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(54) **Method for web threading in a slitter-winder and a slitter-winder**

Verfahren zum Einfädeln einer Bahn in einer Rollenschneidmaschine und eine Rollenschneidmaschine

Procédé de guidage de bande dans un enrouleuse-refendeuse et une machine enrouleuse-refendeuse

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Description

[0001] The invention relates to method for web threading in a slitter-winder and a slitter winder. Especially the invention relates to a method according to the features of preamble of claim 1 and to a slitter-winder according to the features of preamble of claim 1.

[0002] It is known that a fiber web, e.g. paper, is manufactured in machines which together constitute a paper-manufacturing line which can be hundreds of metres long. Modern paper machines can produce over 450,000 tons of paper per year. The speed of the paper machine can exceed 2,000 m/min and the width of the paper web can be more than 11 metres.

[0003] In paper-manufacturing lines, the manufacture of paper takes place as a continuous process. A paper web completing in the paper machine is reeled by a reel-up around a reeling shaft i.e. a reel spool into a parent roll the diameter of which can be more than 5 metres and the weight more than 160 tons. The purpose of reeling is to modify the paper web manufactured as planar to a more easily processable form. On the reel-up located in the main machine line, the continuous process of the paper machine breaks for the first time and shifts into periodic operation.

[0004] The web of parent roll produced in paper manufacture is full-width and even more than 100 km long so it must be slit into partial webs with suitable width and length for the customers of the paper mill and wound around cores into so-called customer rolls before delivering them from the paper mill. This slitting and winding up of the web takes place as known in an appropriate separate machine i.e. a slitter-winder.

[0005] On the slitter-winder, the parent roll is unwound, the wide web is slit on the slitting section into several narrower partial webs which are wound up on the winding section around winding cores, such as spools, into customer rolls. When the customer rolls are completed, the slitter-winder is stopped and the wound rolls i.e. the so-called set is removed from the machine. Then, the process is continued with the winding of a new set. These steps are repeated periodically until paper runs out of the parent roll, whereby a parent roll change is performed and the operation starts again as the unwinding of a new parent roll. Slitter-winders employ winding devices of different types depending on, inter alia, on the type of the fiber web being wound. On slitter-winders of the multi-station winder type, the web is guided from the unwinding via guide rolls to the slitting section where the web is slit into partial webs which are further guided to the winding roll/rolls of the winding stations to be wound up onto cores into customer rolls. Adjacent partial webs are wound up on different sides of the winding roll / on different winding rolls. Multistation winders have one to three winding rolls and in them each partial web is wound to a partial web roll in its own winding station. During winding a winding nip is formed between the winding roll and the partial web roll to be wound.

[0006] In US patent 5,152,471 (EP0315569B1) is disclosed a web threading apparatus for a web slitting machine which longitudinally divides a wide web in a slitting or cutting station, including a threading device having a threading rod guided by chains through the machine. The threading device supplies first and second groups of sub-webs to first and second groups of associated winding apparatus. In this prior art arrangement the web is threaded through the slitting machine from the unwinder as a full width web using the threading rod and at a cutting station the wide web is longitudinally divided by means of longitudinally cutting means into narrower sub-webs which are guided to a take-up station by guide means that operable along with the threading device for capturing the tail of the web to be unwound and drawing the web along the path defined by the guide means through the cutting station and up to the take-up station. The take-up station comprises a plurality of take-up unit by means of which the sub-webs can be rewound to narrower rolls, the take-up units of the group having substantially aligned winding axes which are spaced from the substantially aligned winding axes of the other group. In this prior art arrangement the threading device further includes a first path for carrying at least a sub-web up to a take-up unit of one group and a second path for carrying an adjacent sub-web to a take-up unit of a second group and a single threading rod operating along a threading rod guide means defining said first path firstly to draw all sub-webs for said first group to said take-up units of said first group and thereafter said threading rod operating along a threading rod guide means defining said second path to draw all webs of said second group to said take-up units of said second group. In this prior art arrangement to enable the sub-webs to be brought up by the transfer means to the one group of take-up units to be led away from the region of the other group a transverse severing means may be provided which may operate automatically but in many cases it is preferred to perform the severing with a suitable device by hand.

[0007] In EP patent 0818409 is disclosed a method in winding of a paper web and a winding device. On this prior art arrangement the paper web is unwound from a paper reel and the paper web is slit in a slitter-winder longitudinally into component webs which are further wound into component rolls on winding drums of winding stations and the paper web is passed through the slitting station of the slitter-winder in which slitting station component web are slit out of the web by means of blades. The tails of the slit component webs are cut off in the cross direction by a cutter device so that the tails of the component webs extend onto the winding drums to desired, predetermined points. the component webs are separated by means of separators to component webs passing to different winding stations and the component webs passing to the first winding station are transferred onto the winding drum of the first winding station by means of a threading member, and the component webs passing to the second winding station are transferred on-

to the winding drum of the second winding station by means of a threading member. The threading members are bar-like member which extend across the width of the winding device in cross direction of the component webs and said members move along rail provided both sides of the winding device. The running of the web is stopped for the time between the cutting to specified measure and the starting of the rewinding.

[0008] In EP patent 1151947 is disclosed a method for threading a plurality of part webs which are cut from a material web onto par-web reels, in which the start of the material web is inserted into winder, the material web is conveyed through the winder on a first path which lead to a disposal device until the said material web is present with its full width and is cut into the part webs and the said material web is severed transversely with respect to its running direction as soon as the part webs are present and the part web starts which are formed by the severing are guided through a diverter arrangement into a second path which branches off from the first path to winding positions.

[0009] The prior art arrangements in which the web threading is done in full width of the web are expensive due to expensive structures of the arrangements, for example guides at the side of the slitter-winder and mechanisms for attaching the tail to the threading bar and mechanisms for moving the threading bar, and the separation of partial webs has proven difficult due to locating the winding rolls and often special devices are needed for separation of the partial webs to the winding stations.

[0010] It is also known from prior art to thread the web as so called wedge threading in which the tail of the web is severed not in straight cross directional cut of the web but by cutting the web tail to have a wedge shaped form. In prior art arrangements this threading technique has involved manual threading and separating of the partial web and it has thus been time consuming and not very cost effective and especially problematic has been that the wedge tail needs to be removed manually or separate arrangements have been needed for this. Also it has set limits to web run and to locating winding and guide rolls in the slitter-winder layout.

