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(54) **Disposable anti-theft device for eyeglasses**

(57) Non-reusable anti-theft device for displaying eyeglasses comprising a main body (1), provided with an opening (2) for the arrangement thereof on display bars and with locking means (means for locking) (3), and means for connection (connection means) to at least one pair of eyeglasses.

The device is **characterized in that** the locking means (3) for at least one pair of eyeglasses by means of specific and separate connection means, are produced in one piece with the main body (1) of the anti-theft device.

The connection means clamp the eyeglasses and are thus irreversibly constrained to the device through the locking means (3).

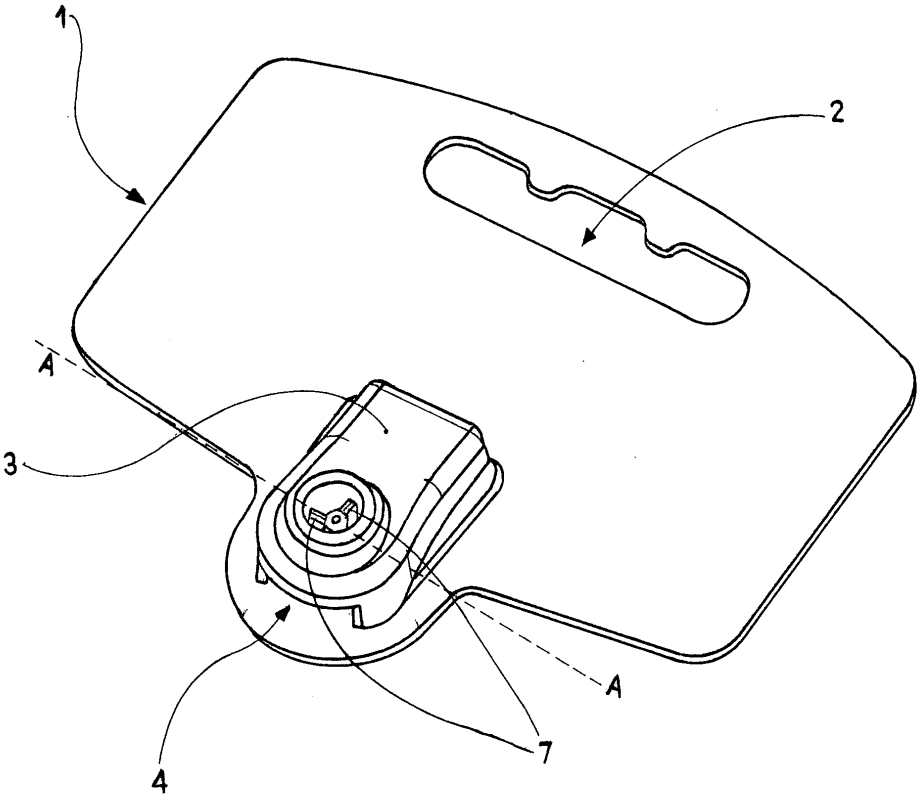

Fig.1

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Description

[0001] The present invention relates to a non-reusable anti-theft device for eyeglasses comprising a support provided with an opening to allow positioning thereof on a display unit with bars in a folded position, i.e. with the temples of the frame folded, and at the same time allow a potential buyer to try on a pair of eyeglasses in which he or she is interested without having to remove it. In more detail, the anti-theft device is of the non-reusable type being provided with means for locking it irreversibly to the frame of a pair of eyeglasses. The device is only removable after being definitively broken using a special tool designed purposely to perform this function.

[0002] Prior art comprises numerous anti-theft devices which allow eyeglasses to be displayed on conventional racks which require the frame to be disposed in the opened position, i.e. with the temples unfolded.

[0003] The document W02007/129189, by the same Applicant, for example describes an anti-theft device to be applied to the temple of the eyeglasses to be displayed, allowing a potential buyer to try on the eyeglasses without requiring to remove the device.

[0004] A characteristic of the device is the fact that it cannot be re-used on a new pair of eyeglasses, once the pair on which it was installed has been sold, as the means of the system for locking to the frame cannot be removed unless they are broken first.

