(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 3 521 031 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
06.10.2021 Bulletin 2021/40

(51) Int Cl.:
B41F 30/04 *(2006.01)* ***B41F 13/193*** *(2006.01)*
B41N 10/04 *(2006.01)* ***B41N 6/00*** *(2006.01)*

(21) Application number: **19153210.0**

(22) Date of filing: **23.01.2019**

(54) **STRUCTURAL UNDERBLANKET UNIT FOR BLANKET CYLINDERS OF PRINTING MACHINES AND PROCESS FOR ADJUSTING A DISTANCE OF A BLANKET FROM A WALL OF A BLANKET CYLINDER**

STRUKTURELLE GUMMITUCHUNTERLAGENEINHEIT FÜR GUMMITUCHZYLINDER VON DRUCKMASCHINEN UND VERFAHREN ZUM EINSTELLEN DES ABSTANDS EINES GUMMITUCHS VON EINER WAND EINES GUMMITUCHZYLINDERS

UNITÉ STRUCTURELLE SOUS-BLANCHET POUR CYLINDRES PORTE-BLANCHETS DE MACHINES D'IMPRESSION ET PROCÉDÉ DE RÉGLAGE DE LA DISTANCE D'UN BLANCHET À UNE PAROI D'UN CYLINDRE PORTE-BLANCHET

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **31.01.2018 IT 201800002259**

(43) Date of publication of application:
07.08.2019 Bulletin 2019/32

(73) Proprietor: **Pavan Forniture Grafiche S.p.A.**
37062 Dossobuono di Villafranca (Verona) (IT)

(72) Inventor: **PAVAN, Luca**
37062 Dossobuono di Villafranca (IT)

(74) Representative: **Lissandrini, Marco**
Bugnion S.p.A.
Via Pancaldo 68
37138 Verona (IT)

(56) References cited:
WO-A1-2017/008922 **JP-A- 2003 305 967**

EP 3 521 031 B1

Description

TECHNICAL FIELD

[0001] The present invention relates to a structural underblanket unit for blanket cylinders of printing machines and falls within the sector of consumable spare parts, in particular for printing machines of the offset type.

[0002] The invention further regards a process for adjusting the distance of a printing blanket from a wall of a respective blanket cylinder of a printing machine.

PRIOR ART

[0003] Offset printing is an indirect printing process that is based on the phenomenon of chemical/physical repulsion between water (for the aluminium plate, which is hydrophilic) and greasy substances (for the lipophilic graphics present on the same, which attract the greasy binder constituting the ink).

[0004] It is an indirect printing process, since printing does not take place by directly transferring the ink from the printing plate to the print media, but rather by transferring the ink from the plate to an intermediate rubber sheet, commonly called a "printing blanket" or also simply a "blanket". The blanket has an outer layer that is generally made of rubber and is suitable for receiving the ink from the printing plate and transferring it to the print media. In other words, the printing plate does not come into direct contact with the media to be printed.

[0005] Offset printing takes place using three cylinders in contact with one another. In particular, the main components of an offset printing machine can be thus identified:

- a "sheet feeder" device that introduces the sheet to be printed (generally made of paper, cardboard or synthetic printing materials, or tinplate) into the machine, in the case of so-called "sheet-fed" machines; or else a device called a "paper unwinder" in reel-fed machines, or so-called "web offset" machines.

[0006] Then, in every printing section, there is:

- a set of ink distribution rollers and printing plate inkers;
- a plate (or printing plate) cylinder;
- a blanket cylinder;
- a counter-pressure cylinder opposite to the blanket cylinder and adapted to

provide a sufficient pressure based on the thickness of the printing medium.

[0007] In greater detail, the plate transfers the images onto the printing surface of the blanket, which thus receives the inked image already processed on the plate by the water/ink emulsion and transfers the print onto the medium to be printed as a result of the printing pressure exerted by the counter-pressure cylinder.

[0008] To ensure that the printing takes place correctly, it is necessary that the tangential speed of the (outer) printing surface of the blanket on the blanket cylinder is identical to the tangential speed of the printing plate on the plate cylinder.

[0009] Given that blankets of different thickness exist, it is possible that the tangential speed of the printing surface of the blanket is different from the required one when the blanket is positioned on the respective blanket cylinder.

[0010] In accordance with the prior art, it is known to compensate for the variation in tangential speed by introducing a spacer of calibrated thickness, commonly called a pack, which is positioned underneath the blanket and is thus interposed between the wall of the blanket cylinder and the blanket itself. In other words, the presence of the pack enables the radius up to the printing surface of the blanket to be varied when it is wrapped over the blanket cylinder. In still other words, the insertion of the pack enables the distance between the printing surface of the blanket and the rotation axis of the cylinder to be adjusted so as to obtain a desired tangential speed. According to the prior art, the pack comprises a rubber sheet and one or more calibrated cardboard sheets resting on top of it; the whole is formed into a "pack" between the back of the blanket and the wall of the blanket cylinder.