[0011] An object of the invention is to create a method for web threading in a slitter-winder and a slitter-winder in which the problems and disadvantages relating to web threading in prior art arrangements have been eliminated or minimized.

[0012] Another object of the invention is to create a method for web threading in a slitter winder and a slitter-winder which is cost effective and well-functioning.

[0013] In order to achieve the previously mentioned objects and to achieve those that will come apparent later the method according to the invention is mainly characterized by the features of the characterizing clause of claim 1.

[0014] The slitter-winder according to the invention is mainly characterized by the features of the characterizing clause of claim 4.

[0015] In this description term "a partial web" is used for each longitudinally slitted component web, or sub-web and correspondingly term "a partial web roll" is used for a component web roll, or sub-web roll, or customer roll. Also the following terminology of a slitter-winder is used: the slitter-winder comprises an unwinding section where the parent (machine) roll (reel) is unwound, in a slitting section the full width web unwound from the parent roll is slitted longitudinally to partial webs and in a winding section the partial webs are wound around cores or corresponding spools to partial web rolls. In this invention the winding section comprises a multistation winder in which two winding rolls are used, each providing for winding of a set of partial web rolls. After the slitting section separation of the partial webs for each winding station is done so that each other partial webs (the partial webs of the inner side) are passed to one winding roll (to the winding roll of the inner side) and the winding stations in connection with the winding roll of the inner side and the other each other partial webs (the partial webs of the outer side) are passed to another winding roll (the winding roll of the outer side) and the winding stations in connection with the winding roll of the outer side. By use of terms inner and outer is not necessarily meaning to define the order or location of any kind in connection with the arrangement.

[0016] According to an advantageous feature of the invention at least one rope-like transfer means is used for passing the partial webs to the winding stations on the winding rolls. Preferable two rope-like transfer means are used.

[0017] According to an advantageous feature of the invention at least one of the winding rolls is provided with suction for ensuring the adherence or the partial webs on the surface of the winding roll.

[0018] According to the invention the web tail wedge is lifted against a winding roll by rope-like transfer means, over which rope-like transfer means the web tail wedge falls downwards when the winding roll pulls more web from the unwinding section.

[0019] By rope-like transfer means is meant a transfer rope or any corresponding means suitable for transferring the web tail wedge in accordance with the invention. The rope-like transfer means can also be a in cross-direction tensioned wire of like or a bar-like with good bending stiffness. Preferably the rope-like transfer means is an in cross-direction tensioned transfer rope.

[0020] According to an advantageous aspect of the invention in the method for web threading in a slitter-winder

- the web tail wedge is passed over the rope-like transfer means, and
- the rope-like transfer means of the inner side lifts the web tail wedge against the winding roll of the inner side, which winding roll is provided by suction means
- the web tail wedge is run forward in jogging speed until full width such that the web tail wedge running over the rope-like transfer means is drawn down-

wards by gravity

- when the web is straight, longitudinal slitting of the web into partial webs is begun
- when the slit-beginnings in the web have passed the rope-like transfer means, the rope-like transfer means is moved to the extreme of its movement in relation to the winding roll of the inner side and the jogging of the web is stopped
- the partial webs of the inner side are cut / severed near the rope-like transfer means to desired length and the rope-like transfer means is lowered whereby the partial webs of the outer side will lower downwards with the rope-like transfer means
- a rope-like transfer means of the outer side takes the partial webs for the outer side to the winding roll of the outer side where the partial webs are severed to desired length.

[0021] According to an advantageous aspect of the invention

- from an unwinding section the web tail is threaded as a web tail wedge
    - ◦ the wedge is made manually to the tail of the web on the parent roll or the wedge may be cut to the tail while it is lead in the slitter-winder.
    - ◦ in advantageous cases the web tail is already wedge shaped and the wedge has been cut already at a reel-up during a reel change
- the web tail wedge is passed through the slitting section while the slitter blades or corresponding slitting means are not in slitting position
- the web tail wedge is passed over the rope-like transfer means
- the web tail wedge is lifted and the web tail is passed on jogging speed during lifting
- the web tail falls downwards from the rope-like transfer means and the slitter-winder is still on jogging speed and thus the web in jogging
- the rope-like transfer means is lifted up and the beginnings of the slitted longitudinal cuts are below of the rope-like transfer means
- running is stopped
- the partial webs for the inner side are severed either by severing means or manually
- after severing the partial webs for the inner side, the rope-like transfer means return back same or different path and the movement path of the rope-like transfer means disconnects the partial webs of the outer side from the suction of the winding roll of the inner side
- the rope-like transfer means is lowered and another rope-like transfer means lifts the partial webs of the outer side to the winding roll of the outer side.

[0022] In the following the invention is further explained in detail with reference to the accompanying drawing in which

[0023] Figures 1 - 6 show schematically one example of method steps for web threading in a slitter-winder according to an advantageous aspect of the invention.

[0024] A slitter-winder comprises an unwinding section where the parent roll is unwound, slitting section in which the full width web unwound from the parent roll is slitted longitudinally to partial webs and winding section in which the partial webs are wound around cores or corresponding spools to partial web rolls. In the example of figures 1 - 6 only the winding section rolls of a slitter-winder is shown. The winding section comprises a multistation winder in which two winding rolls 11, 12 are used, each providing for winding of a set of partial web rolls. After the slitting section separation of partial webs for each winding station is done as shown in the example of figures 1 - 6 by using a rope-like transfer means 15 so that each other partial webs (first partial webs) are passed to one (first) winding roll and the (first) winding stations in connection with this (first) winding roll and the other each other (second) partial webs are passed to another (second) winding roll and the (second) winding stations in connection with this (second) winding roll. The winding rolls 11, 12 are provided with suction for ensuring the adherence of the partial web on the surface of the winding roll 11, 12.

[0025] In the example of the figures 1 - 6 in the step shown in figure 1 web threading in a slitter-winder the web tail wedge T is passed over the rope-like transfer means 15, as indicated by arrow S.

