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## (54) Hangable binding structure

(57) An hangable binding structure for binding a plurality of sheets into an hangable calendar or the like comprises an elongated tubular member (102) of semi-rigid material. The member (102) comprises a first end-side (112) and a second end-side (114) and a slit (110) extending longitudinally from the first end-side (112) to the second-side (114). The slit (110) allows the binding member (102) to be flexibly opened in order to receive an elongated perforation (202) at one side of each sheet. The length of the perforation (202) substantially matches the length of the tubular binding member (102). The member (102) further comprises suspension means (204) for attaching the binding member (102) to a wall.

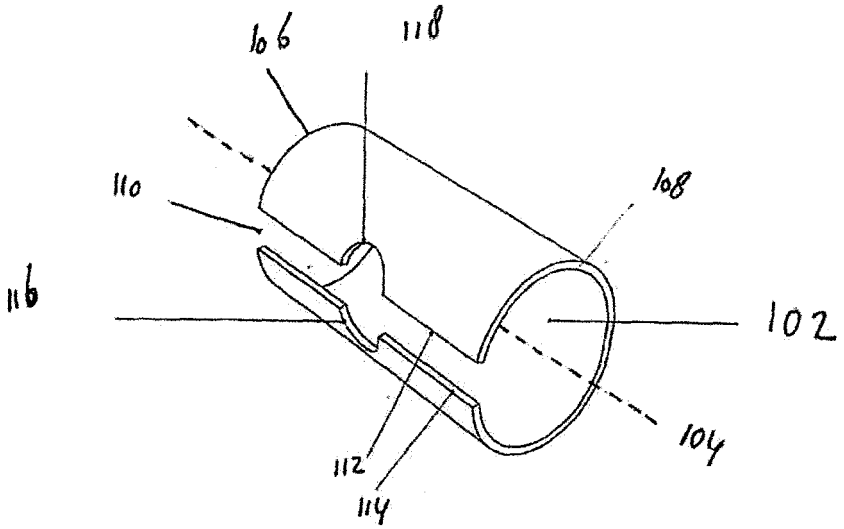


**Fig. 1**

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## Description

### Field of the invention

**[0001]** The invention relates to an hangable binding structure for binding a plurality of sheets into an hangable calendar or the like and a binding assembly comprising such binding structure.

### Background of the invention

**[0002]** Known calendar structures comprise a number of sheets, which are at one edge connected to each other in such a way that the sheets can be turned over in the same manner as pages of a book. Calendars are produced in large volumes, are often used for promotional purposes and are intended for being hung on the wall. Hence they should be both functional, attractive to look at and cheap to produce.

**[0003]** The binding structure of the calendar by which the sheets are kept together typically consists of a spiral metal wire which extend through holes at the top side of the sheets. The metal wire may zigzag within a cylindrical surface. One known spiraled wire structure is the Wire-O® binding.

**[0004]** The binding structure may consist of two wire binding parts positioned on either side from a certain distance of the middle of the top side of sheets. This way a suspension element can be provided between these two parts. The suspension element may be an U-shaped metal wire, whereby the two ends of the wire are bent to either side and are in line with one another. By extending the ends of the U-shaped wire into each one of the two spiral metal wires parts, the calendar may be hung on a nail in the wall.

**[0005]** Such wire binding and suspension structures are relatively expensive, difficult to process and aesthetically not very attractive. Moreover, wire binding structures are vulnerable to deformation when such structures are exposed to external forces e.g. during transport, which makes make the turning of the pages difficult if not impossible.

**[0006]** One alternative for the wire binding structures is described in the Dutch patent NL 1003805. This document describes a calendar binding structure, wherein the two wire binding parts are replaced by two binder rings. The rings are held by an U-shaped metal wire which functions as the suspension element in a similar as in a conventional wire binding structure. Each ring has a disc-shaped central portion of a first width and an annular outer ring of a second width, which greater than the first width. Each ring engages with an associated T-shaped perforation structure at the top side of the calendar sheets thus providing the same functionality as the conventional wire binding parts.

**[0007]** This binding structure however is still rather difficult to produce. Moreover, the binding structure lacks mechanical robustness and the T-shaped connection does not provide a mechanically secure binding connection, e.g. when the sheets are large and/or of a thin paper material.

### Summary of the invention

**[0008]** It is an object of the invention to reduce or eliminate at least one of the drawbacks of the binding structures in the prior art and to provide an hangable binding structure for binding a plurality of sheets into an hangable calendar or the like.

