



(11) **EP 1 877 264 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:  
**04.11.2009 Bulletin 2009/45**

(21) Application number: **06733579.4**

(22) Date of filing: **03.05.2006**

(51) Int Cl.:  
**B42C 19/08 (2006.01) B42C 9/00 (2006.01)**

(86) International application number:  
**PCT/SK2006/000010**

(87) International publication number:  
**WO 2006/118551 (09.11.2006 Gazette 2006/45)**

(54) **A machine with single pair of pliers for making adhesive bookbinding with a book block pre feeder**

Klebebindemaschine mit einem einzigen Paar von Zangen zum Binden mit einem Vorförderer für Buchblöcke

Machine de reliure par adhésif avec une seule paire de pinces avec un appareil pour approvisionner les blocs de livre

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR**

(30) Priority: **04.05.2005 SK 50422005 U**

(43) Date of publication of application:  
**16.01.2008 Bulletin 2008/03**

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## Description

### Technical Field

**[0001]** Present technical solution concerns a machine with single pair of carrier pliers for making adhesive bookbinding with a book block pre-feeder.

### Background Art

**[0002]** At present, machines with single pair of carrier pliers for making adhesive bookbinding use the principle, according to which a book block is inserted into a pair of carrier pliers at the machine head, after inserting the book block the carrier pliers close and carry the book block to further machine stations, where successively the block is milled, adhesive is applied, the block is put into a cardboard cover, and finished books are discharged. Further insertion of a book block is possible only after the carrier pliers return and stop at the feeding station.

**[0003]** A disadvantage of this procedure consists in that during inserting the book block into the carrier pliers of the machine, which takes some time, the machine takes no other action. In this way, working cycle of the machine with single pair of carrier pliers is delayed by the time of inserting the book block into the carrier pliers.

**[0004]** DE 94 07 788 U1 discloses a machine with single pair of pliers for making adhesive bookbinding with clamping device for carrying the block of sheets through the station for application of glue.

**[0005]** EP-A2-0 275 521 discloses a end papering device for an adhesive binding machine for positioning and laterally bonding end sheets to the first and last folded sheets of a book block having a transfer channel for feeding the book block to a clamping jaw conveyor of the adhesive binding machine with separate end sheet channels along the transfer channel, to which end sheet channels feeding apparatuses are assigned for separating and feeding the end sheets into the channels. The device has transport elements for advancing the book block and the end sheets together into the clamping jaw conveyor and glue application discs for gluing the end sheets to the first and last folded sheets. The end sheet channels make a transition from an initial position, parallel to the transfer channel, into a continuously sloping end position. Arranged in the region of this end position are glue application discs which engage from below in the end sheet channels for applying a strip of glue to the regions of the end sheets near to the back which are deflected by the end sheet channels, the glue application discs have sloping application surfaces, corresponding to the end sheet channels, which application surfaces are in effective connection with contact surfaces of the end sheet channels. Furthermore, means are provided for pressing on and, if appropriate, means for advancing the end sheets to the book block.

**[0006]** US-A-6 099 244 discloses a paper supplying apparatus having a rotatable member around a horizon-

tal axis, a pair of clamp plates supported by this rotatable member mutually parallel and in face-to-face relationship for clamping a book block in between, and guide plates each attached to an associated one of these clamp plates, extending downward from the clamp plates to a lower edge part of the book block when the book block is held vertically. Such a paper supplying apparatus can be removably connected to a book binding machine by attaching a guide rail to an outer wall of the book binding machine and a runner to the paper supplying apparatus. The runner is slidably engageable with the guide rail, allowing the paper supplying apparatus to move along the guide rail selectably towards or away from the book binding machine.

**[0007]** DE 199 22 100 A1 discloses a binding process involving holding the book block with the spine downward in a clamping device and taking it into a holding device which moves horizontally at a right angle to the block plane. Glue is applied from below with the aid of a glue pad. The glue pad is pressurized so that the glue is applied to the spine of the block.

**[0008]** The objective of the present technical solution is to provide a more efficient system for making adhesive bookbinding using machines with single pair of carrier pliers.

### Disclosure of Technical Solution

**[0009]** The above disadvantages are eliminated by a machine with single pair of carrier pliers for making adhesive bookbinding with a book block pre-feeder according to the present technical solution, the subject-matter of which consists in that the book block pre-feeder consists of a pair of pressing pliers, auxiliary profiles and a flushing sheet, where the pressing pliers and auxiliary profiles are located in the feeding space of the machine with single pair of carrier pliers.

**[0010]** It is preferred, if the pressing pliers are flat, as it is necessary to locate them away from the space of carrier pliers.