[0011] Generally, the overall thickness of the pack ranges from about 0.1 mm to as much as about 1.45 mm, thus making it possible to vary the entity of the "final" radius of the blanket cylinder, i.e. the radius measured starting from the rotation axis of the cylinder and up to the level of the (outer) printing surface of the blanket.

[0012] This type of pack, despite being relatively economical, has major drawbacks.

[0013] First of all, the cardboard sheets deteriorate in a short time. In fact, due to the pressures typical of the printing process, the cardboard sheets tend to become flattened, losing the ability to compensate for variations in the thickness of the blanket they are used for. Furthermore, the cardboard sheet gets wet, both because of the periodic process of washing the blanket, and because of the wetting of the printing plate necessary to carry out the printing process. As can be understood, the deterioration of the cardboard sheet is very disadvantageous, since it obliges the operator to stop the operation of the machine in order to replace them, with disadvantageous consequences in terms of machine productivity.

[0014] Secondly, when the thickness to be compensated for is great, typically over 1.2 mm, use is made of various cardboard sheets, positioned one on top of the other. In fact, in order to be able to have a sufficient range of thicknesses, even minimal, the cardboard sheets are generally produced and sold with very small thicknesses. In this way, in fact, it is possible to have cardboard sheets both for minimal compensations, and for substantial compensations (in the latter case it being sufficient, precisely, to position several cardboard sheets on top of one an-

other).

[0015] Disadvantageously, positioning several cardboard sheets on top of one another means adding together the dimensional tolerances of the individual cardboard sheets and thus increasing the overall dimensional imprecision of the pack. In fact, the "nominal" thickness of the cardboard sheet does not generally correspond to the "real" thickness thereof and therefore overlaying several cardboard sheets reveals to be detrimental for the correct calibration of the printing process.

[0016] A further disadvantage is represented by the fact that a pack obtained by overlaying a rubber sheet and one or more cardboard sheets necessarily results in a reciprocal sliding between the individual components, since the rubber sheet and the cardboard sheets are maintained in a reciprocal position solely because of the fact of being interposed between the blanket and the wall of the blanket cylinder. Disadvantageously, due to the strong mechanical stresses of the printing process and given the freedom of sliding between the rubber sheet and the cardboard sheets and between the cardboard sheets themselves, improper positioning of the pack can occur, with consequent imprecision on the surface of the blanket, which compromises the final quality of the printing process.

[0017] In accordance with the prior art, document DE2337962 regards a multilayer printing blanket provided with an outer layer suitable for receiving ink. Several reticular elements, disconnected from one another, similarly to the previously described cardboard sheets, can be positioned underneath the blanket. This solution as well, therefore, has the disadvantage of increasing the overall dimensional imprecision of the pack, since the "nominal" thickness of the individual reticular elements does not generally correspond to the "real" thickness thereof and therefore overlaying several elements reveals to be detrimental for the correct calibration of the printing process. Furthermore, the reciprocal sliding between the reticular elements is not eliminated.

[0018] Documents EP380262 and EP844100 disclose multilayer blankets provided with an outer layer suitable for receiving ink. These documents show printing blankets without underpacking.

[0019] Document WO2017/008922 shows a printing blanket fixed to an adhesive layer positioned over the blanket cylinder, so that the printing blanket adheres firmly to the cylinder. Consequently, between the printing blanket and the blanket cylinder no underpacking is present.

[0020] Document US5066537 shows a printing blanket that is directly fixed to the blanket cylinder.

[0021] Document JP2003305967 discloses a multilayer blanket disposed in a replaceable manner on a conventional multilayer underblanket, said underblanket comprising a layer made of compressible rubber, a layer made of fabric and a layer made of incompressible rubber being interposed between and bonded to said layers.

SUMMARY

[0022] In this context, one object of the present invention is to provide a structural underpacking, or "underblanket", unit for blanket cylinders of printing machines that is durable, which means that

[0023] it is capable of remaining stable and unaltered for a long period of time.

[0024] Another object of the present invention is to provide a structural underblanket unit that enables an easy and precise setting of the radius of the blanket cylinder.

[0025] A further object of the present invention is to propose a structural underblanket unit that is easy to to be manipulated and installed.

[0026] Another object of the present invention is to provide a process for adjusting a distance of a blanket from a wall of a blanket cylinder of a printing machine.

[0027] The embodiments of the present invention achieve these objects by providing a structural underblanket unit according to claim 1 and comprising three layers, or sheets, each having a predefined transversal thickness, and precisely: a first layer made of rubber, a second layer made of polyester and a third layer made of fabric. The layers are solidly bonded to one another so as to define a multilayer structural unit, or "pack", and configured so as to have an overall transversal thickness corresponding to the sum of the transversal thicknesses of the individual layers.

