo de guía, coopera con el primer transportador de fieltro de manera que el tejido que avanza es transferido desde la secadora en una dirección hacia el área de traslape.

20 11. El sistema tal y como se reivindica en la cláusula 10 caracterizado porque el rodillo de guía tiene por lo menos una ranura.

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12. El sistema tal y como se reivindica en la cláusula 10 caracterizado porque comprende además una caja de vacío de guía colocada a un lado del rodillo de guía, el rodillo de guía está colocado esencialmente entre la 5 secadora y la caja de vacío de guía, la caja de vacío de guía está configurada para atraer succionalmente el tejido al primer transportador de fieltro al pasar el primer transportador de fieltro sobre el rodillo de guía.

10 13. El sistema tal y como se reivindica en la cláusula 10 caracterizado además porque comprende una depresión de aire colocada esencialmente entre la secadora y el rodillo de guía, la depresión de aire está configurada para deflexionar una masa de aire desde la secadora en una 15 dirección esencialmente hacia el primer transportador de fieltro.

14. El sistema tal y como se reivindica en la cláusula 10 caracterizado porque comprende una segunda caja 20 de vacío colocada a un lado del segundo transportador de fieltro cerca de un carrete en una dirección hacia fuera del rodillo de guía, el carrete está colocado giratoriamente en contra del segundo transportador de fieltro, el carrete y el

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segundo transportador de fieltro cooperan para avanzar el tejido a un carrete de enrollador para el enrollado del tejido.

5 15. Un sistema para transportar un tejido de papel que avanza que comprende:

un transportador de tela de recolección configurado para recibir y transportar el tejido a través de
10 un jalado abierto entre una secadora y el transportador de tela de recolección;

un transportador de entrega colocado en un enganche de movimiento parcial con el transportador de tela
15 de recolección a lo largo de una longitud de cada uno de los transportadores de tela de recolección y de entrega, los transportadores de tela de recolección y de entrega estando configurados para recibir el tejido entre los transportadores; y

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medios de transferencia para transferir el tejido desde el jalado al transportador de tela de recolección, los medios de transferencia están colocados en



contra del transportador de tela de recolección y por lo
menos parcialmente entre la secadora y el transportador de
entrega, los medios de transferencia cooperan con el
transportador de tela de recolección para transferir el
5 tejido que avanza desde el transportador de tela de
recolección a entre los transportadores en la dirección de
un conjunto de carrete.

16. Un método para transportar un tejido
10 desde una secadora a una sección de carrete que comprende
los pasos de:

continuamente hacer avanzar el tejido desde la
secadora hasta una primera banda de tela, la primera banda
15 de tela está arreglada para correr a través de los medios de
recolección colocados cerca de la secadora para recolectar
el tejido;

recibir el tejido sobre la primera banda de
20 tela por los medios de recolección;

hacer avanzar el tejido sobre la primera banda de tela en una dirección de un carrete de enrollado hacia abajo;

5 guiar el tejido entre la primera banda de tela y una segunda banda de tela;

 enhebrar una parte de extremo delantero que avanza continuamente del tejido desde la segunda banda de tela sobre el carrete de enrollado a un lado del tambor de carrete; y

 enrollar continuamente el tejido enhebrado en un rollo padre sobre el carrete de enrollador.

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17. El método tal y como se reivindica en la cláusula 16 caracterizado porque comprende el paso de crear continuamente el tejido al avanzar el tejido desde la secadora a la primera banda de tela.

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18. El método tal y como se reivindica en la cláusula 16 caracterizado porque el tejido es un producto de tisú que tiene un peso base de entre alrededor de 2 gramos

por metro cuadrado a alrededor de 65 gramos por metro cuadrado.

19. Un sistema para transferir un tejido de
5 tisú que avanza continuamente desde una secadora a una
sección de carrete que comprende:

un primer transportador permeable colocado
hacia abajo desde la secadora, el primer transportador
10 permeable está configurado para mover continuamente el
tejido;

un segundo transportador permeable configurado
para mover continuamente el tejido, el primer transportador
15 permeable traslapa el segundo transportador permeable por
una distancia predeterminada, los transportadores permeables
primero y segundo están configurados para recibir el tejido
de tisú entre los transportadores; y

20 un dispositivo de atracción de tejido colocado
cerca del primer transportador permeable y además colocado
adicionalmente con respecto a la secadora para formar un
jalado abierto entre los mismos, el dispositivo de atracción

de tejido está configurado para atraer el tejido al primer transportador permeable para transferir el tejido que avanza a la distancia predeterminada en donde los transportadores permeables primero y segundo traslapan.