[0026] In the step of figure 2 the rope-like transfer means 15 of inner side lifts the web tail wedge T against the winding roll 11 of the inner side, which winding roll 11 is provided by suction means. As indicated by arrows S the web tail wedge T is run forward in jogging speed until full width of the web W such that the web tail wedge T running over the rope-like transfer means 15 is drawn downwards by gravity, as indicated by arrow G and the winding roll 11 pulls more web W from the unwinding section, as indicated by arrow R.

[0027] When the web W is straight and desired tension has been achieved, slitting of the web W into partial webs W1, W2 is begun.

[0028] In the step of figure 3 the slit-beginnings B have passed over the rope-like transfer means 15 and the rope-like transfer means 15 is moved to the extreme of its movement area on the winding roll 11 of the inner side and the jogging is stopped.

[0029] In the step of figure 4 the partial webs W1 of the inner side have been severed / cut in cross-direction near the rope-like transfer means 15 to desired length and the partial webs W1 of the inner side adhere onto the surface of winding roll 11 of the inner side by suction. The reject tail ends WX are led to a pulper.

[0030] In the step of figure 5 the rope-like transfer means 15 is lowered whereby the partial webs W2 of the outer side will lower downwards with the rope-like trans-

fer means 15.

[0031] In the step of figure 6 a rope-like transfer means 16 of outer side takes the partial webs W2 for outer side to the winding roll 12 of the outer side where the partial webs W2 are severed to desired length. Alternatively the rope-like means 15 of the inner side can also be used for taking the partial webs W2 to the winding roll 12 of the outer side.

[0032] The rope-like transfer means 15, 16 are attached at end pieces (not shown) at each end and they are moved by chains (not shown).

[0033] In the example of figures 1 - 6 for web threading in a slitter-winder from unwinding section the web tail is threaded as a web tail wedge T and the web tail wedge T is passed through the slitting section while the slitter blades or corresponding slitting means are not in slitting position. At winding station the web tail wedge T is passed over the rope-like transfer means 15 and the web tail wedge is lifted by a rope-like transfer means 15 and the web tail wedge T is passed on jogging speed during lifting. The web tail wedge T falls downwards from the rope-like transfer means 15 and the slitter-winder is still on jogging speed. In the next step the rope-like transfer means 15 is lifted up and slitting beginnings B are passed past the rope-like transfer means 15. The running of the slitter-winder is stopped. There after the partial webs W1 for inner side are severed either by severing means or manually. After severing the rope-like transfer means 15 returns back same or different path and the movement path of the rope-like transfer means 15 disconnects the partial webs W2 of outer side from the suction of the winding roll 11 of the inner side. The rope-like transfer means 15 is lowered and another rope-like transfer means 16 lifts the partial webs W2 of the outer side to the winding roll 12 of the outer side.

Claims

1. Method for web threading in a slitter-winder comprising an unwinding section where a parent roll is unwound, a slitting section a full width web (W) unwound from the parent roll is slitted longitudinally to partial webs (W1, W2) and a winding section where the partial webs (W1, W2) are wound around cores or corresponding spools to partial web rolls, which winding section comprises a multistation winder in which two winding rolls (11, 12) are used, each providing for winding of a set of partial web rolls, in which method web is threaded from the unwinding section via the slitting section to the winding section and in which method after the slitting section in threading the partial webs (W1, W2) for each winding station are separated so that each other partial webs (W1) i.e. the partial webs (W1) of the inner side are passed to one winding roll (11) i.e. to a winding roll (11) of the inner side and the other each other partial webs (W2) i.e. the partial webs (W2) of the outer side are passed to another winding roll i.e. a winding roll (12) of the outer side, **characterized in that**, in the method for web threading the web (W) is passed by passing a web tail wedge (T) through the slitter-winder, that in the method at least one rope-like transfer means is used for passing the partial webs to the winding stations on the winding rolls and that in the method the partial webs (W1) are adhered on the surface of at least one of the winding rolls (11, 12) and that in the method the web tail wedge (T) is lifted against a winding roll (11) by rope-like transfer means (15), over which rope-like transfer means (15) the web tail wedge (T) falls downwards when the winding roll (11) pulls more web (W) from the unwinding section.

2. Method according to claim 1, **characterized in that** in the method from unwinding section the web tail is threaded as a web tail wedge (T) and the web tail wedge (T) is passed through the slitting section while the slitter blades or corresponding slitting means are not in slitting position, that at winding section the web tail wedge (T) is passed over the rope-like transfer means (15) and the web tail wedge (T) is lifted by a rope-like transfer means (15) and the web tail wedge (T) is passed on jogging speed during lifting, that the web tail wedge (T) falls downwards from the rope-like transfer means (15) and the slitter-winder is still on jogging speed, that the rope-like transfer means (15) is lifted up and slitting ends (B) of the longitudinal cuttings between the partial webs (W) are below of the rope-like transfer means (15), that the running of the slitter-winder is stopped, that the partial webs (W1) for inner side are severed, that the rope-like transfer means (15) returns back and that the rope-like transfer means (15) is lowered and that a rope-like transfer means (15; 16) lifts the partial webs (W2) of the outer side to the winding roll 12 of the outer side.

3. Method according to claim 1, **characterized in that** the method comprises the steps in following order:

   - the web tail wedge (T) is passed over the rope-like transfer means (15), and
   - the rope-like transfer means (15) of the inner side lifts the web tail wedge (T) against the winding roll (11) of the inner side, which winding roll (11) is provided by suction means,
   - the web tail wedge (T) is run forward in jogging speed until full width such that the web tail wedge (T) running over the rope-like transfer means (15) is drawn downwards by gravity
   - when the web (W) is straight, longitudinal slitting of the web (W) into partial webs (W1, W2) is begun,
   - when the slit-beginnings (B) in the web (W) have passed the rope-like transfer means (15),

the rope-like transfer means (15) is moved to the extreme of its movement in relation to the winding roll (11) of the inner side and the jogging of the web (W) is stopped
- the partial webs (W1) of the inner side are cut / severed near the rope-like transfer means (15) to desired length and the rope-like transfer means (15) is lowered whereby the partial webs (W2) of the outer side will lower downwards with the rope-like transfer means (15)
- a rope-like transfer means (16) of the outer side takes the partial webs (W2)for the outer side to the winding roll (12) of the outer side where the partial webs (W) are severed to desired length.