[0028] The order of bonding of the layers is arbitrary, i.e. the layers can be overlaid according to any sequence. In other words, the multilayer structural unit (or pack) according to the invention is produced in a single body. Furthermore, it should be noted that the structural unit thus defined has no printing blanket, so it is configured to be distinct and independently removable from a corresponding blanket with which it is adapted, in use, to cooperate. In still other words, the structural underblanket unit according to the invention is a component that is independent from the blanket and as such can be transported, moved, manipulated and/or replaced independently of the blanket itself. Advantageously, the pack according to the invention is extremely durable, lasting even up to twenty times longer than packs made in accordance with the prior art.

[0029] In a further advantageous manner, the pack according to the invention has high operating reliability, given that the layers, being solidly bonded to one another, do not undergo any reciprocal sliding. In this manner, the structural unit remains correctly positioned underneath the blanket, contributing to increase the quality and precision of the printing process. The second layer made of polyester is interposed between the first layer made of rubber and the third layer made of fabric and is bonded to them. The marked physiochemical affinity between polyester and fabric, on one hand, and between polyester and rubber, on the other, lends the pack high stability and durability. The second layer made of polyester, being bonded to the first layer made of rubber and the third

layer made of fabric, defines respective connection interfaces which are extremely robust and not subject to phenomena of delamination. In this manner, the structural unit according to the invention exhibits high resistance both to the mechanical stresses typical of the printing process and to the infiltration consequent upon the washing and wetting processes.

[0030] In a further advantageous manner, the fabric layer is able, when necessary, to lend the structural unit a great thickness as desired, and thus makes it possible to broaden the range of use of the pack. In addition, the rubber and polyester layers cooperate both to lend the structural unit adequate softness to facilitate the penetration of ink into the interstices of the printing media and to maintain the thickness over time. The polyester, in addition to being extremely durable in terms of retaining its thickness, strongly limits the structural deformations of the pack during the operation of the blanket cylinder, thus ensuring that a high dimensional precision of the entire structural unit is maintained.

[0031] In accordance with one embodiment of the invention, the first layer made of rubber is configured to rest upon a bottom surface, or back, of the blanket, whilst the third layer made of fabric is configured to rest upon a wall of a blanket cylinder, in such a way that the structural unit, in use, is interposed between the blanket and the wall of the cylinder.

[0032] In this manner, the structural underblanket unit according to the invention is advantageously and easily manipulatable and interchangeable. Furthermore, its interposition between the blanket and the blanket cylinder does not entail the use of glue or techniques similar to gluing. Advantageously, the mechanical interaction that is established between the blanket, structural unit and blanket cylinder prevents their reciprocal slipping during the printing phase.

[0033] According to one embodiment of the invention, the value of the overall transversal thickness of the structural unit (pack) is preferably comprised between about 0.55 mm and about 1.50 mm. In accordance with alternative embodiments, the transversal thickness of the pack can have values up to 2 mm or higher.

[0034] According to a further embodiment of the invention, the value of the transversal thickness of the first layer made of rubber is greater than about 0.1 mm. The value of the transversal thickness of the second layer made of polyester is preferably greater than about 0.1 mm.

[0035] In accordance with a further embodiment of the invention, the value of the transversal thickness of the third layer made of fabric is greater than about 0.15 mm.

[0036] The term fabric, in accordance with the invention, means a layer obtained by weaving, i.e. by weaving warp threads with weft threads. In accordance with the invention, the material of the threads could be any material and preferably selected from among cotton, synthetic material (e.g. nylon) or a cotton and synthetic blend.

[0037] In general, all the values of transversal thickness have a tolerance of ± 0.02 mm relative to a nominal value.

[0038] The invention achieves the specified objects also providing a process for adjusting a distance of a blanket from a wall of a blanket cylinder of a printing machine as defined in claim 8. In particular, this process enables an adjustment of the radial distance of the printing surface of the blanket from a wall of the cylinder itself, where the expression "radial distance" means the distance of said printing surface of the blanket measured along a radius of a cross section of the blanket cylinder.

[0039] The process comprises the steps of:

- preparing a first layer made of rubber and having a predefined transversal thickness;
- preparing a second layer made of polyester and having a predefined transversal thickness;
- preparing a third layer made of a fabric and having a predefined transversal thickness;
- solidly bonding the layers to one another according to any order, so as to obtain a multilayer structural unit, or pack, having an overall transversal thickness corresponding to the sum of the transversal thicknesses of said layers;
- placing the structural unit between the blanket and the wall of the blanket cylinder.