5

20. El sistema tal y como se reivindica en la cláusula 19 caracterizado porque comprende medios para recubrir el tejido.

10

21. El sistema tal y como se reivindica en la cláusula 20 caracterizado porque los medios para recubrir son por lo menos uno de los transportadores permeables primero y segundo, el por lo menos uno de los transportadores permeables primero y segundo está
15 configurado para agregar un agente tópico al tejido.

22. Un sistema para transferir y enrollar un tejido de tisú que avanza continuamente desde una secadora a una sección de carrete que comprende un transportador
20 colocado hacia debajo de la secadora de manera que un jalado abierto es formado entre el transportador y la secadora, el transportador está configurado para recibir continuamente el tejido a través del jalado y hacer avanzar continuamente el

56


tejido a lo largo de una lado de fondo del transportador en una dirección de un tambor de carrete localizado dentro de un circuito de transportador.

- 5 23. El sistema tal y como se reivindica en la cláusula 22 caracterizado además porque comprende un dispositivo de recolección colocado cerca del jalado y el transportador, el dispositivo de recolección está configurado para atraer el tejido al transportador para
- 10 transportador para transferir el tejido que avanza a la sección de carrete.

R E S U M E N

Se proporcionan un sistema y un método para transferir un tejido de papel que avanza continuamente desde una secadora a una sección de carrete. El sistema incluye una primera tela que define un primer transportador en movimiento. La primera tela puede ser una tela permeable la cual está colocada hacia abajo de la secadora. También está incluida una segunda tela, la cual puede ser permeable y define un segundo transportador en movimiento. El primer transportador en movimiento traslapa el segundo transportador en movimiento por una distancia predeterminada, y los transportadores en movimiento primero y segundo están configurados para recibir el tejido de papel entre los transportadores. Un dispositivo de vacío es colocado giratoriamente en contra del primer transportador en movimiento, y la secadora y el dispositivo de vacío son colocados uno con respecto a otro para formar un jalado abierto. El dispositivo de vacío está configurado para producir un vacío para atraer el tejido a la primera tela para transferir el tejido que avanza dentro de la distancia predeterminada en donde traslapan los transportadores primero y segundo.

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ US

PCT

CHAPTER II

DEMAND

under Article 31 of the Patent Cooperation Treaty:
The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated).

For International Preliminary Examining Authority use only	
Identification of IPEA	Date of receipt of DEMAND
Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION	
Applicant's or agent's file reference KCX-459-PCT (16596)	
International application No. PCT/US02/37661	International filing date (day/month/year) 21 November 2002
(Earliest) Priority date (day/month/year) 19 December 2001	
Title of invention METHOD AND APPARATUS FOR TRANSPORTING A SHEET FROM A DRYER TO A REEL	
Box No. II APPLICANT(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) KIMBERLY-CLARK WORLDWIDE, INC. 401 N. Lake Street Neenah, Wisconsin 54956 USA	Telephone No. 920-721-2447
	Facsimile No. 920-721-7339
	Teleprinter No.
	Applicant's registration No. with the Office
State (that is, country) of nationality: US	State (that is, country) of residence: US
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
State (that is, country) of nationality:	State (that is, country) of residence:
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
State (that is, country) of nationality:	State (that is, country) of residence:
☐ Further applicants are indicated on a continuation sheet.	

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCEThe following person is ☒ agent ☐ common representativeand ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: (Family name followed by given name; for a legal entity, full official designation.
The address must include postal code and name of country.)BERNARD S. KLOSOWSKI, JR.
DORITY & MANNING, P.A.
P.O. BOX 1449
Greenville, South Carolina 29602-1449 USA

Telephone No.

864-271-1592

Facsimile No.

864-233-7342

Teleprinter No.

Agent's registration No. with the Office

47,710

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION****Statement concerning amendments:***

1. The applicant wishes the international preliminary examination to start on the basis of:

☒ the international application as originally filedthe description ☒ as originally filed
☐ as amended under Article 34the claims ☒ as originally filed
☐ as amended under Article 19 (together with any accompanying statement)
☐ as amended under Article 34the drawings ☒ as originally filed
☐ as amended under Article 342. ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.3. ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). (This check-box may be marked only where the time limit under Article 19 has not yet expired.)

* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: English

☒ which is the language in which the international application was filed.☐ which is the language of a translation furnished for the purposes of international search.☐ which is the language of publication of the international application.☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.**Box No. V ELECTION OF STATES**

The applicant hereby elects all eligible States (that is, all States which have been designated and which are bound by Chapter II of the PCT)

excluding the following States which the applicant wishes not to elect:

Box No. VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- | | | |
|--|---|--------|
| 1. translation of international application | : | sheets |
| 2. amendments under Article 34 | : | sheets |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | sheets |
| 4. copy (or, where required, translation) of statement under Article 19 | : | sheets |
| 5. letter | : | sheets |
| 6. other (specify) | : | sheets |

For International Preliminary Examining Authority use only

received not received

☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

The demand is also accompanied by the item(s) marked below:

- | | |
|--|---|
| 1. ☒ fee calculation sheet | 5. ☐ statement explaining lack of signature |
| 2. ☐ original separate power of attorney | 6. ☐ sequence listings in computer readable form |
| 3. ☐ original general power of attorney | 7. ☐ tables in computer readable form related to sequence listings |
| 4. ☐ copy of general power of attorney; reference number, if any: | 8. ☒ other (specify): ExMail Certificate of Mailing, Check, Return Receipt Postcard |

Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

Bernard S. Klosowski, Jr.
Agent
DORITY & MANNING, P.A.

For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

3. ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply. ☐ The applicant has been informed accordingly.

4. ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.

5. ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

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Demand received from IPEA on:

PCT

FEE CALCULATION SHEET

Annex to the Demand

International application No. PCT/US02/37661		For International Preliminary Examining Authority use only	
Applicant's or agent's file reference KCX-459-PCT (16596)		Date stamp of the IPEA	
Applicant KIMBERLY-CLARK WORLDWIDE, INC.			
CALCULATION OF PRESCRIBED FEES			
1. Preliminary examination fee		750.00	P
2. Handling fee (<i>Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.</i>)		172.00	H
3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box		\$922.00	
		TOTAL	
MODE OF PAYMENT			
☐ authorization to charge deposit account with the IPEA (see below)	☐ cash		
☒ cheque	☐ revenue stamps		
☐ postal money order	☐ coupons		
☐ bank draft	☐ other (specify):		
AUTHORIZATION TO CHARGE (OR CREDIT) DEPOSIT ACCOUNT (This mode of payment may not be available at all IPEAs)			
☐ Authorization to charge the total fees indicated above.		IPEA/ US	
☒ (This check-box may be marked only if the conditions for deposit accounts of the IPEA so permit) Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.		Deposit Account No.: 04-1403	
		Date: June 25, 2003	
		Name: Bernard S. Klosowski, Jr.	
		Signature: B.S. Klosowski	

PCT REQUEST

Original (for SUBMISSION) - printed on 21.11.2002 08:21:25 AM

16596

0	For receiving Office use only	
0-1	International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4	Form - PCT/ROH01 PCT Request	
0-4-1	Prepared using	PCT-EASY Version 2.92 (updated 01.10.2002)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	United States Patent and Trademark Office (USPTO) (RO/US)
0-7	Applicant's or agent's file reference	16596
I	Title of Invention	METHOD AND APPARATUS FOR TRANSPORTING A SHEET FROM A DRYER TO A REEL
II	Applicant	
II-1	This person is:	applicant only
II-2	Applicant for	all designated States
II-4	Name	KIMBERLY-CLARK WORLDWIDE, INC.
II-5	Address:	401 N. Lake Street Neenah, WI 54956 United States of America
II-6	State of nationality	US
II-7	State of residence	US
II-8	Telephone No.	(920) 721-2447
II-9	Facsimile No.	(920) 721-7339
III-1	Applicant and/or inventor	
III-1-1	This person is:	inventor only
III-1-4	Name (LAST, First)	CLARKE, Robert, L.
III-1-5	Address:	1054 South Violet Lane Appleton, WI 54914 United States of America
III-2	Applicant and/or inventor	
III-2-1	This person is:	inventor only
III-2-4	Name (LAST, First)	NEAL, Jr., Thomas, G.
III-2-5	Address:	1108 East Park Ridge Avenue Appleton, WI 54911 United States of America

