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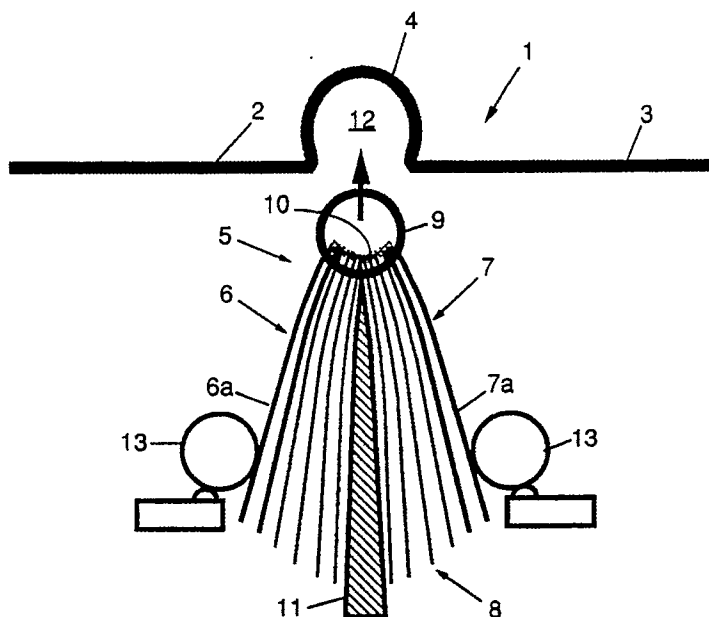
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(54) **Method of book binding.**

(57) The invention relates to a method of binding books using the Wire-O-® or a similar ring binding system (9), comprising centering a pack of leaves (8), which may or may not comprise end leaves (6,7), with a perforated back edge facing a ready length of Wire-O-® wire (9) or the like with the wire loops in open position, bending the loops through the perforations and, for joining the book section (5) thus formed to a cover (2,3) with continuous spine

(4), feeding the book section (5) in partly opened position to the underside of the widely opened cover (2,3,4), the front (6) and rear end leaf (7) being provided with glue before they are pressed against the insides of the front and rear covers (2,3). According to the invention, the method comprises fixating the back of the pack of leaves (6,7,8) by means of glueing (10) before providing the pack of leaves (6,7,8) with the ring binding (9).

FIG.1



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This invention relates to a method of binding books using the Wire-O-® or a similar ring binding system, comprising centering a pack of leaves, which may or may not comprise end leaves, with a perforated back edge facing a ready length of Wire-O-® wire or the like with the wire loops in open position, and bending the loops through the perforations.

In the Wire-O-® binding system, a wire is formed into narrow, curved loops at uniformly spaced intervals by means of forward and backward turns, with the loops being held at a fixed pitch by the intermediate wire portions. For forming a back binding it is sufficient for the narrow loops to be bent through perforations in a book section (the term book section as used herein refers to the inner part of a book, as distinct from the book covers), a calendar, etc. until the loops form a virtually closed circle. This system has many advantages. In the first place, the binding can be effected quickly. Further, the book section can be opened flat and laid out completely flat. It is also possible to turn over parts of the book section into back-to-back arrangement, with the sheets remaining securely interconnected in perfect register. Hard covers, sheets of different size and different materials, such as envelopes, protective folding sheets of transparent plastics, tab sheets, suspension brackets and the like can be included in the binding, according to the same principle. All operations described hereinabove can be performed mechanically.

Drawbacks of this binding system are, among others, that it does not permit marking of the spine by means of printing or by attaching a label, that books bound in this way cannot easily be juxtaposed on edge in surface-to-surface engagement or stacked levelly and that in the event of the rings in the spine being flattened, the book cannot be properly used anymore.

When the covers are provided with a continuous spine, no mechanical manufacture of a high-quality product is possible.

The existing mechanical binding technique in the case of conventional sewn bindings comprises moving a pack of leaves disposed astride a book blade and joined at the back by a gauze but not yet provided with a cover, toward the underside of a cover opened at a 180° angle. During approaching of the cover, at least the end leaves of the pack are provided with glue and adhered to the underside of the front and rear cover.

When this technique is applied to a pack of leaves bound by a Wire-O-® binding, problems arise, since the Wire-O-® ring binding does not provide a rigid connection between the leaves and end leaves and it is difficult to accurately position the end leaves against the insides of the front and

rear cover.

The invention is based on the insight that this drawback can be avoided by fixating the back of the pack of leaves by means of glueing before providing the pack of leaves with the Wire-O-® ring binding.

