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(54) Cover blank

(57) A cover blank 1) and a method for fabricating a cover blank (1) consisting of a board with the thickness 7 and a size corresponding to a completed binder's front cover, spine and rear cover, the outside (2) of the cover blank (1) being provided with four parallel grooves (7, 8, 9, 10), two of said grooves constituting opening grooves (7, 8) and the other two constituting mechanism grooves (9,10), the inside (3) of the cover blank (1) is supplied with two parallel spine grooves (11, 12), a binder is manufactured from a cover blank, the cover blank (1) being bilaterally lined, at last one countersunk label area (13, 14) is formed by the stamping of a binder cover (4, 5) and/or binder spine and the mechanism is mounted at the intended site, thereby forming a completed binder.

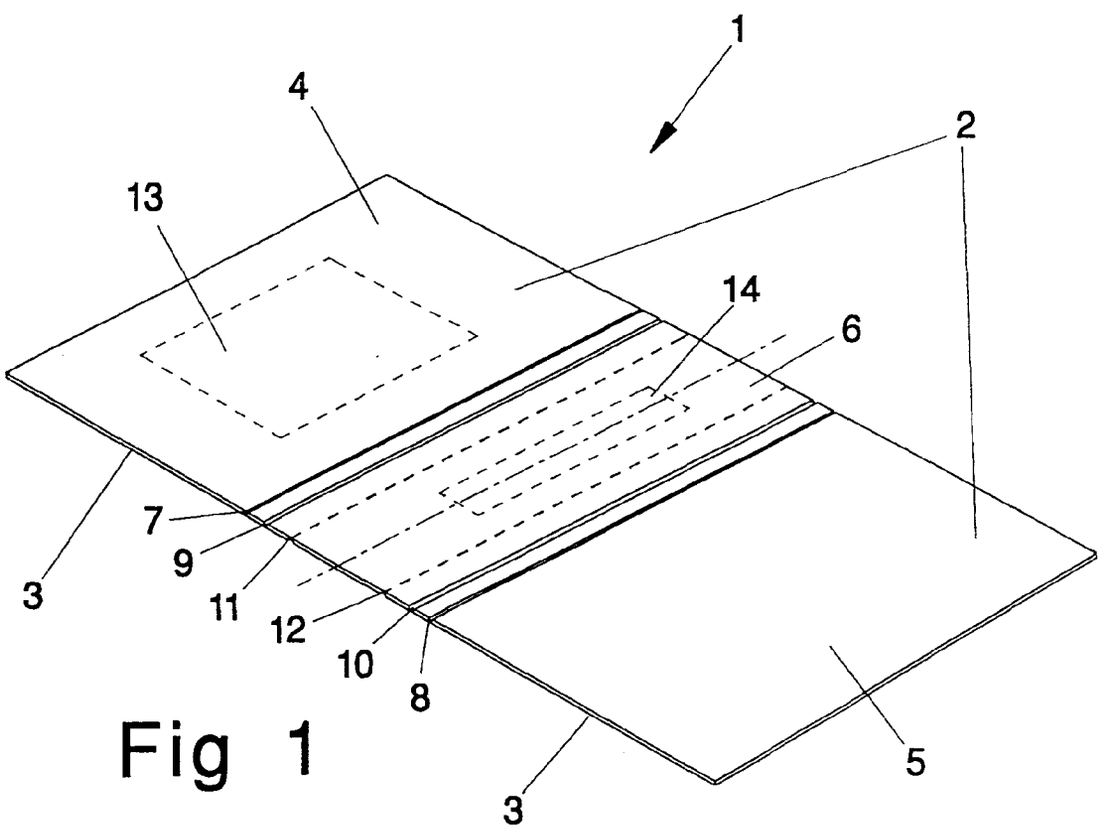

Fig 1

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Description

FIELD OF THE INVENTION

The present invention relates to the fields of binder manufacturing and binder types in which the binder is arranged with a plurality of fold grooves to achieve a binder spine and permit binder opening in a read position and a leaf removal/ insertion position.

The invention further relates to completed binders provided with user-specific identification areas on the binder spine and a user-specific identification area on the binder front or rear cover.

