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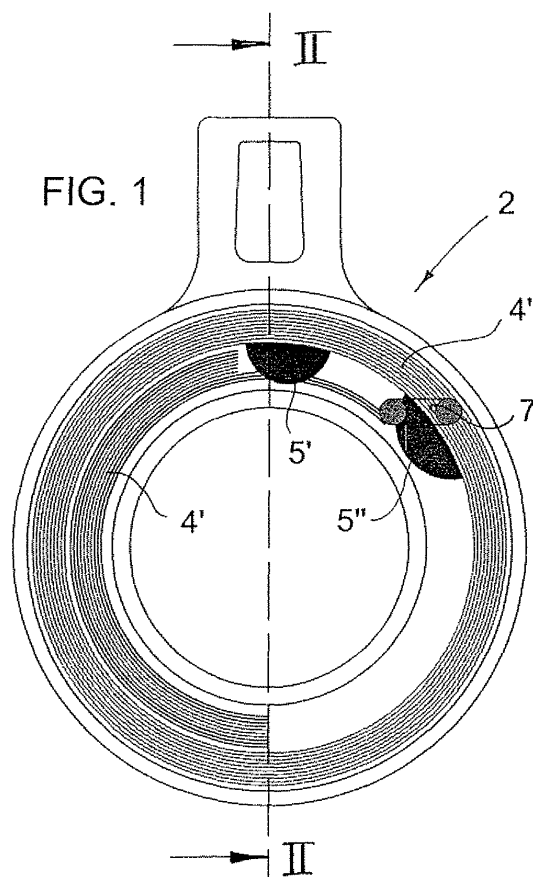
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(54) **Zip fastener slider including an electronic anti-counterfeiting device situated inside the slider and/or the relative puller**

(57) A zip fastener slider (1) is disclosed comprising, inside the slider (1) and/or the relative puller (2), an electronic anti-counterfeiting device, preferably operating according to RFID (Radio Frequency Identification) technology.

The electronic anti-counterfeiting device (3) comprises at least one antenna (4) and at least one integrated circuit device (5), preferably situated in at least one recess formed in at least one of the sides of the slider (1) and/or of the puller (2).

The at least one recess in which the antenna (4) and the at least one integrated circuit device (5) are situated is advantageously closed by a covering element consisting, for example, of a layer of varnish or by a cover of plastic material.



Description

[0001] The present invention relates to a zip fastener slider comprising, inside the slider and/or the relative puller, an electronic anti-counterfeiting device operating preferably, according to RFID (Radio Frequency Identification) technology.

[0002] The problem of counterfeiting is felt strongly in the commercial sector, particularly by creators of high-fashion clothing and/or accessories (or in any case those intended for the top sector of the market) and by their entitled parties (manufacturers, licensees, distributors, etc.).

[0003] In order to overcome this serious problem, numerous stratagems have been adopted [such as, for example, application of a logo, a (perhaps) holographic trademark and/or a label] to identify a non counterfeit item of clothing and/or accessory, but without obtaining the desired results, since the logo, trademark and/or label can become detached, be replaced or themselves be counterfeited.

[0004] The applicant has noted that the majority of items of clothing and many types of accessories (such as, for example, handbags and footwear) have (or can have) at least one zip fastener, which is applied at the time of manufacture and which cannot easily be removed and/or replaced without leaving obvious signs of tampering and/or with fairly high costs.

[0005] The slider and/or the puller of this zip fastener can therefore advantageously be used as a support for an electronic anti-counterfeiting device which, being incorporated in the slider and/or in the puller of the zip fastener is difficult and/or costly to remove and/or replace.

[0006] A zip fastener slider which has the characterising features illustrated in claim 1 fully meets the object of the present invention (overcoming the limits and/or drawbacks presented by anti-counterfeiting devices of the prior art).

[0007] Further advantageous characteristics of the invention form the subject matter of the dependent claims.