PCT REQUEST

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IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	CASSIDY, Timothy, A.
IV-1-2	Address:	DORITY & MANNING, P.A. P.O. Box 1449 Greenville, SC 29602-1449 United States of America
IV-1-3	Telephone No.	(864) 271-1592
IV-1-4	Facsimile No.	(864) 233-7342
IV-1-5	Agent's registration No.	38024
IV-2	Additional agent(s)	agent
IV-2-1	Name (LAST, First)	CROFT, Gregory, E.
IV-2-2	Address:	401 N. Lake Street Neenah, WI 54956 United States of America
IV-2-3	Telephone No.	(920) 721-3616
IV-2-4	Facsimile No.	(920) 721-7339
IV-2-6	Agent's registration No.	27542
V	Designation of States	
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AP: GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT EP: AT BE BG CH&LI CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR and any other State which is a Contracting State of the European Patent Convention and of the PCT OA: BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT
V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH&LI CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

PCT REQUEST

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V-5	Precautionary Designation Statement In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.8(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.		
V-6	Exclusion(s) from precautionary designations	NONE	
VI-1	Priority claim of earlier national application		
VI-1-1	Filing date	19 December 2001 (19.12.2001)	
VI-1-2	Number	10/025,205	
VI-1-3	Country	US	
VI-2	Priority document request The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1	
VII-1	International Searching Authority Chosen	European Patent Office (EPO) (ISA/EP)	
VIII	Declarations	Number of declarations	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	1	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	1	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	

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VIII-2-1	Declaration: Entitlement to apply for and be granted a patent Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent (Rules 4.17(II) and 51bis.1(a)(II)). In a case where the declaration under Rule 4.17(IV) is not appropriate: Name:	in relation to this international application KIMBERLY-CLARK WORLDWIDE, INC. is entitled to apply for and be granted a patent by virtue of the following:
VIII-2-1 (iv)		an assignment from CLARKE, Robert, L. to KIMBERLY-CLARK WORLDWIDE, INC., dated 05 January 2002 (05.01.2002)
VIII-2-1 (iv)		an assignment from NEAL, Jr., Thomas, G. to KIMBERLY-CLARK WORLDWIDE, INC., dated 11 February 2002 (11.02.2002)
VIII-2-1 (ix)	This declaration is made for the purposes of:	all designations

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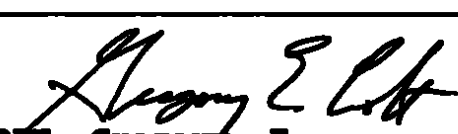
1859

VIII-3-1	Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(II) and 51bis.1(a)(III)): Name:	in relation to this international application KIMBERLY-CLARK WORLDWIDE, INC. is entitled to claim priority of earlier application No. 10/025,205 by virtue of the following:
VIII-3-1 (iv)		an assignment from CLARKE, Robert, L. to KIMBERLY-CLARK WORLDWIDE, INC., dated 05 January 2002 (05.01.2002)
VIII-3-1 (iv)		an assignment from NEAL, Jr., Thomas, G. to KIMBERLY-CLARK WORLDWIDE, INC., dated 11 February 2002 (11.02.2002)
VIII-3-1 (ix)	This declaration is made for the purposes of:	all designations

PCT REQUEST

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IX	Check list	number of sheets	electronic file(s) attached
IX-1	Request (including declaration sheets)	6	-
IX-2	Description	15	-
IX-3	Claims	7	-
IX-4	Abstract	1	EZABST00.TXT
IX-5	Drawings	4	-
IX-7	TOTAL	33	
	Accompanying items	paper document(s) attached	electronic file(s) attached
IX-8	Fee calculation sheet	✓	-
IX-9	Original separate power of attorney	✓	-
IX-17	PCT-EASY diskette	-	Diskette
IX-18	Other (specified):	Post Card	-
IX-19	Figure of the drawings which should accompany the abstract	1	
IX-20	Language of filing of the international application	English	
X-1	Signature of applicant, agent or common representative		
X-1-1	Name (LAST, First)	CROFT, Gregory, E.	

FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/EP
10-6	Transmittal of search copy delayed until search fee is paid	

FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
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PCT (ANNEX - FEE CALCULATION SHEET)

Original (for SUBMISSION) - printed on 21.11.2002 08:21:25 AM

16596

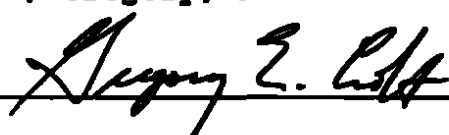
(This sheet is not part of and does not count as a sheet of the international application)

0	For receiving Office use only	
0-1	International Application No.	
0-2	Date stamp of the receiving Office	
0-4	Form - PCT/ROH01 (Annex) PCT Fee Calculation Sheet Prepared using	PCT-EASY Version 2.92 (updated 01.10.2002)
0-8	Applicant's or agent's file reference	16596
2	Applicant	KIMBERLY-CLARK WORLDWIDE, INC.
12	Calculation of prescribed fees	fee amount/multiplier Total amounts (USD)
12-1	Transmittal fee T	⇒ 240
12-2-1	Search fee S	⇒ 936
12-2-2	International search to be carried out by	EP
12-3	International fee	
	Basic fee	
	(first 30 sheets) b1	407
12-4	Remaining sheets	3
12-5	Additional amount (X) b2	9
12-6	Total additional amount	27
12-7	b1 + b2 = B	434
12-8	Designation fees	
	Number of designations contained in International application	94
12-9	Number of designation fees payable (maximum 5)	5
12-10	Amount of designation fee (X)	88
12-11	Total designation fees D	440
12-12	PCT-EASY fee reduction R	-125
12-13	Total international fee (B+D-R) I	⇒ 749
12-14	Fee for priority document	
	Number of priority documents requested	1
12-15	Fee per document (X) P	15
12-16	Total priority document fee	⇒ 15
12-17	TOTAL FEES PAYABLE (T+S+I+P)	⇒ 1,940
12-18	Mode of payment	authorization to charge deposit account
12-20	Deposit account instructions	
	The receiving Office:	United States Patent and Trademark Office (USPTO) (RO/US)
12-20-1	Authorization to charge the total fees indicated above.	✓

PCT (ANNEX - FEE CALCULATION SHEET)

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12-20-2	Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.	✓
12-20-3	Authorization to charge the fee for priority document.	✓
12-21	Deposit account No.	11-0875
12-22	Date	21 November 2002 (21.11.2002)
12-23	Name and signature	CROFT, Gregory, E. 

VALIDATION LOG AND REMARKS

13-2-2	Validation messages States	Green? More designations could be made. The following States have not been designated: US. Please verify.
13-2-3	Validation messages Names	Green? Inventor 2.: Last name should preferably be entered in capital letters. Please verify.
13-2-7	Validation messages Contents	Green? The abstract appears to be more than 150 words, applicant is reminded that it should be as concise as the disclosure permits (preferably 50 to 150 words if it is in English or when translated into English)
13-2-9	Validation messages Payment	Green? Please ensure that you have a valid deposit account with the receiving Office selected.

Case # 16596
COLOMBIA

CERTIFICATION

STATE OF WISCONSIN)
) SS
COUNTY OF WINNEBAGO)

I hereby certify that the attached paper constitutes a true copy of the original of a certain Assignment to KIMBERLY-CLARK WORLDWIDE, INC. by Robert L. Clarke and Thomas G. Neal, Jr. of the subject matter disclosed in an application for Letters Patent of the United States entitled

METHOD AND APPARATUS FOR TRANSPORTING A SHEET FROM A DRYER TO A REEL

which was signed by the said Robert L. Clarke on January 5, 2002; and Thomas G. Neal, Jr. on February 11, 2002.

December 30, 2003
Date

Melissa A. Blob
Melissa A. Blob, Notary Public
My Commission Expires: August 1, 2004

(Legalization required)

16,596

JUNE 11, 2002

PTAS

Chief Information Officer
Washington, DC 20231
www.uspto.gov

DORITY & MANNING
BERNARD S. KLOSOWSKI, JR.
ATTORNEYS AT LAW, P.A.
P.O. BOX 1449
GREENVILLE, SOUTH CAROLINA 29602-1449



102108054A

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 03/05/2002

REEL/FRAME: 012661/0885
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
CLARKE, ROBERT L.

DOC DATE: 01/05/2002

ASSIGNOR:
NEAL, THOMAS G.

