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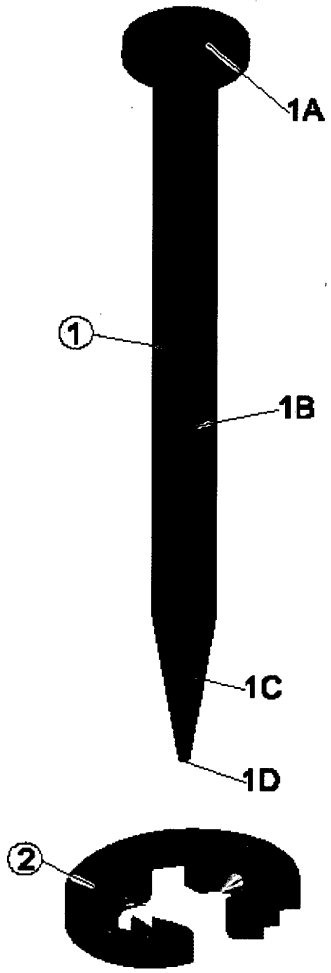
(54) **BINDING SYSTEM**

(57) A binding system for sheets of paper or any material and any size, formed based on an element (1), which is a pin with a cylindrical main body (1B), on one end of which a circular stop (1A) is placed, and the other end of which exhibits a conical narrowing (1C) finished with a hemispherical tip (1C), an element (2), which is a clip-type mechanism formed by two facing semicircles and, consisting of two facing conical punches (2A) which form element (1).

Fig. 1



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Description

Object of the invention:

[0001] This invention relates to a binding system for sheets of paper or any material and any size available in the stationery market, as well as architectural or industrial technical drawings. The system proposes an innovative, simple, modern and functional design, with a formal and versatile look, intended for binding academic and professional work and sketches.

Background of the invention:

[0002] There are currently different and varied binding systems, which can be classified according to the finished look that each system provides to the document, and therefore according to their proportional cost.

[0003] On the one hand there are the traditional systems typically used for handing in documents that require and elaborate presentation, such as doctoral theses and university projects, which are stitched and glued and have hand-crafted covers, or their modernised versions.

[0004] There are also more modern systems, such as binding with steel wire coils or the like, for documents of intensive use and which do not require serious presentation, such as academic notes, logbooks or notebooks.

[0005] This invention provides an intermediate binding system to those mentioned above regarding presentation, allowing a formal and versatile design, since it is suitable for both academic works and for administrative or professional documents, while maintaining a formal presentation.

Description of the invention:

[0006] The binding system of the invention offers quick binding with a serious and aesthetically-pleasing presentation, which can be performed by specialised staff in stationery businesses or even by a layman due to its simplicity of use.

[0007] The binding system described herein allows binding volumes of any thickness and any paper size. Similarly, it allows the binding of folded technical drawings, maintaining an even thickness on the two margins of the document by adding stopper pins on the margins thereof.

Brief description of the drawings:

[0008] We shall describe below an embodiment of the binding system of the invention based on the figures attached, in which:

Fig. 1: perspective view of a binding system of the invention according to one embodiment;

Fig. 2: shows the system of Fig. 1 in its assembled state;

Fig. 3: detailed perspective view of element 2 of Fig. 1 in its idle state;

Fig. 4: detailed perspective view of element 2 of Fig. 1 in its closed state;

[0009] Prior to using the system of the invention it is necessary to perform in the sheets to be bound a number of perforations along one of their margins with a perforating tool, either of the domestic punch kind or of the professional drilling kind, for example as those used in photocopying or printing businesses.

[0010] As can be observed in Fig. 1, the binding system of the invention is formed by two components, referenced with numbers (1) and (2) respectively.

[0011] Component (1) consists in a pin with a cylindrical main body (1B), the diameter of which is smaller than that of the holes previously drilled into the sheets of paper and the length of which allows binding documents of any thickness. On one end of element (1) is arranged a circular stop (1A) that prevents the sheets from slipping out of the binding. On the other end of element (1) is arranged a conical narrowing (1C) ending in a spherical tip (1D), which facilitates the passage of element (1) through the holes during assembly. The stop (1A) of element (1) constitutes a visible element on the cover of the document to be bound.

[0012] When using the invention, the element (1) shall be passed through the perforations drilled in the sheets until it comes into contact with the circular stop (1A) in the sheets and it shall be fastened on the rear part with element (2). Once element (2) is fixed, the excess of element (1) shall be removed, part (1E) by cutting.

[0013] In a preferred embodiment', the element (1) is manufactured in thermoplastic polyurethane or thermoplastic elastomer, since this has properties that favour the use of this system, such as sufficient strength and resistance to endure the tension of the binding without losing its functionality, an elastic nature that facilitates reading the document once it is bound, facilitating a greater opening angle of the sheets than that provided by any device of these characteristics, and finally, an easy removal of the excess material of element (1) once fastened, since it is easily cut with the usual tools, such as domestic scissors or a cutter knife.