**[0009]** In an embodiment the hangable binding structure comprises an elongated tubular member of a semi-rigid material. The member comprises a first end-side and a second end-side and a slit extending longitudinally from the first end-side to the second-side. The slit allows the binding member to be flexibly opened in order to receive an elongate perforation at one side of each sheet. The length of the perforation may substantially match the length of the tubular binding member. The member further comprises a suspension means for attaching the binding member to a wall.

**[0010]** The use of a tubular member of semi-rigid material provides a binding structure which is simple to fabricate, provides simple processing and is mechanically robust. Further, the member allows simple positioning of a suspension means.

**[0011]** The binding member may have various cross section profiles. In one embodiment the member has a simple circular cross section. In other embodiment the member may have a square, triangle or oval cross section. The member thus allows easy change in the design appearances, which may directly influence the looks of the calendar. In another embodiment the member has an D-shaped cross section profile. Such D-shaped cross section combines the functionality of a round shape for easy lifting and/or turning of the sheets and the functionality of a flat surface for easy attachment of the binder to a wall or the like.

**[0012]** In yet another embodiment the suspension means is formed by a hole in the member. Because of its structural rigidity a simple hole in the member may be provided in order to hang the calendar on the wall.

**[0013]** In a further embodiment the suspension means is formed by a magnetic strip or an adhesive strip extending longitudinally over a substantially flat side of the member. The shape of the member, e.g. a D-shaped, square-shaped or triangular shaped member, allows simple use of other suspension means such as magnetic or adhesive type suspension means.

**[0014]** In an embodiment the member is made of a metal, preferably stainless steel, or in another embodiment of plastic, preferably PCV. The member may be fabricated of any type of material as long as it has semi-rigid properties so that the member can be flexibly opened at the position of the slit in order to receive an elongate perforation of the sheets. Thus the material of the member may be adopted to change the look-and-feel

of the calendar.

**[0015]** In a further embodiment the member is made of a magnetic material. The magnetic material provides a suspension function at metal surfaces. In an embodiment the magnetic member may be used together with a further suspension means such as a hole in the member or an adhesive strip. Thus providing a binding structure which may be hung on vertical surfaces of various materials.

**[0016]** In an embodiment the elongated tubular member comprises one or more guiding members for providing guiding support when flipping a sheet.

**[0017]** In a further aspect the invention relates to a binding assembly, preferably a calendar type assembly, comprising the binding member as described in any of the embodiments above and a plurality of sheets each comprising an elongated perforation, the sheets being bonded together by the binding member. The ratio between the longitudinal length of the binding member and the width of the sheets is between 10 to 50 percent, preferably between 20 to 40 percent.

**[0018]** The term calendar is also meant to include other information carriers which can be hung in the manner according to the invention such as planners or flip-overs.

**[0019]** The invention will be further illustrated with reference to the attached drawing, which schematically show embodiments according to the invention. It will be understood that the invention is not in any way restricted to these specific embodiments.

Brief description of the drawings

**[0020]**

Fig. 1 depicts an exemplary embodiment of a binding structure in the open state;
Fig. 2 depicts an exemplary embodiment of a binding structure in the closed state;
Fig. 3 depicts an exemplary embodiment of a hangable binding structure comprising a D-shaped tubular memeber.
Fig. 4 depicts an further embodiment of the invention.
Fig. 5 depicts yet further embodiment of the invention comprising guiding members.

Detailed description

**[0021]** Fig. 1 illustrates an exemplary embodiment of a hangable binding structure according to the invention. The structure comprises elongated tubular member 102 of a semi-rigid material having, a longitudinal axis 104 and a first end-side 106 and a second-end side 108. A slit 110 extends substantially parallel to the longitudinal axis over the tubular member from the first-end to the second-end. When the tubular member is forced its open position, the slit comprises first and second opposing longitudinal sides 112 and 114. These opposing longitudinal sides allow the reception of one or more sheets of paper or other suitable material. Each sheet has an elongated perforation at one side of each sheet. The perforation is shaped to have substantially the same form and dimensions as the longitudinal sides (112, 114).

**[0022]** The first and second opposing sides further comprise two opposing hemi-spherical apertures (116,118) which form in the closed state a hole in the tubular member thus allowing the binding structure to be hanged to a vertical wall.

**[0023]** Fig.2 illustrates the binding member in its closed state. Once the binding member is inserted through the elongated perforation 202 of the sheets, the spring forces in the binding member which produce the clamping action of the binding member force the binding member back to its closed state. In its closed state, the binding member structures allows the binded sheets to flip 360 degrees around the binding structure. Further, in its closed state, the two opposing hemi-spherical apertures form a hole 204 in the member such so that it can be hanged on a vertical wall. This is further illustrated in Fig.3.