BACKGROUND OF THE INVENTION

Loose-leaf binders with provisions for a reading position and a leaf-removal/insertion position have previously been made of e.g. some kind of plastic material, mainly PVC, whereby the binders' fold grooves are defined for these positions by welds, made during the fabrication process, in the plastic materials used to make the binder.

Moreover, these binders were provided during fabrication with pockets for user-specific identifications on the binder spine and on the binder's front cover, said pockets being achieved by welding during the fabrication process of a transparent plastic sheet to the plastic materials, used in binder construction, on the binder spine and cover.

The fabrication process for these prior art loose-leaf binders begins when cardboard sheets, used for stiffening the binder's front and rear covers, of the appropriate size are deposited on a first flat, plastic laminate. Next to them and at an appropriate distance, a cardboard strip for the front and a cardboard strip for the rear, to which the binder mechanism is subsequently riveted, are placed. A cardboard strip for stiffening the binder spine is also deposited, leaving an unstiffened area between the spine strip and the mechanism strip and achieving a fold area for the binder's leaf insertion/removal position.

An additional plastic laminate of the same kind is then deposited onto the first plastic laminate and, accordingly, onto its stiffening material, whereupon transparent plastic sheets are then placed at the locations at which pockets are desired, preferably on the spine and binder cover, followed by a welding operation is performed around the periphery of the binder and between the cardboard stiffeners to achieve fold positions. The final stage in fabrication entails the riveting of the fork mechanism, thereby completing binder fabrication.

Users can prepare the contents of and labels for their binders by copying, four-colour printing or computer printout operations.

From the handling point of view, the described plastic binding is not very appealing, since sharp edges develop when the plastic laminate is welded. Moreover, the use and fabrication of these plastic binders are not very friendly to the environment nor suitable for recycling.

OBJECTIVE OF THE INVENTION

The objective of the invention is to achieve a new type of loose-leaf binder which relates, in respect to the choice of materials, to the book-binding techniques of yesteryear but which, in production respects, is suitable for the rational manufacturing methods of today. This is achieved by the use of a cover blank for manufacturing the binder according to the present patent claims.

Another objective of the present invention is to achieve an environmentally low-impact binder of the previously described known type which can also be provided with user-specific identification labels on the binder's spine and a user-specific identification area on the binder's front cover and/or possibly on its rear cover. This is achieved by manufacturing employing a manufacturing method according to the patent claims below.

SUMMARY OF THE INVENTION

The present invention concerns a cover blank, consisting of a cardboard sheet of the appropriate thickness and a size corresponding to a completed binder's front cover, spine and rear cover, corresponding to the entire outer surface area of a completed binder, whereby one side of the cover blank is provided with four parallel grooves, i.e. creases, channels etc., two of the grooves serving as opening grooves and the other two serving as mechanism grooves, and the other side of the cover blank is provided with two parallel spine grooves. Each of the grooves is devised so folding a completed binder at the grooves takes place at specific angles. Thus, cover blank's opening grooves have a specific profile and depth to give the groove the desired angle. This also applies to the mechanism grooves and the spine grooves.

The invention also relates to the fabrication of a binder from a cover blank according to the invention in which the cover blank is bilaterally lined, whereupon the mechanism is attached at the intended site to form a functionally complete binder.

Alternately, the binder can be fabricated from a cover blank according to the invention in which the cover blank is bilaterally lined, whereupon at least one label area is created by the stamping of a countersunk attachment area into the side and/or spine of the binder, the mechanism thereupon being attached at the intended site to form a functionally complete binder.

The invention additionally relates to a method for fabricating a cover blank from cardboard of appropriate thickness and size, corresponding to a completed binder's front cover, spine and rear cover, whereby one side of the cover blank is provided with four parallel grooves, two of the grooves serving as opening grooves and the other two serving as mechanism grooves, and the other

side of the cover blank is provided with two parallel spine grooves which define the width of the binder spine and the binder's spine angles.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described in greater detail, using reference designations, in the following FIGURES:

FIG. 1 is a perspective view of a cover blank for a binder according to the present invention;

FIG. 2 is a lateral close-up view of part of the cover blank according to FIG. 1;

FIG. 3 is an enlarged view of an embodiment of the cover blank according to the invention.