[0014] The element (2) consists of a clip-type mechanism, the function of which is to pierce element (1) and hold it by the other end of the stop (1A) to hold the sheets.

[0015] The operation of element (2) is based on the flexing capacity of the plastic material it is made of. It allows closing when putting pressure on areas (2I) and (2J). Thus, element (2) prevents the sheets from getting loose from the binding.

[0016] In its closed state as is observed In Fig. 4, the element (2) has a circular shape and it its idle state, Fig. 3, it has the shape of two facing semicircles.

[0017] It is formed by two semicircles, which make up the fastening method, which in a preferred embodiment of the invention consists of two facing piercing elements (2A) with conical shapes that pierce element (1). The conical shape prevents tears, since there are no edges on the contact surface. The tab (2B) performs the function of a hinge, by allowing when flexed the aligning of the piercing elements and their introduction into element (1). To prevent element (2) from opening once placed, there is an anti-return catch (2C) formed by two teeth, (2D) and (2E) that fit into the cavities to that effect (2F) and (2G). The catch (2C) can be introduced into the cavities by flexing the tab (2H), which allows it to rise above the crests of the cavities (2F) and (2G). In order to achieve the fitting of element (2) on the cylindrical surface of element (1) there are two formations (2K) and (2L) that form the inner cylindrical surface of the element (2).

[0018] In a preferred embodiment, the element (2) is made in ABS or POM plastic or similar plastic alloys, with adequate Shore hardness to allow the functionality of all mechanisms in the part..

Claims

1. A binding system for sheets of paper or any other material and of any size, as well as for architectural or industrial technical drawings, **characterised in that** it is formed based on two elements (1), (2), wherein

   element (1) is a pin with a main body having a cylindrical section (1B), on one of the ends of which is arranged a circular stop (1A), and on the other end of which is arranged a conical narrowing (1B) finished with a hemispherical tip (1C), to facilitate its entry into the perforations made in the sheets,
   element (2) is a clip-type mechanism formed by two facing semicircles, which make up the fastening method, which in a preferred embodiment of the invention consists of two facing piercing elements (2A) with conical shapes that pierce element (1). The conical shape prevents tears, since there are no edges on the contact surface. The tab (2B) performs the function of a hinge, by allowing when flexed the aligning of the piercing elements and their introduction into element (1). To prevent element (2) from opening once placed, there is an anti-return catch (2C) formed by two teeth, (2D) and (2E) that fit into the cavities to that effect (2F) and (2G). The catch (2C) can be introduced into the cavities by flexing the tab (2H), which allows it to rise above the crests of the cavities (2F) and (2G). In order to achieve the fitting of element (2) on the cylindrical surface of element (1) there are two formations (2K) and (2L) that form the inner cylindrical surface of the element (2).

2. A binding system according to claim 1, **characterised in that** the element (1) is manufactured in thermoplastic elastomer or thermoplastic polyurethane, with an adequate Shore hardness that shall allow the functionality of the part.

3. A binding system according to claim 1, **characterised in that** the element (2) is made in ABS or POM plastic or similar plastic alloys, with an adequate Shore hardness to allow the functionality of all mechanisms in the part.

4. A binding system according to claim 1, **characterised in that** the stop (1A) of element (1) conforms a visible element on the cover of the document to be bound.

5. A binding system according to claim 1, **characterised in that** the element (2) conforms a visible element on the back of the document to be bound.