4. A slitter-winder, which comprises an unwinding section, a slitting section and a winding section comprising a multistation winder comprising two winding rolls (11, 12), which slitter-winder comprises means for threading the web tail from the unwinding section to the winding section and means for separating the partial webs (W1, W2) for each winding station formed in connection with each winding roll (11, 12) i.e. for the partial webs (W1) of the inner side and for the partial webs (W2) of the outer side, in which the slitter-winder the means for web threading comprise means for passing a web tail wedge (T) through the slitter-winder, that the slitter-winder comprises at least one rope-like transfer means (15; 16) for passing the partial webs to the winding stations on the winding rolls (11, 12) and that at least one of the winding rolls (11, 12) is provided with suction, **characterized in that**, the rope-like transfer means (15) is used for separation of partial webs (W1, W2) for each winding station so that each other partial webs (W1; W2) are passed to one winding roll (11; 12) and the winding stations in connection with this winding roll (11; 12) and the other each other partial webs (W2; W1) are passed to another winding roll (12; 11) and the winding stations in connection with this winding roll (12; 11).

5. Slitter-winder according to claim 4, **characterized in that**, in the slitter-winder comprises two rope-like transfer means (15, 16) and that one rope-like transfer means is for the passing of the partial webs (W1) of the inner side onto the surface of the winding roll (11) of the inner side and that one is for the passing of the partial webs (W2) of the outer side onto the surface of the winding roll (12) of the outer side.

Patentansprüche

1. Verfahren zum Endaufführen einer Bahn in einem Rollenschneider, der einen Abwickelabschnitt, in dem ein Volltrambour bzw. eine Abwickelrolle abgewickelt wird, einen Schneidabschnitt, in welchem eine über die volle Breite verlaufende Bahn (W), die von der Abwickelrolle abgewickelt wird, in Längsrichtung in Teilbahnen (W1, W2) geschnitten wird, und einen Wickelabschnitt aufweist, in dem die Teilbahnen (W1, W2) um Kerne oder entsprechende Spulen zu Teilbahnrollen gewickelt werden, wobei der Wickelabschnitt einen Mehrstationen-Wickler aufweist, in den zwei Wickelrollen (11, 12) verwendet werden, die jeweils das Wickeln eines Satzes von Teilbahnrollen ermöglichen, wobei in dem Verfahren die Bahn von dem Abwickelabschnitt über den Schneidabschnitt zu dem Wickelabschnitt aufgeführt wird, und wobei in dem Verfahren nach dem Schneidabschnitt beim Aufführen die Teilbahnen (W1, W2) für jede Wickelstation aufgeteilt werden, sodass die Teilbahnen (W1), d.h. die Teilbahnen (W1) der inneren Seite, zu einer Wickelrolle (11), d.h. einer Wickelrolle (11) der inneren Seite, geleitet werden, und die jeweils anderen Teilbahnen (W2), d.h. die Teilbahnen (W2) der äußeren Seite, zu einer anderen Wickelrolle, d.h. einer Wickelrolle (12) der äußeren Seite, geleitet werden,
dadurch gekennzeichnet, dass
bei dem Verfahren zum Bahnaufführen die Bahn (W) durch Weiterleiten eines Bahnendkeils (T) durch den Rollenschneider weitergeleitet wird, das in dem Verfahren wenigstens eine seilartige Transporteinrichtung zum Weiterleiten der Teilbahnen zu den Wickelstationen auf den Wickelrollen verwendet wird, und dass in dem Verfahren die Teilbahnen auf der Oberfläche von wenigstens einer der Wickelrollen (11, 12) angehaftet werden, und dass in dem Verfahren der Bahnendkeil (T) gegen eine Rolle (11) mittels seilartiger Transporteinrichtungen (15) angehoben wird, wobei über die seilartigen Transporteinrichtungen (15) der Bahnendkeil (T) nach unten fällt, wenn die Wickelrolle (11) mehr Bahn (W) von dem Abwickelabschnitt zieht.

2. Verfahren nach Anspruch 1,
dadurch gekennzeichnet, dass
in dem Verfahren von dem Abwickelabschnitt das Bahnende als ein Bahnendkeil (T) aufgeführt und der Bahnendkeil (T) durch den Schneidabschnitt hindurchgeführt wird, während die Schneidklingen oder entsprechende Schneideinrichtungen sich nicht in der Schneidposition befinden, dass an dem Wickelabschnitt der Bahnendkeil (T) über die seilartigen Transporteinrichtungen (15) geführt wird und der Bahnendkeil (T) durch eine seilartige Transporteinrichtung (15) angehoben wird und der Bahnendkeil (T) mit Jogging- bzw. Laufschritt-Geschwindigkeit während des Anhebens weitergeleitet wird, dass der Bahnendkeil (T) von der seilartigen Transporteinrichtung (15) nach unten fällt und der Rollenschneider sich noch immer in Jogging-Geschwindigkeit befindet, dass die seilartige Transporteinrichtung (15)

angehoben wird und Schneidenden (B) der Längsschneider sich zwischen den Teilbahnen (W) unterhalb der seilartigen Transporteinrichtung (15) befinden, dass der Lauf des Rollenschneiders angehalten wird, dass die Teilbahnen (W1) für die innere Seite abgeschnitten werden, dass die seilartige Transporteinrichtung (15) zurückkehrt, und dass die seilartige Transporteinrichtung (15) abgesenkt wird, und dass eine seilartige Transporteinrichtung (15; 16) die Teilbahnen (W2) der äußeren Seite zu der Wickelrolle (12) der äußeren Seite anhebt.