DOC DATE: 02/11/2002

ASSIGNEE:
KIMBERLY-CLARK WORLDWIDE, INC.
401 NORTH LAKE STREET
NEENAH, WISCONSIN 54956

SERIAL NUMBER: 10025205
PATENT NUMBER:

FILING DATE: 12/19/2001
ISSUE DATE:

DOROTHY BASMA, PARALEGAL
ASSIGNMENT DIVISION
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JUN 20 2002

DORITY AND MANNING



UNITED STATES
PATENT AND
TRADEMARK OFFICE

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MAY 07, 2002

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Commissioner for Trademarks
Arlington, VA 22202-3513
www.uspto.gov

DORITY & MANNING
BERNARD S. KLOSOWSKI, JR.
ATTORNEYS AT LAW, P.A.
P.O. BOX 1449
GREENVILLE, SOUTH CAROLINA 29602-1449



102015974A

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 03/05/2002

REEL/FRAME: 012661/0885
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:
CLARKE, ROBERT L.

DOC DATE: 01/05/2002

ASSIGNOR:
NEAL, THOMAS G.

DOC DATE: 02/11/2002

ASSIGNEE:
KIMBERLY-CLARK WORLDWIDE, INC.
401 NORTH LAKE STREET
NEENAH, MISSOURI 54956

SERIAL NUMBER: 10025205
PATENT NUMBER:

FILING DATE: 12/19/2001
ISSUE DATE:

SAUNDRA BALLENGER, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

RECEIVED
MAY 13 2002

DORITY AND MANNING

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

73
X

Applicants: Robert L. Clarke and
Thomas G. Neal, Jr.

Docket No.: KCX459 (16596)

Serial No.: 10/025205

Group Art Unit: Unknown

Filed: December 19, 2001

Examiner: Unknown

For: Method And Apparatus For Transporting A Sheet From A Dryer To A Reel

Assignment - Joint Inventors

Commissioner of Patents
Washington, DC 20231

Sir:

WHEREAS, Robert L. Clarke residing at 1054 S. Violet Lane, Appleton, WI 54914 and Thomas G. Neal, Jr. residing at 1108 E. Park Ridge Avenue, Appleton, WI 54911 (hereinafter collectively referred to as Assignors), have made an invention and have each either (1) previously executed an application for Letters Patent of the United States of America therefor or (2) are contemporaneously executing an application for Letters Patent of the United States of America for the invention with is entitled:

AND WHEREAS, Kimberly-Clark Worldwide, Inc., a corporation of the State of Delaware, having offices at 401 North Lake Street, Neenah, Wisconsin 54956, United States of America (hereinafter referred to as Assignee), is desirous of acquiring the entire right, title and interest in and to said invention and under said Letters Patent or similar legal protection to be obtained therefor in the United States and in any and all foreign countries.

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN: Be it known that in consideration of the payment by the Assignee to the Assignors of the sum of One U.S. Dollar (\$1.00 U.S.) and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Assignors hereby sell, assign and transfer to the Assignees the full and exclusive right, title and interest to said invention and in and to any and all Letters Patent or similar legal protection in the United States and its territorial possessions and in any and all foreign countries to be obtained for said invention by said application or any continuation, continuation-in-part, divisional, renewal, substitute, re-examination, conversion or reissue thereof, including all extensions thereof, or any legal equivalent thereof in any foreign country for the full term or terms for which the same may be granted, including any and all convention rights.

The Assignors hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment and sale.

The Assignors further covenant that the Assignors will promptly provide, upon written request, Assignee with all pertinent facts and documents relating to said application, said invention and said Letters Patent and legal equivalents in foreign countries as may be known and accessible to the Assignors and that they will promptly execute and deliver to Assignee or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue, extend and enforce said application, said invention and said Letters Patent and said equivalents thereof in any foreign country which may be necessary or desirable to carry out the purposes thereof.

IN WITNESS WHEREOF, the Assignors have executed this document on the date indicated below:

Robert L. Clarke Date: 1/5/02
Robert L. Clarke

Thomas G. Neal, Jr. Date: 2/11/02
Thomas G. Neal, Jr.