**[0024]** The binding member thus formed, can be used as a binding structure for calendar type structures, folders, flip-over type structures which need to be hanged on a substantially vertical wall.

**[0025]** The tubular member may be made of various shapes of the cross-section e.g. circular, square, triangular. The cross-section may be chosen to add additional functionality to the binding structure. A tubular member with a square or triangular cross-section provides a substantially flat longitudinal surface for attaching a adhesive strip or a magnetic strip thereto. Such adhesive strip or magnetic strips allow the binding structure to adhere to vertical surfaces of various material without the use of a nail or the like. Fig. 4 illustrates one embodiment wherein the cross-section of the tubular structure is D-shaped. This shape provides both a flat longitudinal surface (402) for adhesion strips (406,408) and a cylindrical surface (404) for providing smooth flipping and rotation of the sheets along around the tubular member.

**[0026]** The semi-rigid material characteristics of the member holds the first and second opposing longitudinal sides together and allows the longitudinal member to be opened along the slit. Once the sheets are positioned into open binding structure, the spring forces in the semi-rigid material force the binding structure to come back to its closed position. Typical suitable materials are metals, e.g. steel, copper or the like or a plastic such as PCV. Such plastic structures can be easily made by molding or extrusion type fabrication techniques. Hence, the simple design of the tubular member allows a the use of a variety of semi-rigid materials, allowing easy adaptation of the aesthetics of the binding member.

**[0027]** The clamping action of the binding member is determined by material, the thickness of the material and its dimensions. It is clear for a person in the art that the material parameters and the dimension can be chosen such that the binding member produces a clamping action which allows the binding member with the sheets in

a closed state and which allows the binding member to be opened without unreasonable effort. In one embodiment the binding member is made out of tube having a length of approximately 4 cm, a diameter of 2,2 cm and a thickness of 2 mm. Such binding member is suitable for binding sheets having typical dimensions of 21 by 28 cm, 21 by 21 cm and 28 by 21 cm.

**[0028]** In one embodiment the first and second opposing longitudinal sides in the slit may further comprise a snap-like locking mechanism. To that end, the first opposing longitudinal side 112 of the tubular member may comprise a protruding member along at least part of its length and the second opposing longitudinal side 114 may comprise a recess member along at least part of its length, wherein the protruding member and the recess member form a snap-like locking mechanism. Such locking mechanism is advantageous when a when the sheets bound by the hangable binding member are relatively heavy. This may be in the situation wherein the hangable binding member is used for attaching flip-chart sheets to a wall.

**[0029]** In one embodiment the binding member can be made of a semi-rigid magnetic material, e.g. a plastic having magnetic particles therein. Such a magnetic binding member which also may include a hole formed by two opposing hemi-spherical apertures in the first and second opposing longitudinal sides of the slit. Combining a magnetic binding member with a hole provides the binding member additional hanging functionality in the sense that it can be hanged on ferromagnetic vertical surfaces or on a nail in the wall.

**[0030]** In order for the binding structure to keep the binded sheets in accurate position with respect to the binding structure, the perforation in the sheets should substantially match the form and dimensions of the binding structure defined by the length of the longitudinal side (112, 114) and the thickness of the binding structure. The ratio between the length of the binding member and the width of the sheets provides further positioning of the sheets with respect to each other while at the same time allowing stable flipping of the sheets. In one embodiment the ratio between the length of the binding member and the width of the sheets is between 10 to 50 percent, preferably between 20 to 40 percent.

**[0031]** Further structuring of the tubular binding member may provide additional help in positioning and guiding the sheets. A schematic of an embodiment is illustrated in Fig.5. The tubular member may have one more guiding elements 502, e.g. in the form of a ring type structures positioned along the length of the tubular member. Each ring structure has a diameter which is larger then the diameter of the tubular. The shape of the perforation of the sheet 504 is adapted to receive the binding structure including the guiding elements, thus providing the sheets further guiding support when flipping the sheets. It is understood that these guiding elements may take any desired form as long as a guiding function is provided.

**[0032]** The invention is not limited to the embodiments described above, which may be varied within the scope of the accompanying claims.

## Claims

1. Hangable binding structure for binding a plurality of sheets into a hangable calendar or the like, comprising an elongated tubular member of semi-rigid material, the member comprising a first end-side and a second end-side and a slit extending longitudinally from the first end side to the second side, the slit allowing the binding member to be flexibly opened in order to receive an elongated perforation at one side of each sheet, the length of the perforation substantially matching the length of the tubular binding member, the member further comprising suspension means for attaching the binding member to a wall.