[0008] Further characteristics of the invention will be made clearer by the detailed description that follows, referring to purely exemplifying and therefore non limiting embodiments thereof, illustrated in the appended figures, wherein:

- Figure 1 shows diagrammatically a front view of a puller made according to the invention, belonging to a zip fastener slider and without the covering element;
- Figure 2 shows diagrammatically the puller of Figure 1 sectioned along the plane II-II of Figure 1;
- Figure 3 shows diagrammatically a front view of a zip fastener slider comprising the puller illustrated in Figure 1;
- Figure 4 shows diagrammatically a bottom view of a zip fastener slider made according to the invention,

without the covering element;

- Figure 5 shows diagrammatically a sectional view of the zip fastener slider of Figure 4;

[0009] In the appended figures identical elements will be designated by the same reference numerals.

[0010] The present invention relates to a zip fastener slider comprising, inside the slider and/or the relative puller, an electronic anti-counterfeiting device operating, preferably, according to RFID (Radio Frequency Identification) technology.

[0011] Figure 1 shows diagrammatically a front view of a puller 2 made according to the invention, belonging to a zip fastener slider 1 (Figure 3), which has at least one recess, formed in at least one of the sides of the puller 2, wherein is housed the electronic anti-counterfeiting device 3, operating according to RFID technology and comprising an antenna 4 (4', 4'') and at least one integrated circuit device 5 (5', 5''), connected to the antenna 4.

[0012] In the appended figures, the at least one recess has not been identified with a reference numeral because it is occupied by the electronic anti-counterfeiting device 3.

[0013] The electronic anti-counterfeiting device 3 is advantageously made by depositing a thin film and/or by other methods normally used to make an electronic device operating according to RFID technology and in any case not described herein because they are per se known.

[0014] In the embodiment illustrated in Figure 1, the electronic anti-counterfeiting device 3 comprises an antenna 4 divided into two parts (4', 4'') connected to each other by a jumper 7 and a pair of integrated circuit devices (5', 5'') connected to each other and to the antenna 4 and able to "communicate" (in a per se known manner which in any case is outside the scope of the present invention) with an external reader, omitted in the appended figures.

[0015] Without departing from the scope of the invention, the electronic anti-counterfeiting device 3 can include a single antenna 4, an antenna 4 divided into three or more parts connected to each other, a single integrated circuit device 5 or three or more integrated circuit devices 5 connected to each other and to the antenna 4.

[0016] In order to improve the efficacy of the electronic anti-counterfeiting device 3, cryptographic memory keys and/or particular identification codes are advantageously stored in the integrated circuit devices 5.

[0017] The at least one recess in which the at least one integrated circuit device 5 is placed is advantageously closed by a covering element (preferably consisting of a layer of varnish or a cover of plastic material) which protects the electronic anti-counterfeiting device 3 from outside agents and conceals its presence from a possible counterfeiter; the use of a layer of varnish as the covering element has proved particularly advantageous for zip fasteners used in the clothing sector to protect the electronic anti-counterfeiting device 3 during the operations (wash-

ing, dying, etc.) to which the item of clothing bearing the zip fastener is (or may be) subjected.

[0018] In Figure 1 this covering element (layer of varnish, cover of plastic material, etc.) has been omitted to show the electronic anti-counterfeiting device 3.

[0019] The slider 1 and/or the puller 2 of the zip fastener provided with an incorporated electronic anti-counterfeiting device 3 are difficult to remove and/or replace and allow the manufacturer (and/or entitled party), to check easily, by means of an external reader, whether the article to which the zip fastener is applied is original or counterfeited.

[0020] Figure 2 shows diagrammatically the puller 2 of Figure 1 sectioned along the plane II-II of Figure 1; from Figure 2 it can be seen that the puller 2 has, on both sides, a recess occupied by the integrated circuit device 5.

[0021] Figure 3 shows diagrammatically a front view of a zip fastener slider 1 comprising the puller 2 illustrated in Figure 1; in Figure 3 an anti-counterfeiting device 3 like that described previously with reference to Figures 1 and 2 can be seen.