[0040] Advantageously, the process enables the radial distance to be adjusted in a rapid and long-lasting manner, given the high precision and dimensional stability of the structural unit. In a further advantageous manner, the adjustment process enables pack replacement interventions to be deferred over time, with beneficial effects on the productivity of the printing machine.

[0041] In accordance with the invention, the second layer made of polyester is bonded to the remaining first and second layers in such a way as to be interposed between them.

DESCRIPTION OF THE DRAWINGS

[0042] Additional features and advantages of the present invention will emerge more clearly from the indicative, and hence non-limiting, description of one or more embodiments of the invention, as illustrated in the appended drawings, in which:

- figure 1 illustrates a perspective view of a structural unit according to the invention;
- figure 2 illustrates a sectional view of a blanket cylinder provided with the structural unit shown in figure 1.

[0043] It must be understood that the drawings serve solely to clarify, in combination with the description, the inventive principles at the basis of the invention.

DETAILED DESCRIPTION

[0044] In the whole of the present description, the reference to "one embodiment" or similar expressions means that a particular feature, structure or characteristic described in connection with the embodiment is included in at least one embodiment of the present description. Appearances of the phrases "in one embodiment", and similar expressions may, albeit not necessarily, all refer to the same embodiment. Analogously, the use of the term "implementation" indicates an implementation having a particular feature, structure or characteristic described in connection with one or more embodiments of the present description; in the absence, however, of an explicit correlation indicating otherwise, an implementation can be associated with one or more embodiments.

[0045] With particular reference to figure 1, a structural unit, or pack, has been denoted in its entirety by the number 10.

[0046] The pack 10 comprises a first layer 11 made of rubber, preferably nitrile rubber, also known as Buna-N or Perbunan. Furthermore, the rubber preferably has a "shore A" hardness comprised between 71 and 77. The pack 10 further comprises a second layer 12 made of polyester and a third layer 13 made of fabric.

[0047] The layers 11, 12, 13 are solidly bonded to one another, so that the pack 10 is multilayer and has an overall transversal thickness S corresponding to the sum of the transversal thicknesses S11, S12, S13 of the aforesaid layers 11, 12, 13. In other words, the layers 11, 12,13 are bonded to one another in such a way as to define a single multilayer body, i.e. the above-mentioned pack 10.

[0048] The second layer 12 made of polyester is interposed between the first layer 11 made of rubber and the third layer 13 made of fabric and is bonded to them. The polyester layer 12, being an intermediate layer, acts as a connecting interface, as it has physiochemical characteristics making it easily connectable both to the first layer 11 made of rubber and the third layer 13 made of fabric.

[0049] With particular reference to figure 2, the first layer 11 made of rubber is configured to rest upon a bottom surface of a blanket 101, whereas the third layer 13 made of fabric is configured to rest upon a wall 102 of a blanket cylinder 100, so that the pack 10 is interposed, in use, between the blanket 101 and the wall 102 of the cylinder.

[0050] The blanket cylinder 100 rotates about an axis A according to known methods not further described.

[0051] The fabric used to make the third layer is selected from among cotton, a synthetic material (e.g. nylon) or a cotton and synthetic blend.

[0052] According to a preferred embodiment, the pack 10 has an overall transversal thickness S comprised between about 0.55 mm and about 1.45 mm. In accordance with alternative embodiments, the transversal thickness of the pack can have values up to 2 mm or higher.

[0053] According to a possible implementation, the value of the transversal thickness S11 of the first layer 11 made of rubber is greater than about 0.1 mm and preferably comprised between about 0.12 and about 0.72 mm.

[0054] In accordance with a further implementation, the second layer 12 made of polyester has a transversal thickness S12 greater than about 0.1 mm and preferably comprised between about 0.19 and about 0.35 mm.

[0055] According to another implementation, the value of the transversal thickness of the third layer 13 made of fabric is greater than about 0.15 mm and preferably comprised between about 0.2 and about 0.4 mm.

[0056] For each of the above transversal thicknesses S, S11, S12, S13, there is envisaged a tolerance of ± 0.02 mm relative to a nominal value.

[0057] A possible method for producing the pack 10 (figure 1) comprises the following steps:

- preparing a first layer made of rubber;
- preparing a second layer made of polyester, preferably having a TCA treatment on at least one of its surfaces, so as to facilitate adhesion with the rubber layer;
- preparing a third layer made of fabric;
- bonding the fabric layer to the polyester layer, for example by gluing or knitting;
- heating the rubber layer;
- applying the rubber layer on top of the polyester layer.

[0058] In accordance with an alternative implementation of the production method, it is envisaged that the order of execution of the steps of heating the rubber layer and applying it on the polyester layer is inverted, i.e., first the rubber layer is applied on the polyester and then it is heated. The heating preferably takes place with the passage of air or by irradiation with infrared radiation.