DESCRIPTION OF THE INVENTION

The starting point in fabrication of a binder is referred to as a cover blank 1. The cover blank is made from a rectangular sheet of cardboard of thickness t in which t = 1.5 to 4.0 mm, preferably 2.0 mm. The length of the cardboard is selected to correspond to the completed binder's entire cover length, i.e. the binder's front cover, binder spine and rear cover, the cover length being governed by whether the binder has a full-length or half-length spine and by the width of the attachment area for the fork mechanism. The width of the board is also selected to correspond to the height of the completed binder.

Henceforth, one whole side of the cover blank 1 shall be referred to as the outside 2, and all of its other side shall be referred to as the inside 3. The cover blank 1 is further envisaged as being divided along a line of symmetry (shown as a dash-dotted line in FIG. 1) in a front cover 4 and a rear cover 5. Here, the line of symmetry runs along the middle of the cover blank's spine 6.

The outside 2 of the cardboard is further provided with four parallel grooves, two of said grooves serving as a front opening groove 7 and a rear opening groove 8, the other two grooves serving as a front mechanism groove 9 and a rear mechanism groove 10.

Here, the front opening groove 7 and the front mechanism groove 9 are adjacent to each other on the outside 2 of the front cover 4, the mechanism groove 9 being located closest to the spine 6.

The inside 3 of the cardboard is further provided with two parallel spine grooves, i.e. a front spine groove 11 and a rear spine groove 12, located on either side of the line of symmetry, which define the fold lines for the width of the binder spine and the cover angles.

The purpose of these grooves is to allow folding at the grooves at specific angles, the cover blank being arranged so the profile and profile depth of the opening grooves 7,8 have shapes allowing a bilaterally lined cover blank to fold at the opening grooves 7, 8 at an angle a in which $45° < \alpha < 90°$. The cover blank is also arranged so the profile and profile depth of the mechanism grooves 9,10 have shapes allowing a bilaterally lined cover blank to fold at the mechanism grooves 9,10 at an angle β in which $0° < \beta < 45°$. Moreover, the cover blank is arranged so the profile and profile depth of the spine grooves 11, 12 have shapes allowing a bilaterally lined cover blank 1 to fold at the spine grooves 11,12 at an angle γ in which $80° < \gamma < 100°$.

FIG. 1 indicates with dashed lines the way in which the bilaterally lined cover blank, after lining, is provided with an stamped front identification area 13 and a spine identification area 14. Stamping produces an attachment area, which is countersunk about 0.2 mm into the surface of the binder cover 4, 5 and or binder spine 6, intended for the application of e.g. a self-adhesive label.

FIG. 2 shows a lateral, magnified view of FIG. 1, all the grooves 7, 8, 9, 10, 11, 12 being achieved by removal of material from the cover blank. This is preferably performed by routing with an angle cutter at an angle v in which $50° \leq v \leq 55°$. See FIGS. 2 and 3 or, alternately with a convex router (see FIG. 3) with the radius r = t, i.e. if the thickness is 2.0 mm, the radius of the convex router is also 2.0 mm. Routing depth d, which depends on the cover blank's thickness t, is selected so $0.85 \leq d/t \leq 0.925$. This means that d can range from 1.7 to 1.85 mm if t = 2.0 mm.

In the embodiment shown in FIGS. 1 and 2, the routing depth is the same for all grooves, but it may also differ (see FIG. 3), depending on the properties desired for the completed binder.

Moreover, grooves in the embodiment shown in FIG. 2 have profiles with the same conformation, i.e. grooves cut with the same type of router. But other types of routers can also be used in a similar fashion to produce different types of grooves (see FIG. 3) in achieving the desired properties for the completed binder.

The cover blank according to the described embodiments has been provided with grooves formed by routing, i.e. by removal of material from a sheet of cardboard. Other processing methods are possible within the scope of the invention. Also a pressing method for producing the sheet of cardboard is possible within the scope of the invention. The input material for the cover blank is cardboard, as noted above, i.e. pressed fibres, but can also consist of other environmentally recyclable materials.