[0022] Figure 4 shows diagrammatically a bottom view of a zip fastener slider 1 produced according to the invention, which has a recess in which is situated an anti-counterfeiting circuit 3 comprising an antenna 4 (4', 4'') and at least one integrated circuit device 5 (5', 5'') connected to the antenna 4 like that described with reference to Figures 1 and 2; the covering element (a layer of varnish, a plastic cover, etc.) which closes the recess has been removed to show the electronic anti-counterfeiting device 3.

[0023] Figure 5 shows diagrammatically a sectional view of the zip fastener slider 1 of Figure 4, sectioned along the plane V-V of Figure 4; from Figure 5 the recess can be seen, created in the bottom part of the slider 1 and occupied by the antenna 4 and by the integrated circuit device 5 which make up the electronic anti-counterfeiting device 3.

[0024] Without departing from the scope of the invention, an expert in the field can make to the zip fastener slider (body and puller) previously described all the modifications, even to the shape and dimensions of the puller and/or of the body, and the improvements suggested by normal experience and/or by the natural evolution of the art.

Claims

1. A zip fastener slider (1) comprising a puller (2), **characterised in that** it comprises an electronic anti-counterfeiting device (3) situated inside the slider (1) and/or puller (2).
2. A slider (1) as in claim 1, **characterised in that** the electronic anti-counterfeiting device (3) works according to RFID technology.

3. A slider (1) as in claim 1, **characterised in that** the electronic anti-counterfeiting device (3) comprises at least one antenna (4) and at least one integrated circuit device (5), connected to the antenna (4).

4. A slider (1) as in claim 3, **characterised in that** the electronic anti-counterfeiting device (3) is created in at least one recess formed in at least one of the sides of the slider (1) and/or of the puller (2).

5. A slider (1) as in claim 4, **characterised in that** the slider (1) and/or the puller (2) has a recess on both sides occupied by the antenna (4) and by the antenna (4) and the integrated circuit device (5) respectively.

6. A slider (1) as in claim 4, **characterised in that** the at least one recess is closed by means able to protect the electronic anti-counterfeiting device (3) from outside agents and to conceal its presence.

7. A slider (1) as in claim 6, **characterised in that** the means that close the at least one recess consist of a layer of varnish or of a cover of plastic material.

