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(54) **A method for cleaning a blanket cylinder in a printing press**

Verfahren zum Reinigen eines Gummituchzylinders in einer Druckmachine

Procédé pour nettoyer un cylindre porte-blanchet dans une machine à imprimer

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(56) References cited:
EP-A- 0 423 093
EP-A- 0 618 074
DE-A- 3 908 536
DE-A- 4 401 275
US-A- 4 781 116

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Description

Technical Field

[0001] The present invention relates to a method for cleaning a blanket on a rotatable blanket cylinder in a printing press from printing ink, paper fibres, lint, and the like.

Background of the Invention

[0002] When a printing press has been running for some time, its blanket cylinder need to be cleaned. In order to ensure the requisite printing quality, cleaning may at least be necessary at each new printing batch in the press. Normally, the cleaning is manually performed by means of a solvent for the ink, possibly supplemented with a water-based medium for removing fibres and the like. The cleaning cannot normally be performed until the paper web has been cut and removed. After the cleaning the web must be re-threaded through the printing press, which is tedious and time-consuming. All-in-all the manual cleaning process is dirty, costly and time-consuming.

The Invention

[0003] A far better method performed without manual labour and without any need to remove the paper web is according to the invention characterized in that - after the supply of printing ink in the press has been disrupted - the moving paper web prior to contacting the blanket cylinder is supplied with a cleaning liquid in the form of a solvent for the ink used in the printing press and in that the plate cylinder in contact with the blanket cylinder is supplied with fountain solution, normally used at printing in the press.

[0004] Hereby, the supply sequence is such that the web is supplied with cleaning liquid at its passage of the blanket cylinder before it is supplied with fountain solution via the plate cylinder and the blanket cylinder, so that the web strength is not deteriorated by the water-based fountain solution.

[0005] By this process the cleaning is performed without any manual steps and without any need for web disruption. Rather, the web is essential for the cleaning, in that the cleaning liquid is supplied via the web (and is supplemented in the cleaning process by the fountain solution, normally used at printing) and in that the dirt is carried away by the web. Practical tests have shown that a very good cleaning result may be achieved in a relatively short time with a low loss of paper web.

[0006] The cleaning process may be performed intermittently or continuously. EP-A-618 074 and US-A-4 781 116 disclose a method according to the preamble of claim 1.

The Drawing

[0007] The invention will be described in further detail below reference being made to the accompanying drawing schematically illustrating relevant parts of a printing press embodying the invention.

Description of a Preferred Embodiment

[0008] In a printing press, normally an offset printing press, a paper web 1 to be printed is transferred in a direction indicated by means of an arrow, i e upwards in the drawing, through a nip 2 between a rotatable blanket cylinder 3 and a further cylinder 4, both having the same peripheral speed as the speed of the web 1. The right cylinder 4 may be a compression cylinder or a second blanket cylinder belonging to a printing unit not to be further described, whereas the printing unit to which the left blanket cylinder 3 belongs will be described. Other printing units in the printing press may have the same general design as the one shown and described or may have another design.

[0009] In contact with the blanket cylinder 3 is a rotatable plate cylinder 5. Printing ink is transferred to the plate cylinder 5 from an ink source 6 through an ink train 7, which does not form part of the invention and therefore is not described in further detail. However, the two end rollers 8 of the ink train 7 are specifically mentioned for a reason set out below.

[0010] For a proper printing process also a water-based fountain solution for the non-printing areas has to be transferred to the plate cylinder 5 from a spray dampener arrangement, normally a spray bar 9 via rollers 10, 11 and 11'.

[0011] The printing press described so far belongs to the state of the art. In operation thereof the blanket on the blanket cylinder 3 is soiled by ink, paper fibres, and lint, which in simplified terms may be said to be the addition of ink and paper fibres, and has to be cleaned at occasions.

[0012] The invention resides in a new method for blanket cleaning. For this purpose an applicator 12 is added to the printing press in the vicinity of the web 1 downstream of the nip 2. This applicator 12 is further described in applicant's copending Swedish Patent Application No 9504660-3 and has a roller 13, which is in contact with a cleaning liquid in the applicator and which may be brought into contact with the web 1, when cleaning is to be performed. The applicator 12, when not operational, is closed by a cover 14 preventing undesired matter from entering the applicator. The cleaning liquid in the applicator 12 is a solvent for the ink used in the printing press, normally an oil.

[0013] When blanket cleaning is desired, the press speed is decreased from the printing speed, and the supply of ink to the plate cylinder 5 is disrupted in that the two ink train rollers 8 are brought out of contact with the plate cylinder 5. Then the applicator roller 13, which

preferably is motor driven, is brought into contact with the web 1.