By using this technique traditionally known from conventional book binding, wherein sewn signatures are fixated by adhering a gauze strip - which technique, however, is alien to the Wire-O-® technique, since in the latter the rings take over the function of the back binding - a stabilization of the book section, to be subsequently provided with a ring binding, is accomplished so that in mechanical processing, a perfect centration and positioning of the book section relative to the ready cover is ensured. The glueing of the back has a function only during the binding of the book. When, as is customary in ring-bound books, an opened book is laid out flat or even opened at a 360° angle, the glueing of the back will break, but that has become irrelevant by then.

In further elaboration of the invention, the book section is provided on either side of the pack of leaves with an end leaf that is folded double. This has the following advantage.

In the case of a book section that is held together exclusively by a ring binding and a cover with a continuous spine, the book section and the cover are exclusively connected to each other through the ring binding and the perforations of the end leaves connected to the covers. In the first place this connection is not strong. Indeed, in the event of rough handling of such a book (school books, cook books, memorandum books for day-to-day use, and note-books), the book section will soon come off the cover or at least end up suspended crookedly in the cover.

Further, the appearance of a book with a book section loosely mounted in the cover is considerably less appealing than that of a conventionally bound book.

By virtue of the fact that in accordance with the invention the covers are connected to the book section via the double-folded end leaves and the glued back of the book section, the book section is at all times held securely in centered position within the cover. The appearance of the book resembles much more that of a conventionally bound book, both in the closed and in opened position. This holds in particular when the spine is rounded in conformity with the contour of the ring binding. The book thus obtained combines the solid appearance and the stability of a conventionally bound book with the advantages inherent to the Wire-O-® system.

To clarify the invention, by way of example, one embodiment of the book binding method will

now be discussed, with reference to the accompanying drawings, in which:

Fig. 1 is a schematic end view of an intermediate phase of the book binding method; and

Figs. 2 and 3 show the subsequent phases of the method.

Referring to the drawings, there is shown a cover 1 opened at a 180° angle, comprising a front cover 2, a rear cover 3 and a round spine 4. A book section 5 comprises double-folded front and rear end leaves 6 and 7, a pack of leaves 8 and a ring binding 9. According to the invention, the back of the assembly of end leaves 6,7 and the pack of leaves 8 is fixated by a glueing 10. In the intermediate phase of the book binding method shown in Fig. 1, the book section 6-10, supported astride a blade 11, is fed to the underside of the opened cover 1. During the upward movement according to arrow 12, the outer halves 6a and 7a brush along glue rollers 13. The glued outer surfaces of the outer halves 6a and 7a of the end leaves 6 and 7, upon further upward movement of the blade 11, are pressed against the insides of the cover members 2 and 3 by means of hold-down rollers 14. The assembly is moved off the blade 11 (Fig. 2), the finished book is snapped shut and handled further.

4. A book manufactured using the method according to any one of the preceding claims.

Claims

1. A method of binding books using the Wire-O-® or a similar ring binding system, comprising centering a pack of leaves, which may or may not comprise end leaves, with a perforated back edge facing a ready length of Wire-O-® wire or the like with the wire loops in open position, bending the loops through the perforations and, for joining the book section thus formed to a cover with continuous spine, feeding the book section in partly opened position to the underside of the widely opened cover, the front and rear end leaf being provided with glue before they are pressed against the insides of the front and rear covers, characterized by fixating the back of the pack of leaves (6,7,8) by means of glueing (10) before providing the pack of leaves (6,7,8) with the ring binding (9).
2. A method according to claim 1, characterized in that use is made of a book section comprising on both sides of the pack of leaves (8) an end leaf (6,7) that has been folded double.
3. A method according to claim 1 or 2, characterized in that the spine (4) of the cover (1) is rounded so as to fit around the ring binding (9).