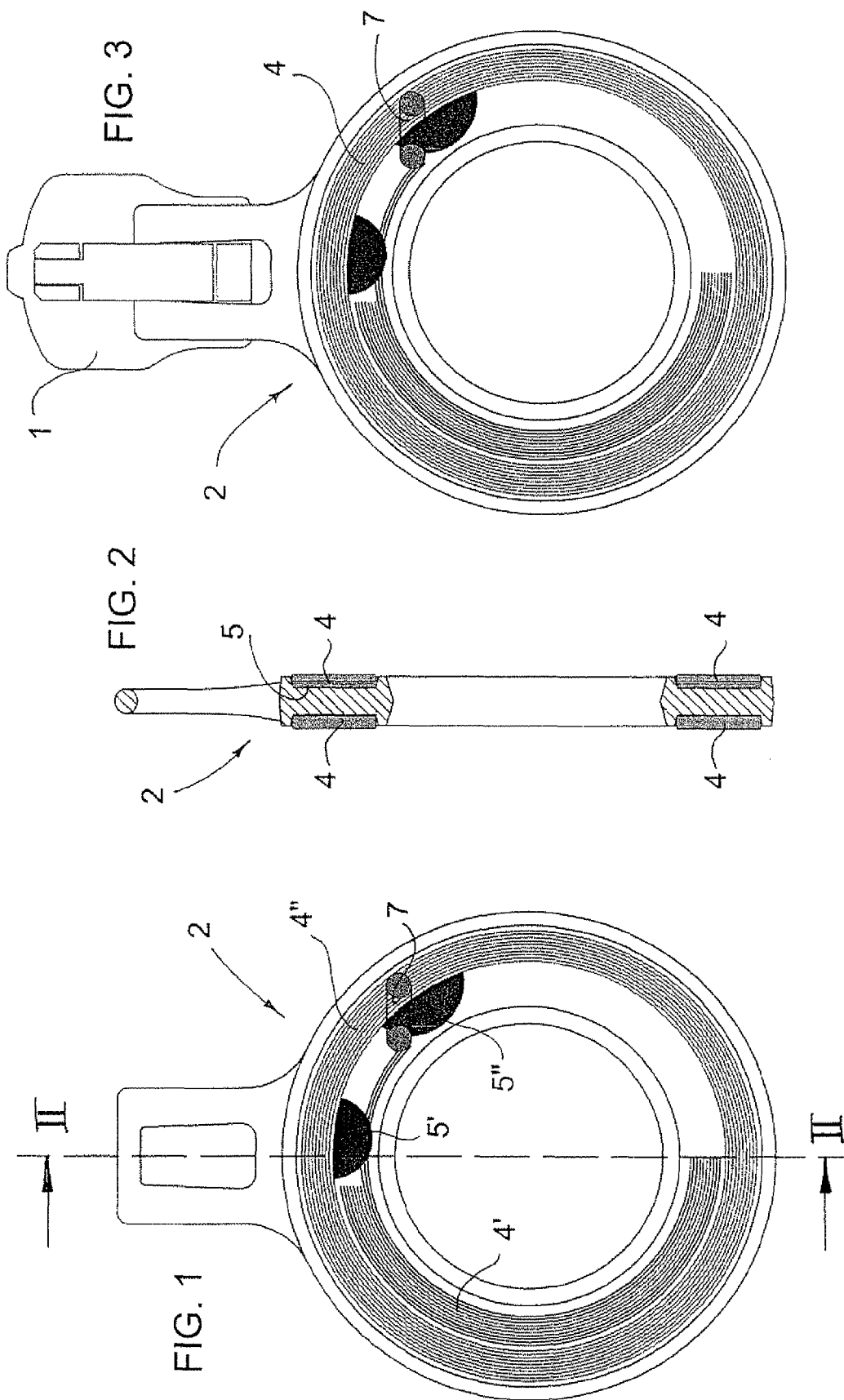


FIG. 5

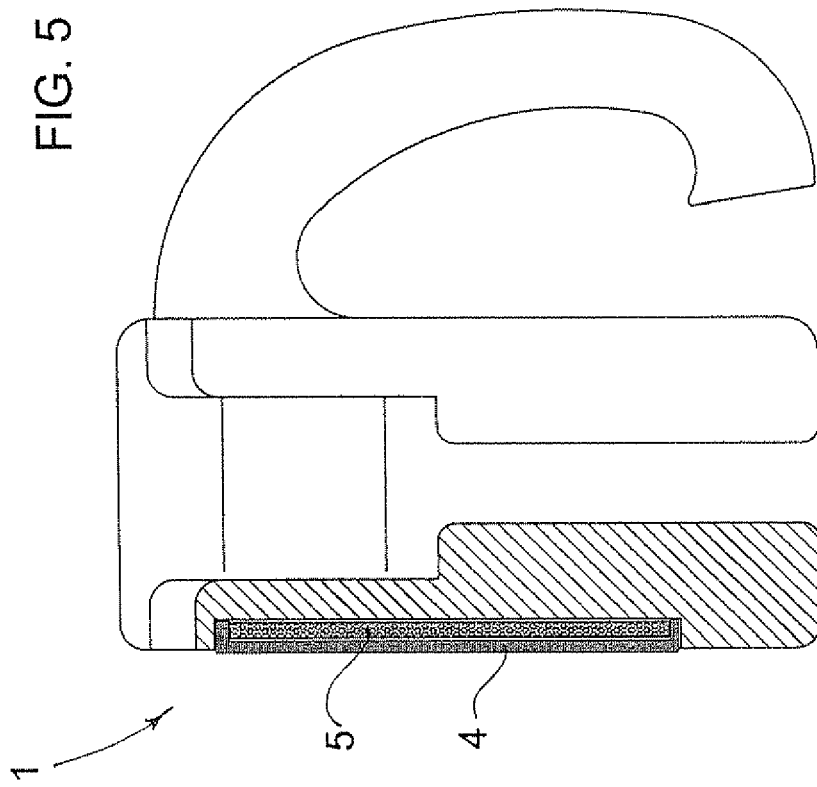


FIG. 4