[0005] The use of re-usable anti-theft devices, which allow the eyeglasses on sale to be displayed on a display unit with bars by means of an opening present on the body of the device is also known from the document US5437172, also by the same Applicant.

[0006] This device is reusable after being removed from the pair of eyeglasses sold, as it has closing means made of a magnetic material or connection means with reversible constraint, for example using screws or the like.

[0007] Prior art anti-theft devices for eyeglasses are relatively complex to produce, as they are composed of numerous parts, all of small dimensions, which therefore cannot be produced in one piece, and which require detailed assembly, during construction of the final piece.

[0008] It must also be noted that prior art anti-theft systems, above all those having very small removable parts such as screws and the like, require great care by the salesperson in the store. In fact, during the operations to remove the anti-theft device from a pair of eyeglasses sold, the salesperson must store all the parts of the device until it is installed on a new pair of eyeglasses to be displayed for sale.

[0009] The possibility of losing one of the parts during removal, storage or installation of the anti-theft device is great, also considering that these operations must normally be performed quickly and often in the presence of a crowd inside the point of sale.

[0010] A further disadvantage of re-usable safety devices according to prior art lies in the fact that these almost all have an area provided with a space usable to affix the bar code, the logo of the manufacturer of the eyeglasses, the price tag, and other information useful for the sale, which at the time of reuse must be appropriately modified in relation to the new type of eyeglasses on which the anti-theft device is to be clamped.

[0011] The object of the present invention is to propose an anti-theft device for eyeglasses which acts as a deterrent against possible theft and which solves the problems of prior art, being easy and inexpensive to produce in a single block that does not require any assembly steps during production.

[0012] Moreover, the absence of removable closing means of small dimensions, such as screws or the like, facilitates removal and installation operations by the salesperson in the specialized store or shopping centre.

[0013] Installation of the device according to the invention on a pair of eyeglasses will be extremely simple and can be performed manually without requiring particular tools, as the device is provided with locking means (means for locking) that produce an irreversible constraint and as no parts of small dimensions require to be assembled.

[0014] Removal of the anti-theft device according to the present invention will be possible only by breaking the locking means, using a special tool, thus making the device non-reusable.

[0015] The low cost of the device is advantageously achieved by producing it in one piece and using plastic materials, preferably recyclable, for a lower environmental impact.

[0016] A further object of the invention is to propose an anti-theft device for eyeglasses which allows them to be displayed in the closed position, i.e. with the temples of the frame folded, allowing maximization of space on the display rack, which is otherwise poorly used as it is completely occupied in depth by the frame in the opened position.

[0017] The anti-theft device also has a large empty area in the central body, which can be suitable to house magnetic chips commonly used in conventional anti-theft devices, as well as information regarding the price of the article on sale or labels with useful information. Moreover, as already stated, the anti-theft device has the characteristic of being non-reusable after being removed from the pair of eyeglasses sold.

[0018] These and other objects are achieved by the anti-theft device according to independent claim 1 and the following dependent claims.

[0019] The non-reusable anti-theft device for displaying eyeglasses according to the present invention comprises a main body provided with an opening for positioning it on display unit bars and means for connection (connection means) to at least one pair of eyeglasses.

[0020] The device is **characterized in that** the means for locking at least one pair of eyeglasses through the specific and separate connection means are produced in once piece with the main body of the anti-theft device.

[0021] The anti-theft device is of the non-reusable type and is produced in one piece, with the exception of the connection means which are not part of the main body of the device and which allow the device to be affixed to the eyeglasses.

[0022] The connection means clamp the eyeglasses and are therefore, as already stated, irreversibly constrained to the device through the locking means.

[0023] These and other advantages will be apparent from the description below and from the drawings attached by way of non-limiting example, wherein

- Figure 1 is a perspective view of the device of the invention without the connection means;
- Figure 2 is a sectional view of a detail of the device according to the plane A-A of Figure 1;
- Figure 3 is a plan view of an embodiment of the connection means;
- Figure 4 is a perspective view of an alternative embodiment of the connection means;
- Figure 5 is a perspective view of an embodiment of the special tool for opening the device.