Fig. 1

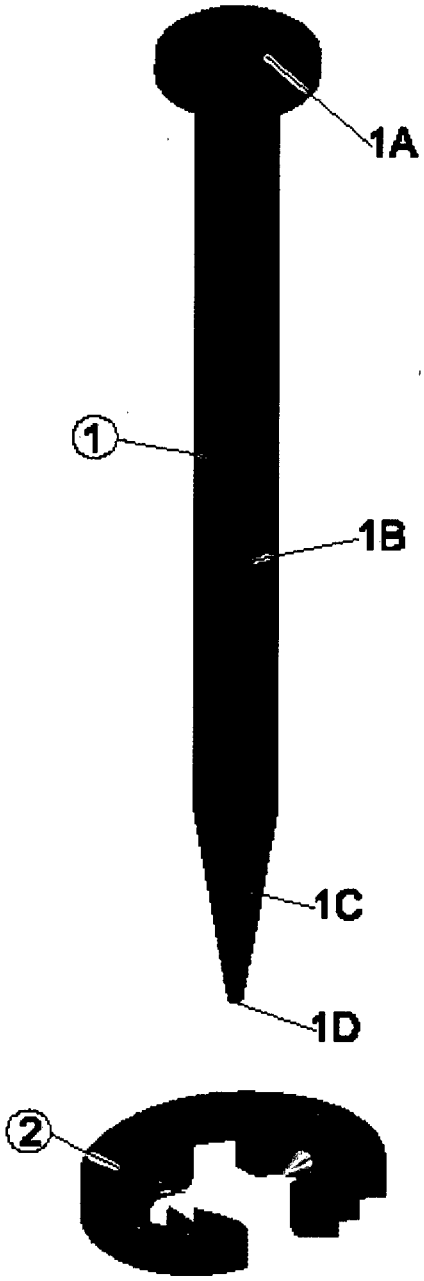


Fig. 2

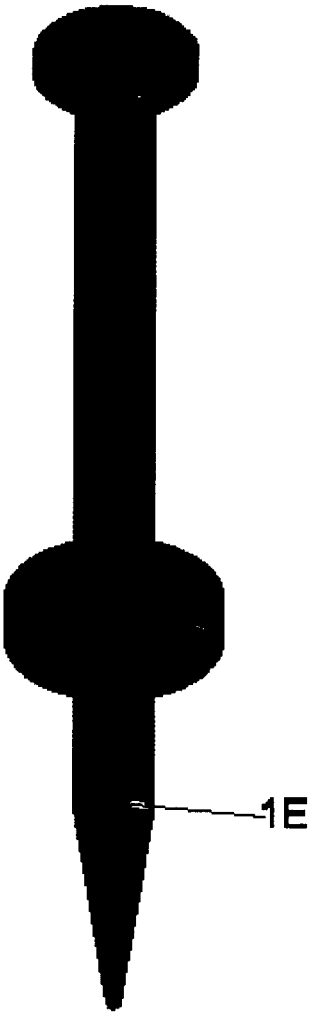


Fig. 3

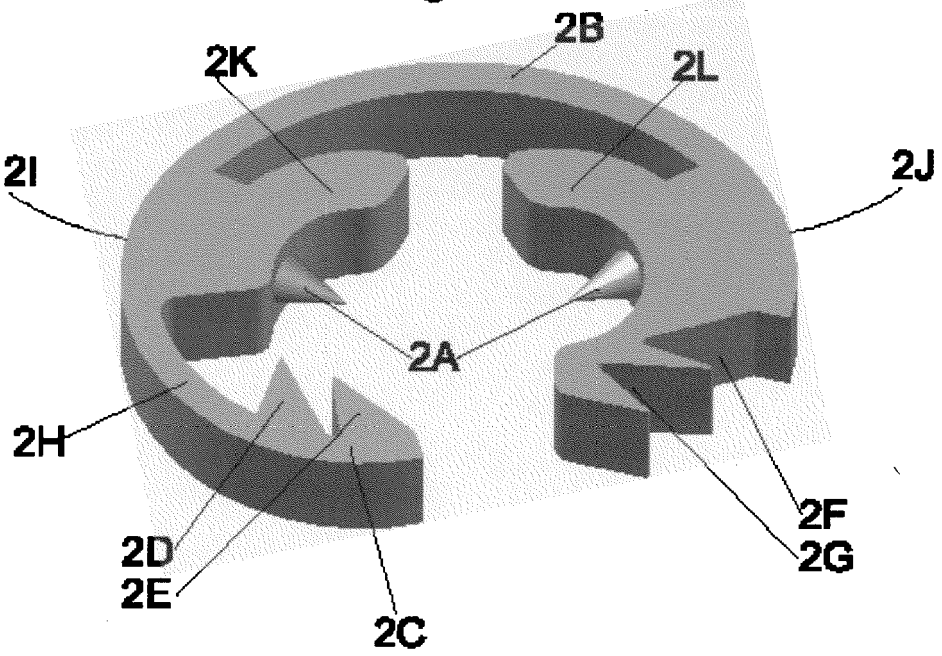
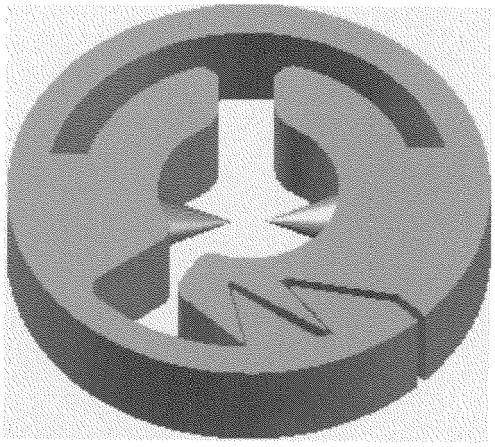


Fig. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 16 38 0012

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	ES 1 094 357 U (MANERO MIJANGOS JAVIER [ES]) 28 November 2013 (2013-11-28) * figures *	1-5	INV. B42B5/08
A	CN 2 499 229 Y (HUANG SISI [CN]) 10 July 2002 (2002-07-10) * figure 1 *	1-5	
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			TECHNICAL FIELDS SEARCHED (IPC) B42B B42F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	27 September 2016	Achermann, Didier

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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27-09-2016

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