3. Verfahren nach Anspruch 1,
dadurch gekennzeichnet, dass
das Verfahren die Schritte in der nachfolgenden Reihenfolge aufweist:

- Der Bahnendkeil (T) wird über die seilartige Transporteinrichtung (15) geführt, und
- Die seilartige Transporteinrichtung (15) der inneren Seite hebt den Bahnendkeil (T) gegen die Wickelrolle (11) der inneren Seite an, wobei die Wickelrolle (11) mit einer Saugeinrichtung versehen wird,
- Der Bahnendkeil (T) wird in Jogging-Geschwindigkeit auf seine ganze Breite derart vorwärts bewegt, dass der Bahnendkeil (T), welcher über die seilartige Transporteinrichtung (15) läuft, durch die Schwerkraft nach unten gezogen wird,
- Wenn die Bahn (W) gerade ist, wird das Längsschneiden der Bahn (W) in Teilbahnen (W1, W2) begonnen,
- Wenn die Schlitzanfänge (B) in der Bahn (W) an der seilartigen Transporteinrichtung (15) vorbeigekommen sind, wird die seilartige Transporteinrichtung (15) zu dem Äußersten ihrer Bewegung bezüglich der Wickelrolle (11) der inneren Seite bewegt und die Bewegung der Bahn (W) wird angehalten,
- Die Teilbahnen (W1) der inneren Seite werden in der Nähe der seilartigen Transporteinrichtung (15) auf die gewünschte Länge geschnitten bzw. getrennt und die seilartige Transporteinrichtung (15) wird abgesenkt, wodurch die Teilbahnen (W2) der äußeren Seite sich mit der seilartigen Transporteinrichtung (15) nach unten senken,
- Eine seilartige Transporteinrichtung (16) der äußeren Seite nimmt die Teilbahnen (W2) für die äußere Seite zu der Wickelrolle (12) der äußeren Seite mit, wo die Teilbahnen (W) auf die gewünschte Länge geschnitten werden.

4. Rollenschneider, der einen Abwickelabschnitt, einen Schneidabschnitt und einen Wickelabschnitt mit einem zwei Wickelrollen (11, 12) aufweisenden Mehrstationen-Wickler aufweist, wobei der Rollenschneider eine Einrichtung zum Aufführen des Bahnendes von dem Abwickelabschnitt zu dem Wickelabschnitt und eine Einrichtung zum Trennen der Teilbahnen (W1, W2) für jede Wickelstation aufweist, die in Verbindung mit jeder Wickelrolle (11, 12), d.h. für die Teilbahnen (W1) der inneren Seite und für die Teilbahnen (W2) der äußeren Seite gebildet sind, wobei in dem Rollenschneider die Einrichtung zum Bahnaufführen eine Einrichtung zum Leiten der Teilbahnen zu den Wickelstationen auf den Wickelrollen (11, 12) aufweist und wobei wenigstens eine der Wickelrollen (11, 12) mit einer Saugeinrichtung versehen ist,
dadurch gekennzeichnet, dass
die seilartige Transporteinrichtung (15) zum Trennen der Teilbahnen (W1, W2) für jede Wickelstation derart verwendet wird, das jede zweite Teilbahn (W1; W2) zu einer Wickelwelle (11; 12) und den Wickelstationen in Verbindung mit dieser Wickelrolle (11; 12) geleitet wird, und die andere der Teilbahnen (W2; W1) zu einer anderen Wickelrolle (12; 11) und den Wickelstationen in Verbindung mit dieser Wickelrolle (12; 11) geleitet wird.

5. Rollenschneider nach Anspruch 4,
dadurch gekennzeichnet, dass
der Rollenschneider zwei seilartige Transporteinrichtungen (15, 16) aufweist, und dass eine seilartige Transporteinrichtung zum Führen der Teilbahnen (W1) der inneren Seite auf die Oberfläche der Wickelrolle (11) der inneren Seite vorgesehen ist und eine zum Leiten der Teilbahnen (W2) der äußeren Seite auf die Oberfläche der Wickelrolle (12) der äußeren Seite vorgesehen ist.

Revendications

1. Procédé de filage de nappe dans une coupeuse-bobineuse comprenant une section de désenroulage où un rouleau apparenté est désenroulé, une section de coupe, dans lequel une nappe de largeur intégrale (W) désenroulée du rouleau apparenté est coupée longitudinalement en nappes partielles (W1, W2) et une section d'enroulage où les nappes partielles (W1, W2) sont enroulées autour de noyaux ou de bobines correspondantes en rouleaux de nappe partiels, laquelle section d'enroulage comprend une enrouleuse multistations dans laquelle deux rouleaux d'enroulage (11, 12) sont utilisés, chacun assurant l'enroulage d'un ensemble de rouleaux de nappe partielle, dans lequel procédé la nappe est filée depuis la section de désenroulage via la section de coupe vers la section d'enroulage et dans lequel procédé, en aval de la section de coupe en filant, les nappes partielles (W1, W2) pour chaque station d'enroulage sont séparées de manière à ce que chacune des autres nappes partielles (W1), c'est-à-dire les nappes partielles (W1) de la face interne, soit

passée sur un rouleau d'enroulage (11), c'est-à-dire sur un rouleau d'enroulage (11) de la face interne, et que chacune des autres nappes partielles (W2), c'est-à-dire les nappes partielles (W2) de la face externe, soit passée sur un autre rouleau d'enroulage, c'est-à-dire sur un rouleau d'enroulage (12) de la face externe, **caractérisé en ce que**, dans le procédé de filage de nappe, la nappe (W) est passée en passant par un coin suiveur de nappe (T) dans la coupeuse-bobineuse, que, dans ce procédé, au moins un moyen de transfert de type corde est utilisé pour faire passer les nappes partielles vers les stations d'enroulage et que, dans ce procédé, les nappes partielles (W1) sont collées sur la surface d'au moins un des rouleaux d'enroulage (11, 12) et que, dans ce procédé, le coin suiveur de la nappe (T) soit relevé contre un rouleau d'enroulage (11) par un moyen de transfert de type corde (15), moyen de transfert de type corde (15) au-dessus duquel le coin suiveur de la nappe (T) tombe vers le bas lorsque le rouleau d'enroulage (11) pousse plus de nappe (W) depuis la section de désenroulement.