[0014] When the cleaning liquid has reached the nip 2, so that the paper web 1 is impregnated with cleaning liquid, which is not water-based, the spray bar 9 may start to operate and spray its water based-fountain solution, normally in greater quantities than during printing, on the roller 10 for further transfer to the plate cylinder 5 and the blanket cylinder 3. The reason for this sequence is that the paper web 1 may burst, if it is exposed to the water based fountain solution prior to the cleaning liquid, which may be oil-based.

[0015] By the combined influence of the cleaning liquid from the applicator 12 and the fountain solution from the spray bar 9 especially the blanket cylinder 3 but also the plate cylinder 5 will be cleaned from ink, paper fibres, and lint, and the dirt will be removed by the paper web 1, which is continuously moving through the nip 2 during the cleaning process.

[0016] The cleaning process may be intermittently or continouosly performed. Practical tests have shown that a cleaning performed as described during a short period of time results in a satisfactory cleaning. The scrap web length obtained is moderate. Further, there is no need to cut and re-thread the paper web before and after the cleaning process, respectively.

[0017] If the web used in the printing press has a width less than the full width of the blanket cylinder, the spray dampener arrangement is automatically turned-off on the printing area not used, for example 1/4, 3/4 or 1/2 web. This is done at the set-up for production by the printing personnel. This work is always done, which means that no additional set-up work is needed for this cleaning method.

Claims

1. A method of cleaning a blanket on a rotatable blanket cylinder (3) in a printing press from printing ink, paper fibres, lint, and the like, **characterized in that** - after the supply of printing ink in the press has been disrupted - a moving paper web (1) prior to contacting the blanket cylinder (3) is supplied with a cleaning liquid in the form of a solvent for the ink used in the printing press and **in that** a rotatable plate cylinder (5) in contact with the blanket cylinder is supplied with fountain solution, normally used at printing in the press.

2. A method according to claim 1, **characterized in that** the supply sequence is such that the web (1) is supplied with cleaning liquid at its passage of the blanket cylinder (3) before it is supplied with fountain solution via the plate cylinder (5) and the blanket cylinder.

3. A method according to any of the preceding claims, **characterized in that** a nip (2) is formed between the blanket cylinder (3) and a further cylinder (4), which is a blanket cylinder of a neighbouring printing. unit or a compression cylinder, and that the web (1) is transferred through this nip.

Patentansprüche

1. Verfahren zum Reinigen eines Drucktuchs auf einen drehbaren Druckzylinder (3) einer Druckerpresse von Druckerfarbe, Papierfasern, Lint und dergleichen, **dadurch gekennzeichnet, daß** - nach Aussetzen der Zufuhr von Druckerfarbe in der Presse - eine sich bewegende Papierbahn (1) vor der Berührung des Druckzylinders (3) mit einer Reinigungsflüssigkeit in Form eines Lösungsmittels für die in der Druckerpresse verwendete Druckerfarbe gespeist wird, und daß ein drehbarer Druckplattenzylinder (5), der in Berührung mit dem Druckzylinder steht, mit einem Feuchtmittel versehen wird, das normalerweise beim Drucken in der Presse verwendet wird.

2. Verfahren nach Anspruch 1, **dadurch gekennzeichnet, daß** die Zuführfolge derart angelegt ist, daß die Bahn (1) mit Reinigungsflüssigkeit bei ihrem Vorbeigang an dem Druckzylinder (3) gespeist wird, bevor sie über den Druckplattenzylinder (5) und den Druckzylinder mit Feuchtmittel versorgt wird.