2. Binding structure according to claim 1, wherein the binding member has a round, square, triangle, oval or D-shaped cross section profile.

3. Binding structure according to claims 1 or 2, wherein the suspension means is formed by a hole in the member.

4. Binding structure according to any of claims 1-3, wherein the suspension means is formed by a magnetic strip or an adhesive strip extending longitudinally over a substantially flat side of the member.

5. Binding structure according to any of claims 1-4, wherein the semi-rigid material comprises a metal, preferably stainless steel, or a plastic, preferably PCV or a magnetic material.

6. Binding structure according to any of claims 1-5, wherein the elongated tubular member comprises one or more guiding members for providing guiding support when flipping a sheet.

7. Hangable binding assembly, preferably a calendar type assembly, comprising binding member according to any of claims 1-5, and a plurality of sheets each comprising an elongated perforation, the sheets being bonded together by the binding member.

8. Hangable binding assembly according claim 7, wherein the ratio between the longitudinal length of the binding member and the width of the sheets is between 10 to 50 percent, preferably between 20 to 40 percent.

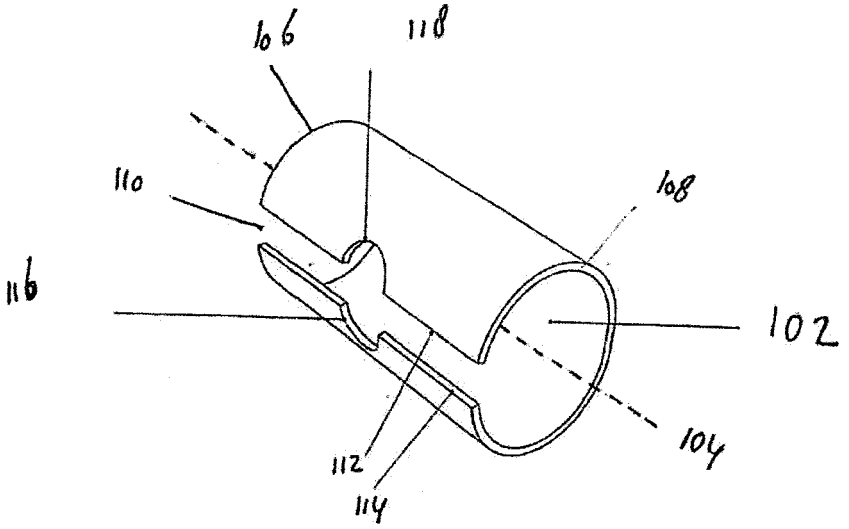


Fig. 1

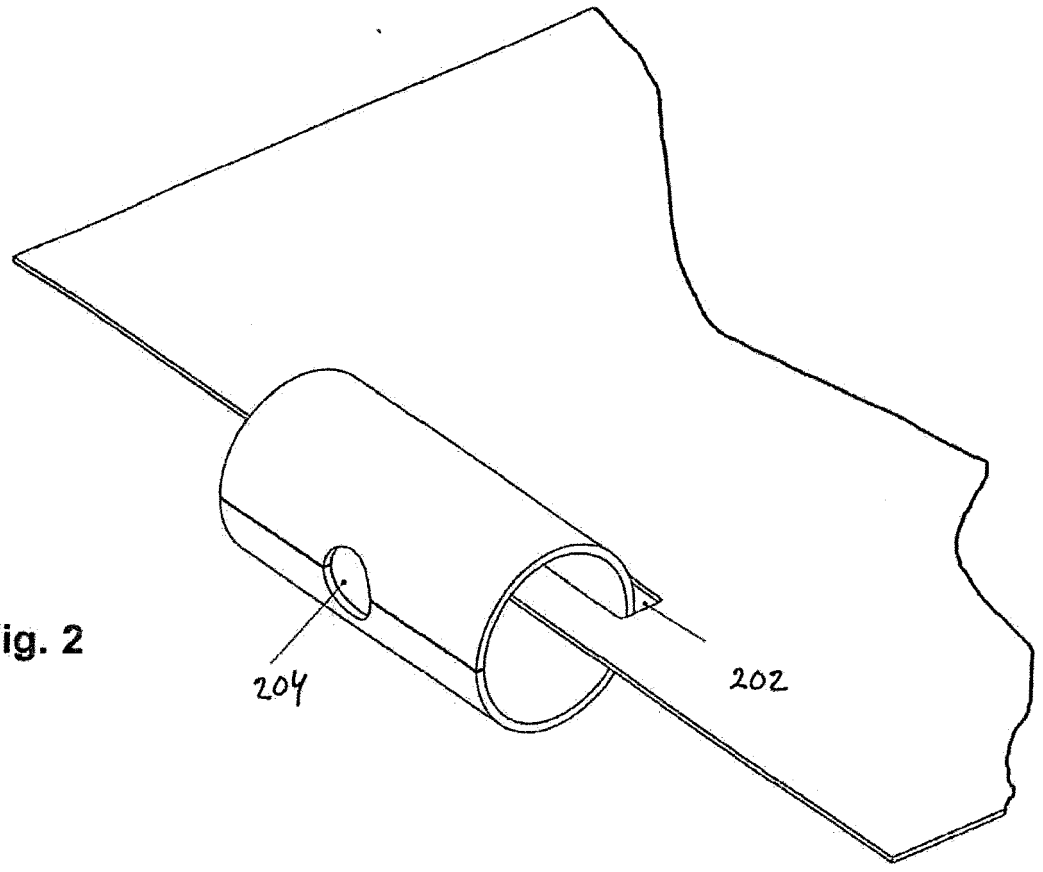


Fig. 2

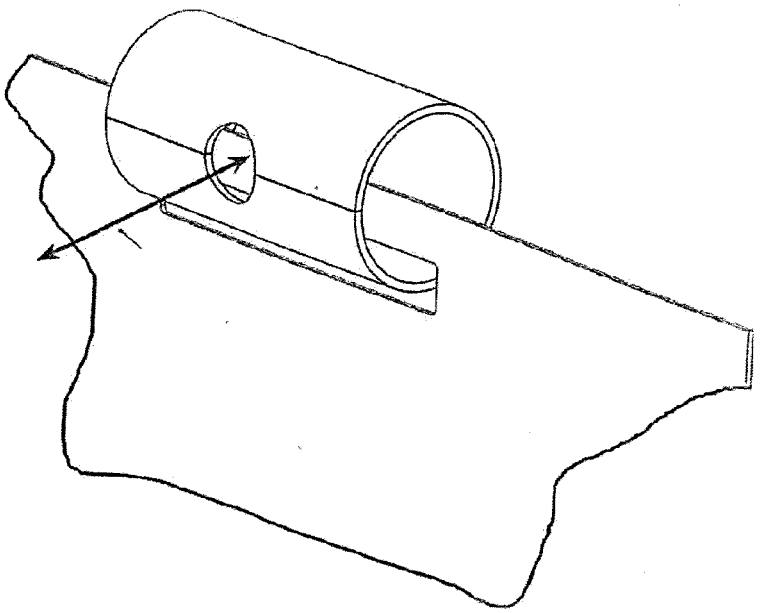

Fig. 3

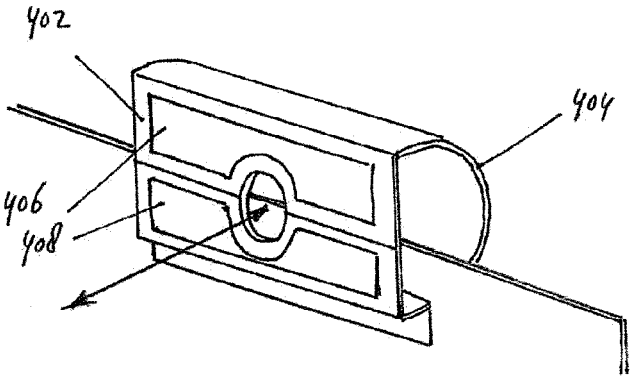


Fig. 4

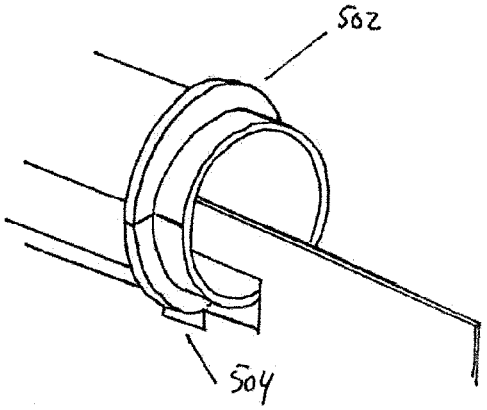


Fig. 5

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# EUROPEAN SEARCH REPORT

Application Number
EP 08 15 6543

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The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
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| The Hague | 29 August 2008 | Dewaele, Karl |

CATEGORY OF CITED DOCUMENTS

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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 15 6543

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## REFERENCES CITED IN THE DESCRIPTION

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