2. Procédé selon la revendication 1, **caractérisé en ce que**, dans le procédé partant de la section de désenroulement, la queue de nappe est filée sous forme d'un coin suiveur de nappe (T) et que le coin suiveur de nappe (T) est passé dans la section de coupe pendant que les lames de coupe ou moyens de coupe correspondants ne sont pas en position de coupe, que, au niveau d'une section d'enroulage, le coin suiveur de nappe (T) est passé au-dessus du moyen de transfert de type corde (15) et que le coin suiveur de nappe (T) est relevé par un moyen de transfert de type corde (15) et que le coin suiveur de nappe (T) est passé à vitesse accélérée pendant le levage, que le coin suiveur de la nappe (T) tombe vers le bas du moyen de transfert de type corde (15) et que la coupeuse-bobineuse est toujours à vitesse accélérée, que le moyen de transfert de type corde (15) est relevé et que les extrémités de coupe (B) des découpes longitudinales entre les nappes partielles (W) sont en-dessous du moyen de transfert de type corde (15), que la course de la coupeuse-bobineuse est stoppée, que les nappes partielles (W1) pour la face interne sont sectionnées, que le moyen de transfert de type corde (15) retourne en arrière et que le moyen de transfert de type corde (15) est descendu et qu'un moyen de transfert de type corde (15 ; 16) lève les nappes partielles (W2) de la face externe vers le rouleau d'enroulage (12) de la face externe.

3. Procédé selon la revendication 1, **caractérisé en ce que** ce procédé comprend les étapes exécutées dans l'ordre suivant :

- le coin suiveur de la nappe (T) est passé au-dessus du moyen de transfert de type corde (15) et
- le moyen de transfert de type corde (15) de la face interne relève le coin suiveur de la nappe (T) contre le rouleau d'enroulage (11) de la face interne, lequel rouleau d'enroulage (11) est équipé de moyens d'aspiration,
- le coin suiveur de la nappe (T) est avancé à vitesse accélérée jusqu'à la largeur intégrale de manière à ce que le coin suiveur de la nappe (T) passant au-dessus du moyen de transfert de type corde (15) soit tiré vers le bas par la gravité,
- lorsque la nappe (W) est droite, une coupe longitudinale de la nappe (W) en nappes partielles (W1, W2) débute,
- une fois que les débuts de coupe (B) dans la nappe (W) sont passés par le moyen de transfert de type corde (15), le moyen de transfert de type corde (15) est déplacé vers le point extrême de son mouvement par rapport au rouleau d'enroulage (11) de la face interne et la course de la nappe (W) s'arrête,
- les nappes partielles (W1) de la face interne sont coupées/sectionnées près du moyen de transfert de type corde (15) à la longueur désirée et le moyen de transfert de type corde (15) est descendu, ce qui a pour effet que les nappes partielles (W2) de la face externe vont descendre avec le moyen de transfert de type corde (15),
- un moyen de transfert de type corde (16) de la face externe prend les nappes partielles (W2) pour la face externe du rouleau d'enroulage (12) de la face externe où les nappes partielles (W) sont sectionnées à la longueur désirée.

4. Coupeuse-bobineuse, qui comprend une section de désenroulage, une section de coupe et une section d'enroulage, comprenant une enrouleuse multistations comportant deux rouleaux d'enroulage (11, 12), laquelle coupeuse-bobineuse comprend un moyen de filage de la queue de nappe depuis la section de désenroulage vers la section d'enroulage et un moyen de séparation des nappes partielles (W1, W2) pour chaque station d'enroulage formée en connexion avec chaque rouleau d'enroulage (11, 12), c'est-à-dire pour les nappes partielles (W1) de la face interne et pour les nappes partielles (W2) de la face externe, dans laquelle, dans la coupeuse-bobineuse, le moyen de filage de nappe comprend un moyen pour faire passer un coin suiveur de nappe (T) dans la coupeuse-bobineuse, que la coupeuse-bobineuse comprend au moins un moyen de transfert de type corde (15 ; 16) pour faire passer les nappes partielles vers les stations d'enroulage sur les rouleaux d'enroulage (11, 12) et qu'au moins un des rouleaux d'enroulage (11, 12) est équipé de moyens d'aspiration, **caractérisé en ce que** le moyen de

transfert de type corde (15) est utilisé pour la séparation de nappes partielles (W1, W2) pour chaque station d'enroulage, de sorte que chacune des autres nappes partielles (W1 ; W2) est passée vers un rouleau d'enroulage (11 ; 12) et que les stations d'enroulage, en connexion avec ce rouleau d'enroulage (11 ; 12) et que chacune des autres nappes partielles (W2 ; W1), est passée vers un autre rouleau d'enroulage (12 ; 11) et les stations d'enroulage en connexion avec ce rouleau d'enroulage (12 ; 11).

5. Coupeuse-bobineuse selon la revendication 4, **caractérisée en ce que** la coupeuse-bobineuse comprend deux moyens de transfert de type corde (15, 16) et qu'un moyen de transfert de type corde sert à faire passer les nappes partielles (W1) de la face interne sur la surface du rouleau d'enroulage (11) de la face interne et qu'un sert à faire passer les nappes partielles (W2) de la face externe sur la surface du rouleau d'enroulage (12) de la face externe.