Claims

1. A cover blank (1), consisting of a board with the thickness t and a size corresponding to a completed binder's front cover, spine and rear cover, for fabrication of a binder equipped with a mechanism, characterised in that the outside (2) of the cover blank (1) is provided with four parallel grooves (7, 8, 9, 10), two of the grooves constituting opening grooves (7, 8) and the other two constituting mech-

anism grooves (9, 10), and the inside (3) of the cover blank (1) is provided with two parallel spine grooves (11, 12).

2. The cover blank according to patent claim 1, characterised in that all the grooves (7, 8, 9, 10, 11, 12) are arranged to be achieved by material-removal action on the cover blank (1).

3. The cover blank according to patent claims 1-2, characterised in that the profile and depth of the opening grooves (7, 8) have a shape allowing the bilaterally lined cover blank to fold at the opening grooves (7, 8) at an angle a in which $45° < \alpha < 90°$.

4. A cover blank according to patent claim 3, characterised in that the profile and depth of the mechanism grooves (9, 10) have a shape allowing the bilaterally lined cover blank to fold at the mechanism grooves (9, 10) at an angle β in which $0° < \beta < 45°$.

5. The cover blank according to patent claim 4, characterised in that the profile and depth of the spine grooves (11, 12) have a shape allowing the bilaterally lined cover blank (1) to fold at the spine grooves at an angle γ in which $80° < \gamma < 100°$.

6. The cover blank according to patent claims 3-5, characterised in that all the grooves (7, 8, 9, 10, 11, 12) are arranged to be achieved by routing with an angle cutter at the angle v in which $50° \leq v \leq 55°$ with routing depth d when binder thickness is t, so $0.85 \leq d/t \leq 0.925$.

7. The cover blank according to patent claim 3, characterised in that the profile and depth of the opening grooves (7, 8) are arranged to be achieved by routing with an angle cutter at the angle v in which $50° \leq v \leq 55°$ with routing depth d, when cover blank thickness is t, so $0.85 \leq d/t \leq 0.925$.

8. The cover blank according to patent claim 4, characterised in that the profile and depth of the mechanism grooves (9, 10) are arranged to be achieved by routing with a convex cutter with a radius r, when the cover blank has the thickness t in which r=t at routing depth d, so $0.85 \leq d/t \leq 0.925$.

9. The cover blank according to patent claim 5, characterised in that the profile and depth of the spine grooves (11, 12) are arranged to be achieved by routing with a convex cutter with a radius r, when the cover blank has the thickness t in which r=t, at routing depth d, so $0.85 \leq d/t \leq 0.925$.

10. The fabrication of a binder from a cover blank according to any of patent claims 1-9, characterised in that the cover blank (1) is bilaterally lined, and the mechanism is thereupon attached at the intended site to form a completed binder.

11. The fabrication of a binder from a cover blank according to any of patent claims 1-9, characterised in that the cover blank (1) is bilaterally lined, whereupon at least one countersunk label area (13, 14) is created by stamping a binder cover (4, 5) and/or binder spine, whereupon the mechanism is attached at the intended site to form a completed binder.

12. A method for fabricating a cover blank consisting of a board with the thickness t and a size corresponding to the completed binder's front cover, spine and rear cover, characterised in that the outside (2) of the cover blank is provided with four parallel grooves (7, 8, 9, 10), two of the grooves constituting opening grooves (7, 8) and the other two constituting mechanism grooves (9, 10), and the inside (3) of the cover blank (1) is provided with two parallel spine grooves (11, 12).