**[0011]** The pre-feeder parts, namely the pair of pressing pliers and auxiliary profiles in the feeding station must be located away from the space of movement of the carrier pliers. It is preferred, if the pair of pressing pliers is located beneath a part of the feeding space reserved for movement of the carrier pliers, and the auxiliary profiles are located above a part of the feeding space reserved for movement of the carrier pliers.

**[0012]** Using the machine with single pair of carrier pliers for making adhesive bookbinding with a book block pre-feeder according to the present technical solution the time, when the pair of carrier pliers has left the feeding station with an inserted book block towards further stations and the feeding space has been left free, will be utilized. A new book block is inserted into the pressing pliers of the pre-feeder. The pressing pliers close and fix the block in its back part. At the same time, the block is supported by the auxiliary profiles to prevent its side de-

viation. The block, prepared in this way, waits for the returning carrier pliers, which immediately take over the new book block from the pressing pliers and straightaway continue moving to further stations.

**[0013]** The advantage of the present technical solution consists in that the time for inserting a new book block into the carrier pliers after they stop, is saved. This leads to an increase of the machine performance. The new book block may be inserted immediately after the carrier pliers have left with the preceding block. The new book block stays fixed in the pre-feeder and waits for the returning carrier pliers. Simultaneously, closing the book block in the pair of pressing pliers leads to better compression of the block in its back part, thus improving quality of its processing in further machine stations.

#### An overview of figures in the drawing

**[0014]** Fig. 1 shows a block diagram of a machine with single pair of carrier pliers for making adhesive bookbinding with a book block pre-feeder in a side view and Fig. 2 in a front view.

#### Examples of embodiments

##### Example 1

**[0015]** A machine with single pair of carrier pliers 5, 6 for making adhesive bookbinding with a book block pre-feeder according to the present technical solution has been made.

**[0016]** The pre-feeder is located in the feeding space of the machine. It consists of flat pressing pliers 4, auxiliary profiles 3 and a flushing sheet 2. The flat pressing pliers 4 are located in the feeding space of the machine, namely beneath a part of the feeding space, reserved for movement of the carrier pliers 5, 6. Auxiliary profiles 3 are located in the feeding space of the machine, namely above a part of the feeding space, reserved for movement of the carrier pliers 5, 6.

**[0017]** The new book block 1 is inserted into the pressing pliers 4 immediately after the carrier pliers 5, 6 leave with the preceding book block 1. Pressing pliers 4 close and fix the book block 1 in its back part. At the same time, the book block 1 is supported by the auxiliary profiles 3 to prevent side deviation of book block 1. The new book block 1 stays fixed in the pre-feeder and waits for the returning pair of carrier pliers 5, 6, which immediately take over the new book block 1 from the pressing pliers 4 and straightaway continue with their movement to further stations of the machine.

#### Industrial applicability

**[0018]** Industrial applicability of the present technical solution is obvious. The above principle may be utilized in the production of machines with single pair of carrier pliers for making adhesive bookbinding.

#### Claims

1. A machine with single pair of carrier pliers (5, 6) for making adhesive bookbinding with a book block pre-feeder, **characterized in that** the book block pre-feeder consists of pressing pliers (4), auxiliary profiles (3) and a flushing sheet (2), wherein the pressing pliers (4) and auxiliary profiles (3) are located in the feeding space of the machine with single pair of carrier pliers (5, 6), wherein the pressing pliers (4) are flat and located beneath a part of the feeding space, reserved for movement of the carrier pliers (5, 6) and wherein the auxiliary profiles (3) are located above a part of the feeding space, reserved for movement of the carrier pliers (5, 6).

#### Patentansprüche

1. Klebebindemaschine mit einem einzigen Paar von Nehmerzangen (5, 6) zum Binden mit einem Vorförderer für Buchblöcke, **dadurch gekennzeichnet, dass** der Vorförderer für Buchblöcke besteht aus Pressezangen (4), Hilfsprofile (3) und einer Senkenplatte (2), wobei Pressezangen (4) und Hilfsprofile (3) im Laderraum der Maschine mit einem einzigen Paar von Nehmerzangen (5, 6) lokalisiert sind, wobei Pressezangen (4) flach sind und unter einem Teil des Laderraum reserviert für Bewegung der Nehmerzangen (5, 6) lokalisiert sind, und wobei Hilfsprofile (3) über einem Teil des Laderraum reserviert für Bewegung der Nehmerzangen (5, 6) lokalisiert sind.