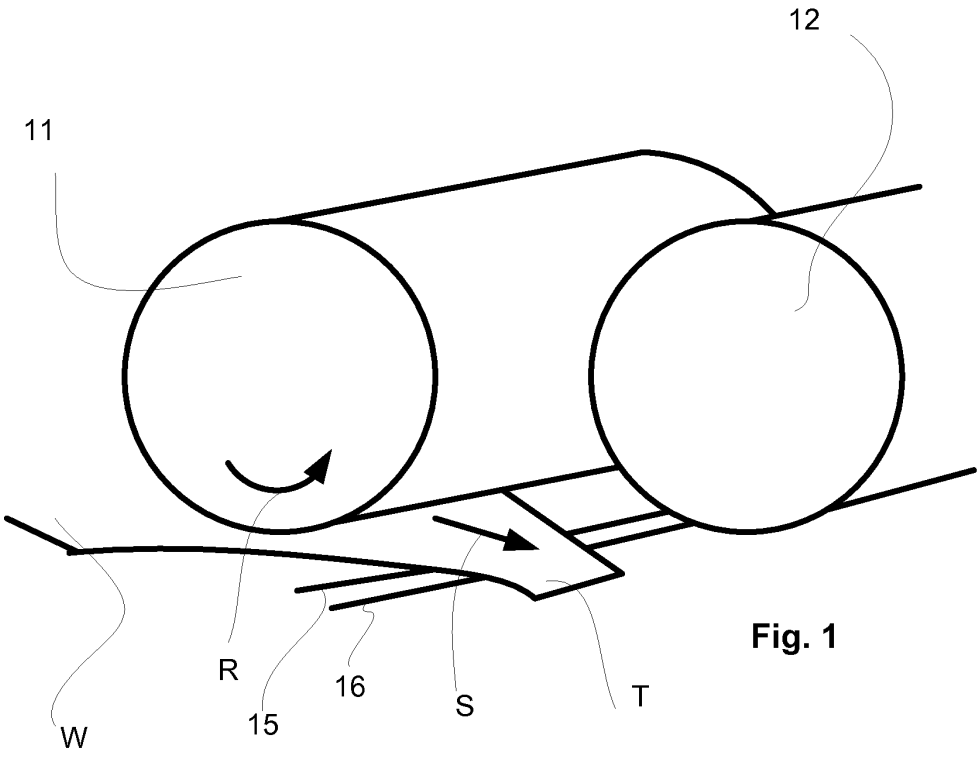


Fig. 1

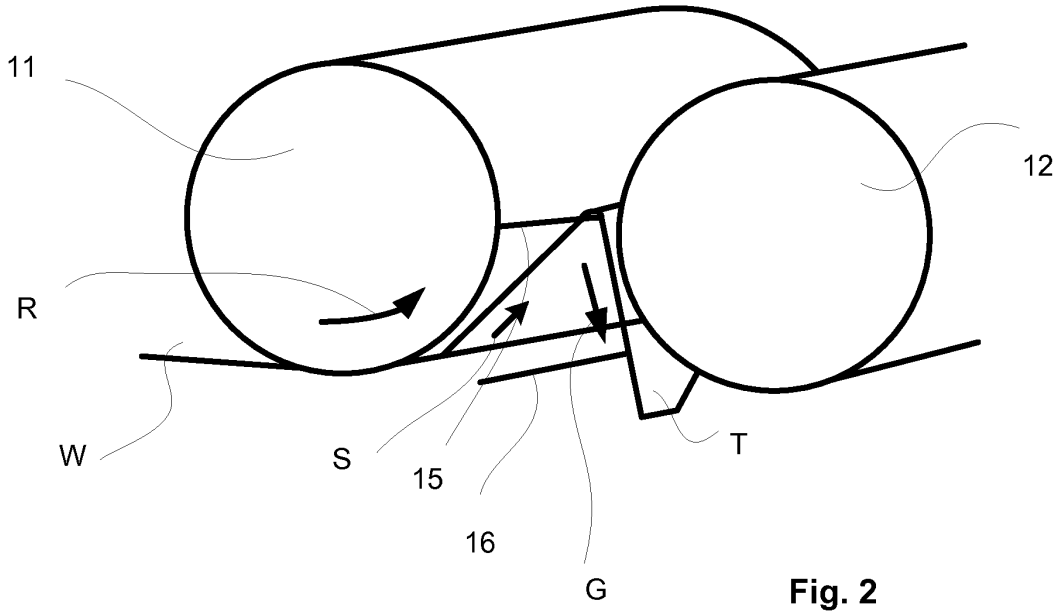


Fig. 2

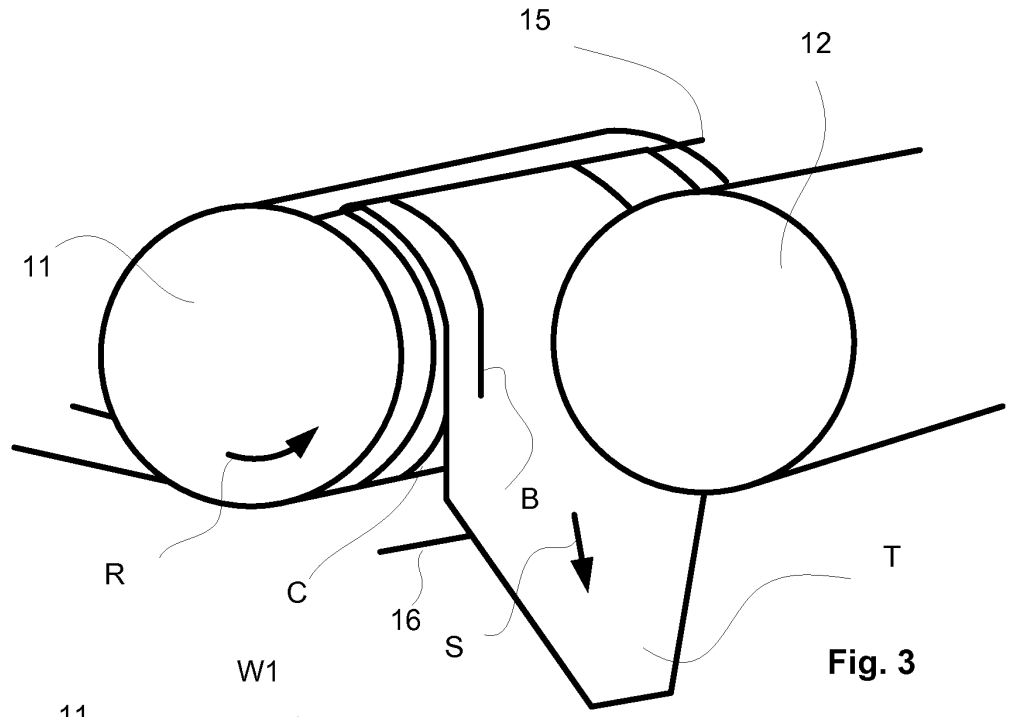


Fig. 3

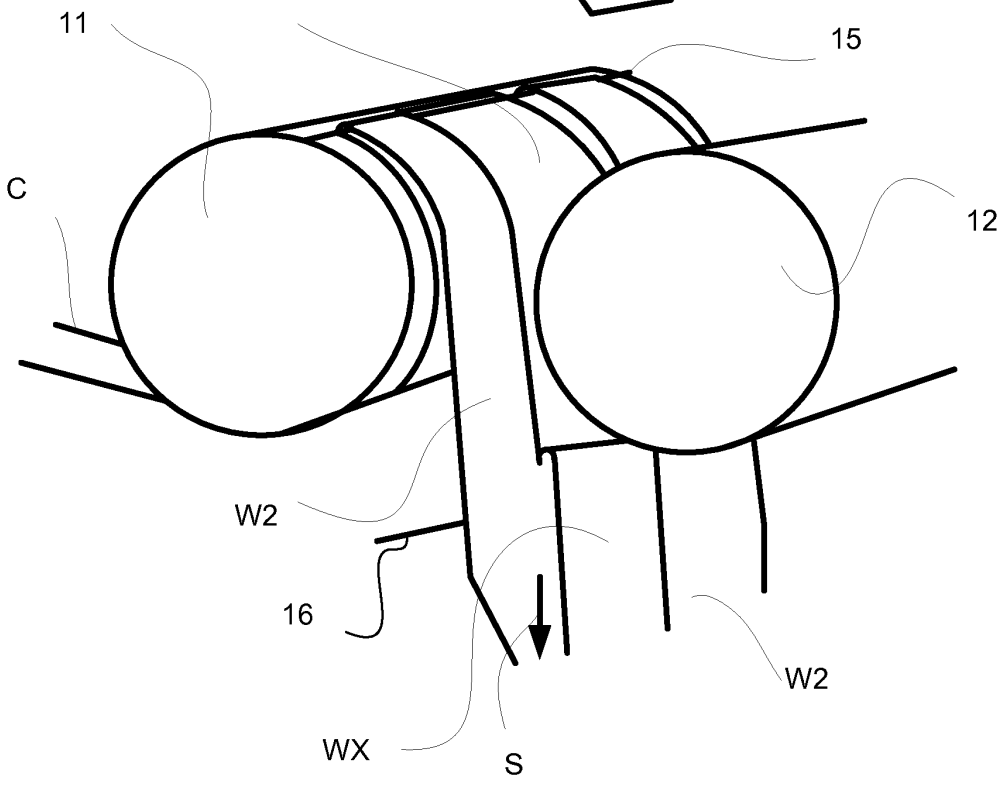