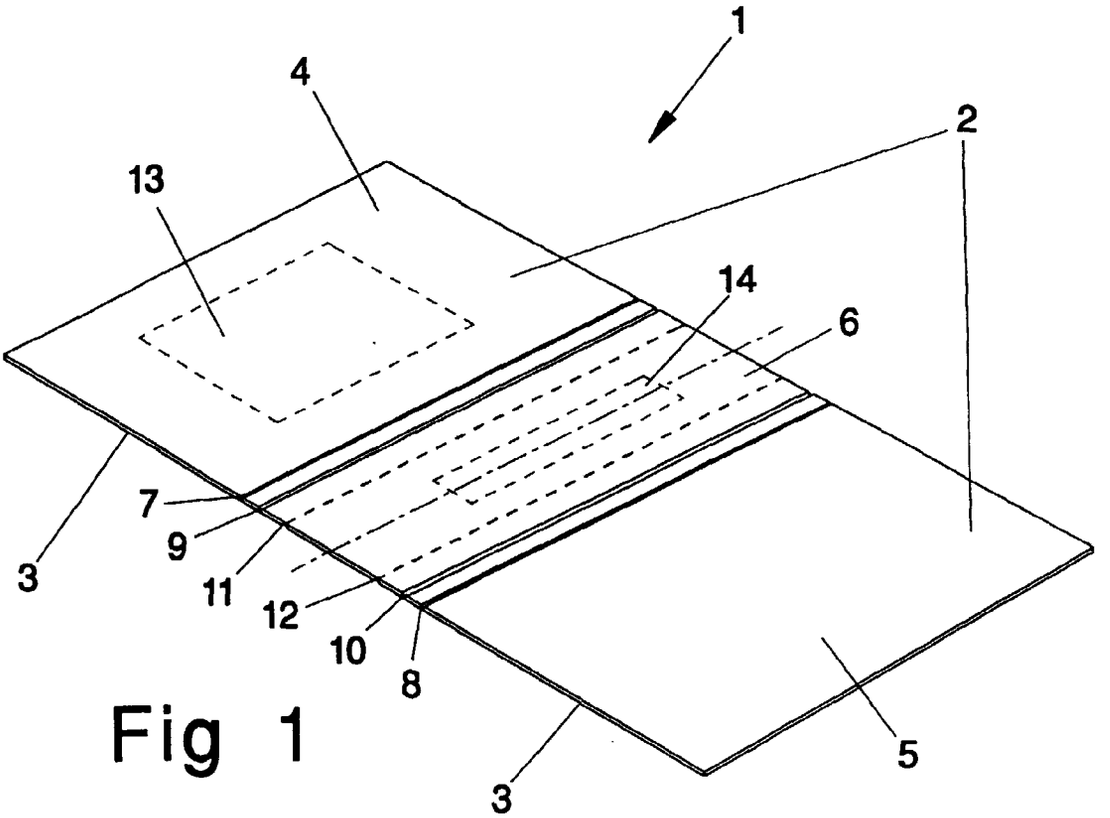

Fig 1

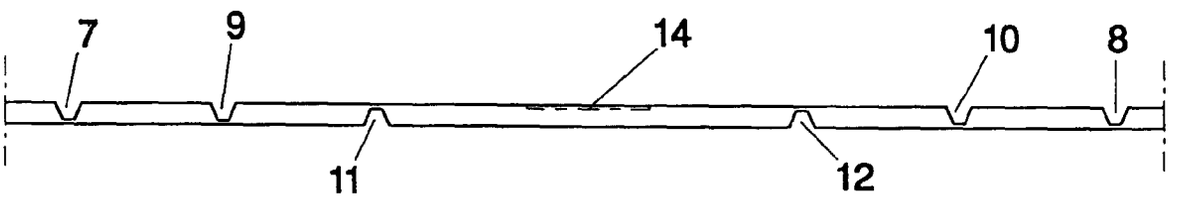

Fig 2

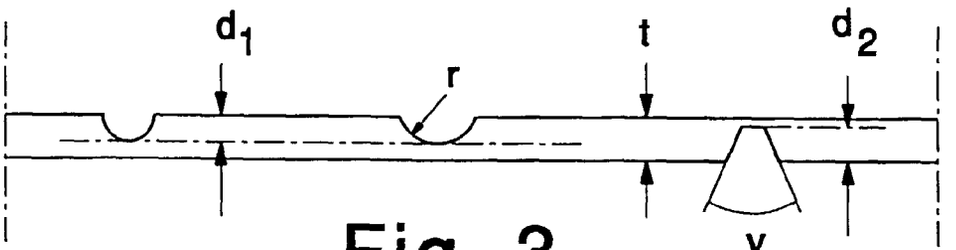

Fig 3