[0059] With particular reference to figure 2, a process for adjusting a distance of a printing blanket from a wall of a blanket cylinder of a printing machine will now be described.

[0060] In particular, the process relates to an offset printing machine provided with a so-called blanket cylinder provided with a blanket, generally made of rubber or other materials suitable for the printing process.

[0061] The process comprises the steps of:

i) preparing a first layer 11 made of rubber and having a predefined transversal thickness S11;
ii) preparing a second layer 12 made of polyester and having a predefined transversal thickness S12;
iii) preparing a third layer 13 made of a fabric and having a transversal predefined thickness S13;
iv) solidly bonding said layers 11, 12, 13 to one another according to any order in order to obtain a multilayer structural unit 10 having an overall transversal thickness S corresponding to the sum of the transversal thicknesses S11, S12, S13 of said layers;
v) placing the structural unit 10 between the blanket 101 and the wall 102 of the blanket cylinder 100.

[0062] The second layer 12 made of polyester is bonded to the remaining first and second layers 11, 13 in such a way as to be interposed between them.

[0063] In other words, the structural unit 10 is made in a single body and is interposed between the blanket 101 and the wall 102 of the blanket cylinder 100. In this manner, the structural unit 10 is easily removable from its positioning in order to be replaced in the event of wear or in the event that the thickness to be interposed between the blanket 101 and the blanket cylinder 100 needs to be changed.

Claims

1. A structural underblanket unit (10) for blanket cylinders (100) of printing machines, comprising:

   - a first layer (11) made of rubber and having a predefined transversal thickness (S11);
   - a second layer (12) made of polyester and having a predefined transversal thickness (S12);
   - a third layer (13) made of fabric and having a predefined transversal thickness (S13),

   said layers (11, 12, 13) being solidly bonded to one another so as to define a multilayer structural underblanket unit (10) having an overall transversal thickness (S) corresponding to the sum of the transversal thicknesses (S11, S12, S13) of said layers (11, 12, 13), the order of bonding of said first and third layers (11, 13) being arbitrary, wherein said structural underblanket unit (10) has no printing blanket (101), and is thus configured to be distinct and independently removable from a corresponding printing blanket (101) with which, in use, it is adapted to cooperate, wherein the second layer (12) made of polyester is interposed between and bonded to said first (11) and third (13) layers.

2. The structural underblanket unit (10) according to claim 1, wherein the first layer (11) made of rubber is configured to rest upon a bottom surface of a printing blanket (101), whilst the third layer (13) made of fabric is configured to rest upon a wall (102) of a blanket cylinder (100), in such a way that said structural underblanket unit (10), in use, is interposed between the printing blanket (101) and the wall (102) of the blanket cylinder (100).

3. The structural underblanket unit (10) according to any of the preceding claims, wherein the value of the overall transversal thickness (S) of the structural underblanket unit (10) is comprised between about 0.55 mm and about 1.45 mm.

4. The structural underblanket unit (10) according to any of the preceding claims, wherein the value of the transversal thickness (S11) of the first layer (11) made of rubber is greater than about 0.1 mm.

5. The structural underblanket unit (10) according to any of the preceding claims, wherein the value of the transversal thickness (S12) of the second layer (12) made of polyester is greater than about 0.1 mm.

6. The structural underblanket unit (10) according to any of the preceding claims, wherein the value of the transversal thickness (S13) of the third layer (13) made of fabric is greater than about 0.15 mm.

7. The structural underblanket unit (10) according to any of the preceding claims, wherein each of the transversal thicknesses (S11, S12, S13) has a tolerance of ± 0.02 mm relative to a nominal value.

8. A process for adjusting a distance of a printing blanket (101) from a wall (102) of a blanket cylinder (100) of a printing machine, comprising the steps of:

   - preparing a structural underblanket unit (10) according to any of the claims 1 to 7;
   - placing the structural underblanket unit (10) between the printing blanket (101) and the wall (102) of the blanket cylinder (100).

9. The process according to claim 8, further comprising the following steps:

   - applying the first layer (11) made of rubber to a bottom surface, or back, of the printing blanket (101);
   - applying the third layer (13) made of fabric on a wall (102) of a blanket cylinder (100).

10. A printing machine comprising a blanket cylinder (100) provided with a printing blanket (101), wherein the structural underblanket unit (10) according to any of the claims 1-7 is interposed between the printing blanket (101) and a wall (102) of the blanket cylinder (100).