Fig. 4

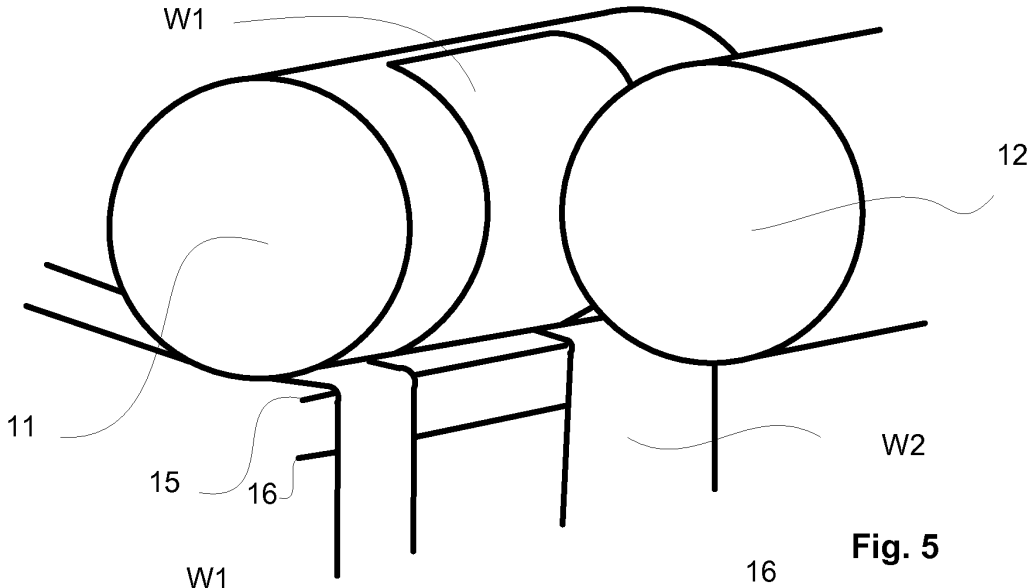


Fig. 5

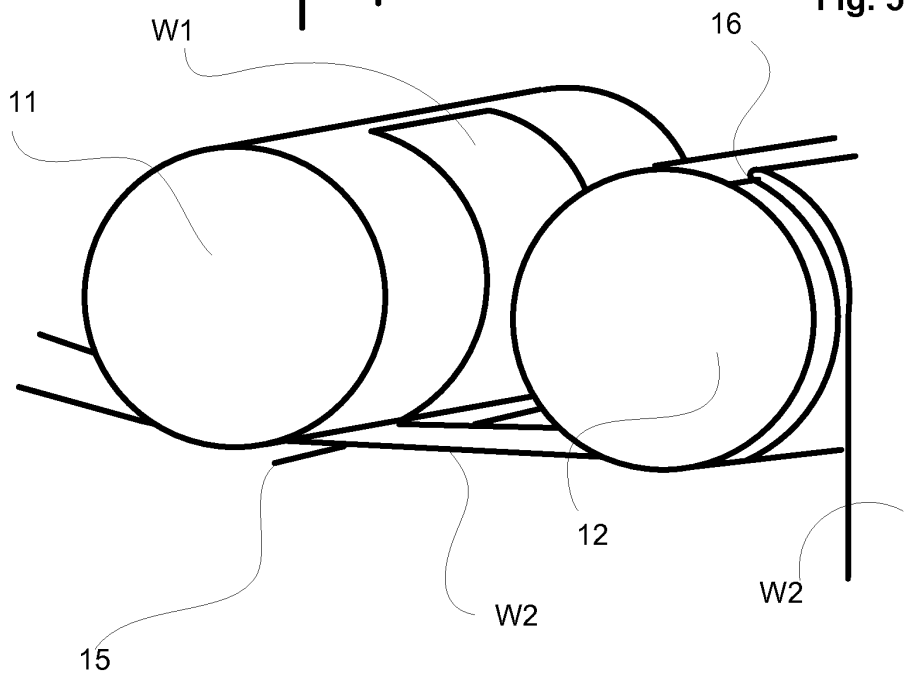


Fig. 6

REFERENCES CITED IN THE DESCRIPTION

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