#### Revendications

1. Machine de reliure par adhésif avec une seule paire de pinces porteuses (5, 6) avec un appareil pour approvisionner les blocs de livre **caractérisé en ce que** l'appareil pour approvisionner les blocs de livre est composé de pinces à presser (4), de profils auxiliaires (3) et de tôle à dresser (2) où les pinces à presser (4) et les profils auxiliaires (3) sont placés dans l'espace de chargement de la machine avec une paire de pinces porteuses (5, 6) et où les pinces à presser (4) sont plates et sont placées sous une partie de l'espace de chargement destiné au mouvement de pinces porteuses (5,6) et où les profils auxiliaires (3) sont placés au-dessus d'une partie de l'espace de chargement destiné au mouvement de pinces porteuses (5,6).

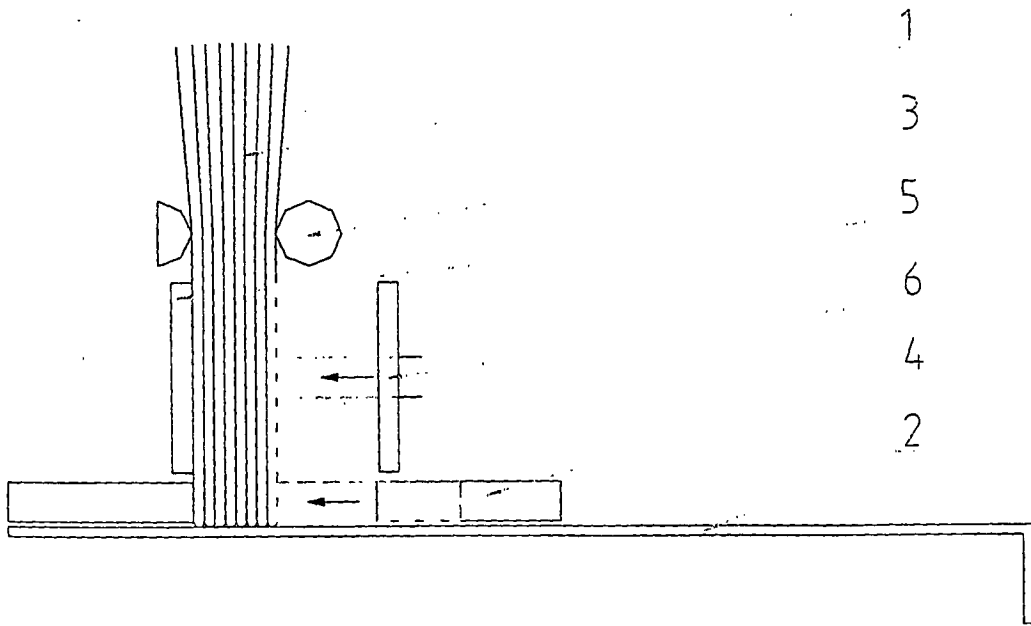


Fig.1

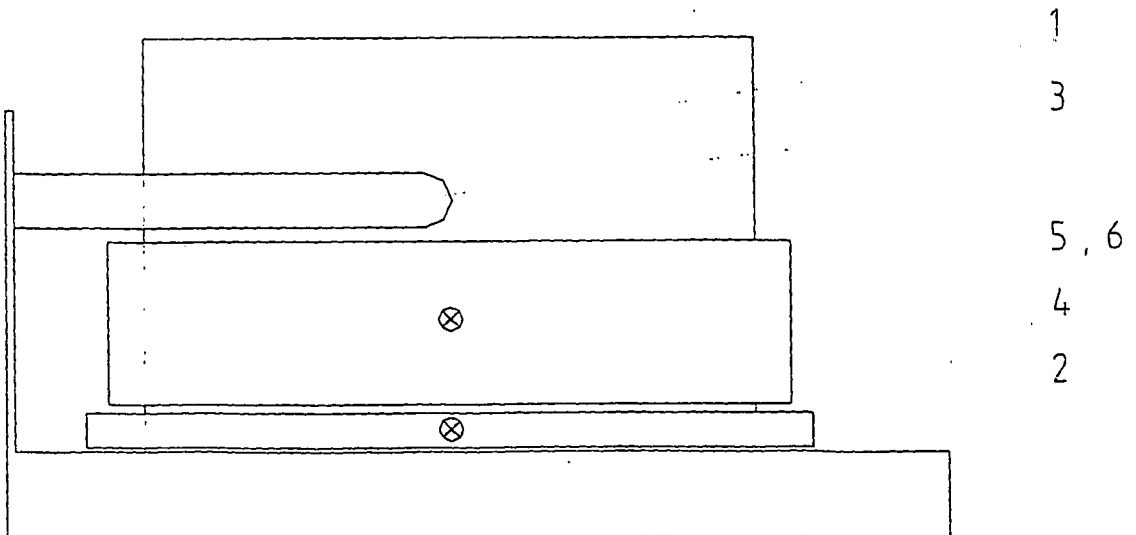


Fig.2

**REFERENCES CITED IN THE DESCRIPTION**

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