FIG.3

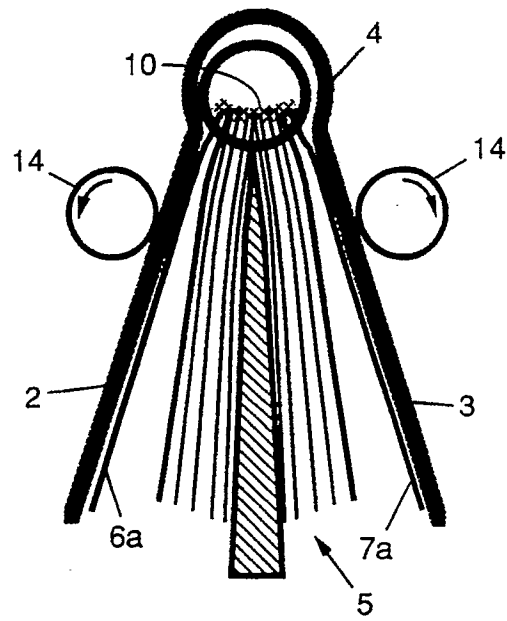


FIG.2

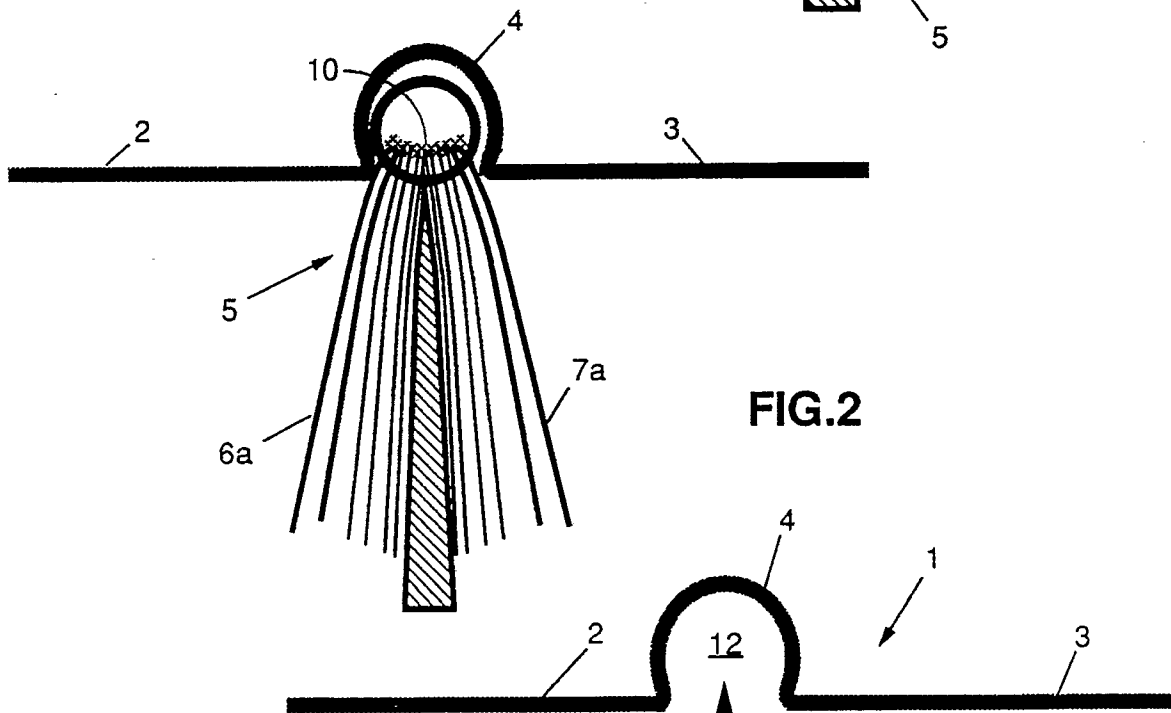
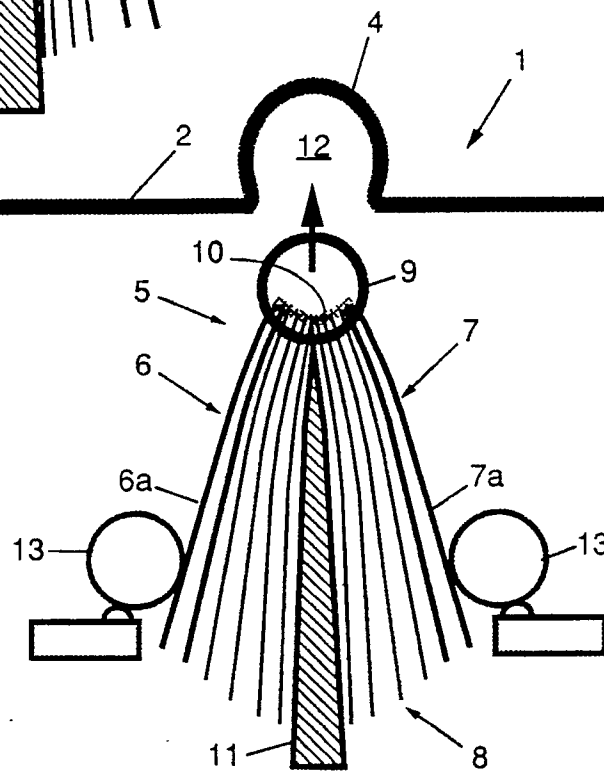


FIG.1





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EUROPEAN SEARCH REPORT

Application Number

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-3 044 804 (THIEL) * the whole document * -----	1	B 42 B 5/10
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B 42 B B 42 C
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of search 09 July 91	Examiner EVANS A.J.
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