Patentansprüche

1. Strukturelle Untertucheinheit (10) für Gummituchzylinder (100) von Druckmaschinen, umfassend:

   - eine erste Schicht (11), die aus Kautschuk hergestellt ist und eine vordefinierte transversale Stärke (S11) aufweist;
   - eine zweite Schicht (12), die aus Polyester hergestellt ist und eine vordefinierte transversale Stärke (S12) aufweist;
   - eine dritte Schicht (S13), die aus Stoff hergestellt ist und eine vordefinierte transversale Stär-

ke (S13) aufweist,

wobei die Schichten (11, 12, 13) fest miteinander verbunden sind, um eine mehrschichtige strukturelle Untertucheinheit (10) mit einer transversalen Gesamtstärke (S) zu definieren, die der Summe der transversalen Stärken (S11, S12, S13) der Schichten (11, 12, 13) entspricht, wobei die Verbindungsreihenfolge der ersten und dritten Schicht (11, 13) beliebig ist, wobei die strukturelle Untertucheinheit (10) kein Drucktuch (101) aufweist und daher dazu konfiguriert ist, sich von einem entsprechenden Drucktuch (101) zu unterscheiden und unabhängig davon entnehmbar zu sein, mit dem es im Gebrauch zum Zusammenwirken geeignet ist, wobei die zweite Schicht (12), die aus Polyester hergestellt ist, zwischen die erste (11) und dritte (13) Schicht eingelegt und damit verbunden ist.

2. Strukturelle Untertucheinheit (10) nach Anspruch 1, wobei die erste Schicht (11), die aus Kautschuk hergestellt ist, zum Ruhen auf einer unteren Oberfläche eines Drucktuchs (101) konfiguriert ist, während die dritte Schicht (13), die aus Stoff hergestellt ist, zum Ruhen auf einer Wand (102) eines Gummituchzylinders (100) konfiguriert ist, sodass die strukturelle Untertucheinheit (10) im Gebrauch zwischen dem Drucktuch (101) und der Wand (102) des Gummituchzylinders (100) eingelegt ist.

3. Strukturelle Untertucheinheit (10) nach einem der vorhergehenden Ansprüche, wobei der Wert der transversalen Gesamtstärke (S) der strukturellen Untertucheinheit (10) zwischen ungefähr 0,55 mm und ungefähr 1,45 mm gefasst ist.

4. Strukturelle Untertucheinheit (10) nach einem der vorhergehenden Ansprüche, wobei der Wert der transversalen Stärke (S11) der ersten Schicht (11), die aus Kautschuk hergestellt ist, größer als ungefähr 0,1 mm ist.

5. Strukturelle Untertucheinheit (10) nach einem der vorhergehenden Ansprüche, wobei der Wert der transversalen Stärke (S12) der zweiten Schicht (S2), die aus Polyester hergestellt ist, größer als ungefähr 0,1 mm ist.

6. Strukturelle Untertucheinheit (10) nach einem der vorhergehenden Ansprüche, wobei der Wert der transversalen Stärke (S13) der dritten Schicht (13), die aus Stoff hergestellt ist, größer als ungefähr 0,15 mm ist.

7. Strukturelle Untertucheinheit (10) nach einem der vorhergehenden Ansprüche, wobei jede der transversalen Stärken (S11, S12, S13) eine Toleranz von ± 0,02 mm bezüglich eines Nennwerts aufweist.

8. Verfahren zum Einstellen eines Abstands eines Drucktuchs (101) zu einer Wand (102) eines Gummituchzylinders (100), die folgenden Schritte umfassend:

- Bereitstellen einer strukturellen Untertucheinheit (10) nach einem der Ansprüche 1 bis 7;
- Anordnen der strukturellen Untertucheinheit (10) zwischen dem Drucktuch (101) und der Wand (102) des Gummituchzylinders (100).

9. Verfahren nach Anspruch 8, ferner die folgenden Schritte umfassend:

- Aufbringen der ersten Schicht (11), die aus Kautschuk hergestellt ist, auf eine untere Oberfläche, oder Rückseite, des Drucktuchs (101);
- Aufbringen der dritten Schicht (13), die aus Stoff hergestellt ist, auf eine Wand (102) des Gummituchzylinders (100).

10. Druckmaschine, umfassend einen Gummituchzylinder (100), der mit einem Drucktuch (101) versehen ist, wobei die strukturelle Untertucheinheit (10) nach einem der Ansprüche 1 bis 7 zwischen dem Drucktuch (101) und einer Wand (102) des Gummituchzylinders (100) eingelegt ist.