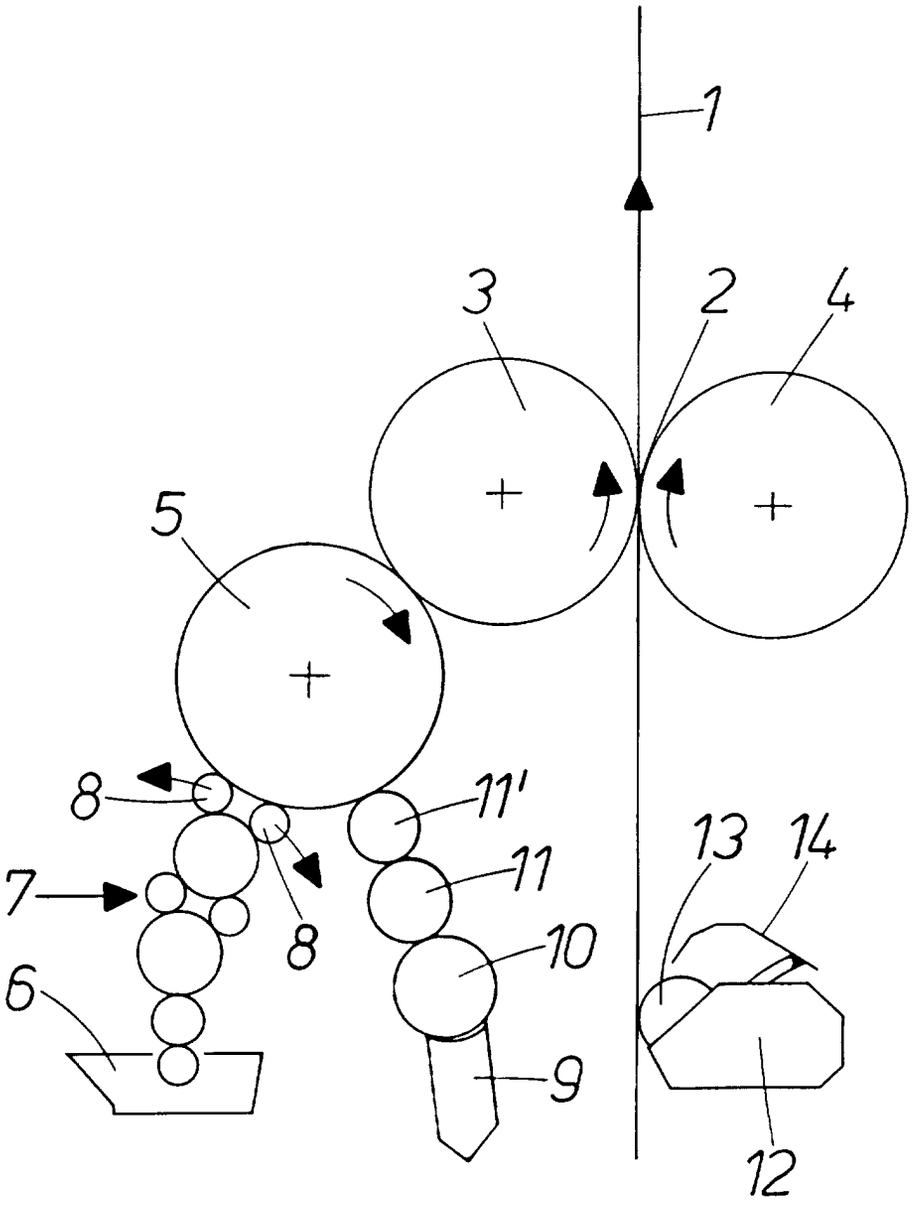
3. Verfahren nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, daß** zwischen dem Druckzylinder (3) und einem weiteren Zylinder (4), der ein Druckzylinder einer benachbarten Druckeinheit oder ein Andrückzylinder ist, ein Walzenspalt (2) gebildet ist, und daß die Bahn (1) durch diesen Walzenspalt geführt wird.

Revendications

1. Procédé de nettoyage d'un blanchet sur un cylindre porte-blanchet rotatif (3) dans une presse d'imprimerie pour imprimer une encre, des fibres de papier, de la ouate et analogue, **caractérisé en ce que** - après que l'alimentation en encre d'impression dans la presse a été interrompue - une bande de papier (1) en mouvement, avant d'entrer en contact avec le cylindre porte-blanchet (3), reçoit un liquide de nettoyage sous la forme d'un solvant pour l'encre utilisée dans la presse d'imprimerie et **en ce qu'**un cylindre porte-plaque rotatif (5) en contact avec le cylindre porte-blanchet reçoit une solution de mouillage normalement utilisée lors d'une impression dans la presse.

2. Procédé selon la revendication 1, **caractérisé en ce que** la séquence d'alimentation est telle que la bande (1) est alimentée en liquide de nettoyage à son passage du cylindre porte-blanchet (3) avant d'être alimentée en solution de mouillage par l'intermédiaire du cylindre porte-plaque (5) et du cylindre porte-blanchet.

3. Procédé selon l'une quelconque des revendications précédentes, **caractérisé en ce qu'**un resserrement (2) est formé entre le cylindre porte-blanchet (3) et un autre cylindre (4), qui est un cylindre porte-blanchet d'une unité d'impression voisine ou un cylindre de compression, et **en ce que** la bande (1) est transférée à travers ce resserrement.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