THE STATE OF WISCONSIN

Office of the
Secretary of State

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JP

APOSTILLE

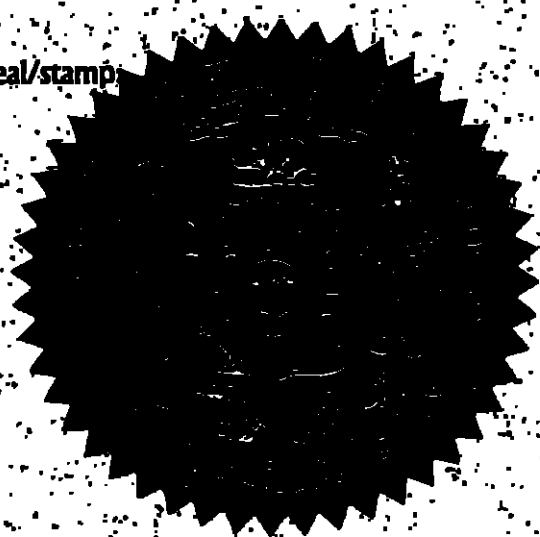
(Convention de La Haye du 5 octobre 1961)

1. Country: United States of America
2. This public document has been signed by Melissa A Blob.
3. acting in the capacity of Notary Public, State of Wisconsin
4. bears the seal/stamp of Notary Public, State of Wisconsin

CERTIFIED

5. at Madison, Wisconsin
6. January 9, 2004.
7. by the Secretary of State of Wisconsin
8. No. 95181

9. Seal/stamp:



10. Signature:

Douglas La Follette

DOUGLAS LA FOLLETTE
Secretary of State

REQUISITOS NECESARIOS PARA PRESENTACION Y AGILIZACION DE
TRAMITE

	USUARIO	RADICADOR
PATENTE DE INVENCION	()	()
MODELO DE UTILIDAD	()	()
- Indicación de que se solicita la concesión de una patente.	()	()
- Datos de identificación del solicitante o de la persona que se presenta la solicitud.	()	()
- Descripción de la invención.	()	()
- Dibujos de ser estos pertinentes.	()	()
- Comprobante de Pago de las tasas establecidas.	()	()
COMPLETA ()		INCOMPLETA ()
DISEÑO INDUSTRIAL ()		
- Indicación de que se solicita el registro de Diseño Industrial	()	()
- Datos de identificación del solicitante o de la persona que presenta la solicitud.	()	()
- Representación gráfica o fotográfica del Diseño Industrial o muestra del Material que incorpora el diseño.	()	()
- Comprobante de pago de las tasas establecidas	()	()
COMPLETA ()		INCOMPLETA ()
ESQUEMA DE TRAZADO ()		
- Indicación de que solicita el registro de un Esquema de trazado.	()	()
- Datos de identificación del solicitante o de la persona que presenta La solicitud.	()	()
- Representación gráfica del esquema de trazado	()	()
- Comprobante de pago de las tasas establecidas.	()	()
COMPLETA ()		INCOMPLETA ()

Firma Responsable:

Fecha:

-----+
 ACCION: Consultar Siguiente Anterior Ir al detalle Primero ...
 Seleccionar un(os) Registros

-----+
 SUPERINDUSTRIA Y COMERCIO SISTEMA DE REGISTRO
 Fecha 06/05/2004

-----+
 MANTENIMIENTO DE PROTOCOLOS

Numero : 17397

Fecha : 15/04/1997

Conferido: KIMBERLY CLARK WORLDWIDE, INC.

Pais : US ESTADOS UNIDOS DE AMERICA

Ciudad : 136 NEENAH, WISCONSIN

Represent: S Sustituir: S Desistir: S

No. Radicacion: 97 19642 Clase: 0 Seev: 0 Seac: 0

-----+

	escencia	Código	Ctr	Nombre
1	340	A		CASTRO DUQUE RAMIRO
2	3002			GOMEZ MEJIA HECTOR

Encontrados (1/1) registro(s)

-----+

2020
Bogotá D C

Doctor(a)
RAMIRO CASTRO DUQUE.
Apoderado(a)

REFERENCIA:	Radicación N°	04-51041
	Solicitud internacional	PCT/US02/37661
	Fecha inicio fase nacional	19/07/2004
	Trámite	011
	Evento	379
	Actuación	416
	Oficio N°	1136
	Folios	001

Teniendo en cuenta que la solicitud de privilegio de patente que se tramita bajo el expediente indicado en la referencia, reúne los requisitos de forma establecidos en los artículos 26 y 27 de la Decisión 486, de la Comisión de la Comunidad Andina, y en las demás disposiciones vigentes sobre la materia, se envía el extracto de la solicitud a la oficina de comunicaciones para efecto de su publicación en la Gaceta de Propiedad Industrial, conforme lo establece el artículo 40 de la Decisión 486.

Cúmplase
Dado en Bogotá D C,


ALIX CARMENZA CÉSPEDES DE VERGEL
Jefe División de Nuevas Creaciones.

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