Revendications

1. Unité structurelle sous-blanchet (10) pour cylindres porte-blanchet (100) de machines d'impression, comprenant :

- une première couche (11) faite de caoutchouc et ayant une épaisseur transversale prédéfinie (S11) ;
- une deuxième couche (12) faite de polyester et ayant une épaisseur transversale prédéfinie (S12) ;
- une troisième couche (13) faite de tissu et ayant une épaisseur transversale prédéfinie (S13),

lesdites couches (11, 12, 13) étant solidement liées les unes aux autres de façon à définir une unité structurelle sous-blanchet multicouche (10) ayant une épaisseur transversale globale (S) correspondant à la somme des épaisseurs transversales (S11, S12, S13) desdites couches (11, 12, 13), l'ordre de liaison desdites première et troisième couches (11, 13) étant arbitraire, dans laquelle ladite unité structurelle sous-blanchet (10) n'a pas de blanchet d'impression (101), et est ainsi configurée pour être distincte et indépendamment amovible d'un blanchet d'impression (101) correspondant avec lequel, en utilisation, elle est adaptée pour coopérer,
dans laquelle la deuxième couche (12) faite de po-

lyester est interposée entre et liée auxdites première (11) et troisième (13) couches.

2. Unité structurelle sous-blanchet (10) selon la revendication 1, dans laquelle la première couche (11) faite de caoutchouc est configurée pour reposer sur une surface inférieure d'un blanchet d'impression (101), tandis que la troisième couche (13) faite de tissu est configurée pour reposer sur une paroi (102) d'un cylindre de blanchet (100), de telle sorte que ladite unité de sous-couverture structurelle (10), en utilisation, est interposée entre le blanchet d'impression (101) et la paroi (102) du cylindre de blanchet (100).

3. Unité structurelle sous-blanchet (10) selon l'une quelconque des revendications précédentes, dans laquelle la valeur de l'épaisseur transversale globale (S) de l'unité structurelle sous-blanchet (10) est comprise entre environ 0,55 mm et environ 1,45 mm.

4. Unité structurelle sous-blanchet (10) selon l'une quelconque des revendications précédentes, dans laquelle la valeur de l'épaisseur transversale (S11) de la première couche (11) en caoutchouc est supérieure à environ 0,1 mm.

5. Unité structurelle sous-blanchet (10) selon l'une quelconque des revendications précédentes, dans laquelle la valeur de l'épaisseur transversale (S12) de la deuxième couche (12) en polyester est supérieure à environ 0,1 mm.

6. Unité structurelle sous-blanchet (10) selon l'une quelconque des revendications précédentes, dans laquelle la valeur de l'épaisseur transversale (S13) de la troisième couche (13) en tissu est supérieure à environ 0,15 mm.

7. Unité structurelle sous-blanchet (10) selon l'une quelconque des revendications précédentes, dans laquelle chacune des épaisseurs transversales (S11, S12, S13) présente une tolérance de $\pm$0,02 mm par rapport à une valeur nominale.

8. Procédé de réglage d'une distance d'un blanchet d'impression (101) par rapport à une paroi (102) d'un cylindre porte-blanchet (100) d'une machine d'impression, comprenant les étapes :

- préparer une unité structurelle sous-blanchet (10) selon l'une quelconque des revendications 1 à 7 ;
- placer l'unité de sous-blanchet structurel (10) entre le blanchet d'impression (101) et la paroi (102) du cylindre porte-blanchet (100).

9. Procédé selon la revendication 8, comprenant en outre les étapes suivantes :

- appliquer la première couche (11) en caoutchouc sur une surface inférieure, ou de dos, du blanchet d'impression (101) ;
- appliquer la troisième couche (13) en tissu sur une paroi (102) d'un cylindre porte-blanchet (100).

10. Machine d'impression comprenant un cylindre porte-blanchet (100) muni d'un blanchet d'impression (101), dans laquelle l'unité structurelle sous-blanchet (10) selon l'une quelconque des revendications 1 à 7 est interposée entre le blanchet d'impression (101) et une paroi (102) du cylindre porte-blanchet (100).

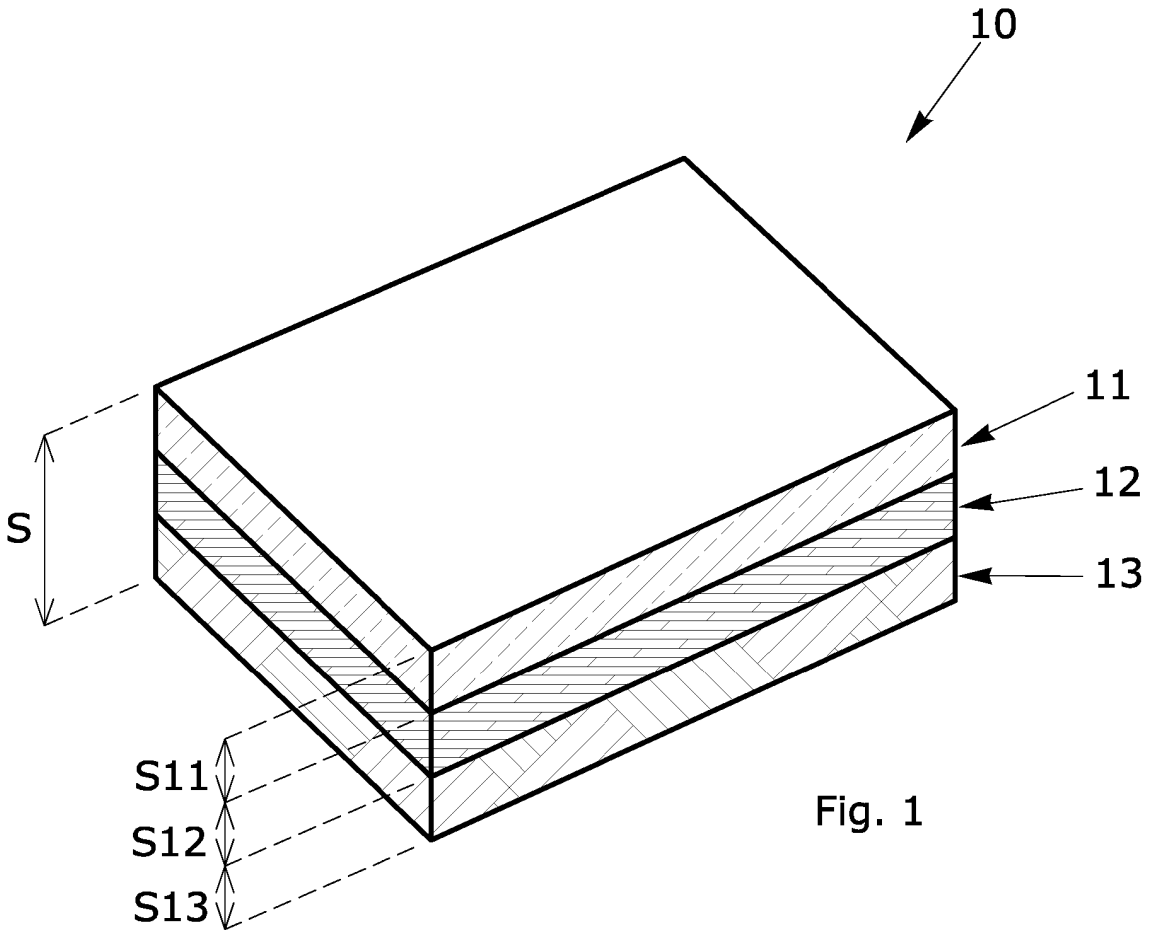

Fig. 1

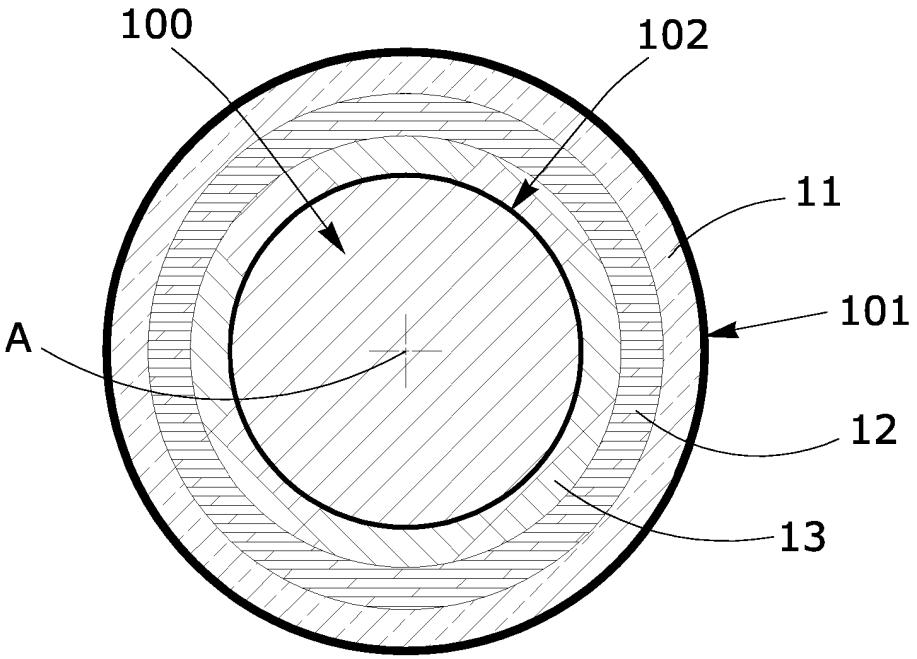

Fig. 2

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- DE 2337962 **[0017]**
- EP 380262 A **[0018]**
- EP 844100 A **[0018]**
- WO 2017008922 A **[0019]**
- US 5066537 A **[0020]**
- JP 2003305967 B **[0021]**