[0024] With reference to figure 1, the non-reusable anti-theft device for eyeglasses of the present invention, in its preferred embodiment shown here, comprises a main body 1, having the form of a plate made of plastic materials, on which an opening 2 and a housing 3 are provided, both produced in one piece with the main body 1.

[0025] The opening 2 makes it possible to arrange the device on display units provided with bars or the like, of dimensions compatible with the opening 2 and for this reason can be produced in different forms and dimensions.

[0026] The main body 1 is provided with empty areas usable to affix labels with useful information, for example concerning the pair of eyeglasses on sale, such as the price, the bar code, or the manufacturer's logo.

[0027] Moreover, it is possible to affix, on the central body 1 of the device, the magnetic bands required for operation of common alarm systems used, for example, in specialized points of sale or in shopping centres.

[0028] The housing 3 comprises means for locking the eyeglasses to the device through suitable connection means and an inlet section 4 to receive both ends of said connection means, by means of which it is possible to lock a pair of eyeglasses to be displayed for sale, to the main body 1 of the device.

[0029] Figure 3 shows a possible embodiment of the connection means, in this case composed of a band 5, generally made of plastic materials, comprising two elongated strips (flaps) 10 and 11, symmetrical with respect to a transverse line 12 on which a part of the frame of the eyeglasses is housed, preferably the bridge interposed between the lenses.

[0030] The two strips 10, 11 can be superimposed manually, by rotating them at the line of symmetry 12, and present, on the outer surface thereof, grooves 20 that facilitate insertion in the inlet section 4 of the housing 3 and at the same prevent removal therefrom.

[0031] In fact, the locking means provided in the housing 3 and the grooves 20 of the band 5 allow to realize a non-reversible constraint therebetween by interference of parts.

[0032] In other words, once the band 5 has been inserted with the strips 10 and 11 superimposed in the inlet section 4, due to the action of said locking means it is no longer possible to open the device except by breaking said locking means and thus making the anti-theft device unusable for subsequent attachment to another pair of eyeglasses.

[0033] With reference to figure 2, the locking means provided in the housing 3, also produced in one piece with the main body 1, are formed by a pin 6 connected to the housing 3 by means of at least one constraining point 7.

[0034] The pin 6 is appropriately shaped in the lower part thereof to ensure manual insertion and sliding of the band 5 and to ensure a constraint can be exerted by inference of parts with the grooves 20 present thereon (Figure 3). In fact, the strips 10, 11 superimposed at the line 12 and inserted in the housing 3 of the device, will tend to return to the undeformed linear position through the natural elastic return of the material with which they are formed. This phenomenon allows interference to be created between the grooves 20 of the upper strip and the pin 6, such as to prevent the band 5 from sliding backwards once pushed into position. By doing this the bridge of the frame of the eyeglasses, not shown, remains locked by said connection means represented by the band 5 at the U-shaped profile formed after superimposing the strips 10 and 11 of this band when inserted in the inlet section 4 of the housing 3.

[0035] The anti-theft device for eyeglasses of the invention is of the non-reusable type, as once the strips 10 and 11 have been inserted manually in the housing 3, the band 5 is irreversibly constrained by interference with the lower part of the pin 6.

[0036] Again with reference to Figure 2, the pin 6 is produced in one piece with the main body 1 of the device and in particular remains constrained to the housing 3 by means of one or more constraining points 7, the position of which, being produced in one piece with the main body 1, is determined during production of the mould of the anti-theft device as a whole.

[0037] By breaking the constraining points 7 between the housing 3 and the pin 6, the latter can be released from the main body 1 of the device and consequently remove the interference with the strips 10 and 11 of the band 5, which can thus be extracted from the inlet section 4.

[0038] A special tool 9, shown in Figure 5, is thus provided to open the anti-theft device.

[0039] As the constraining points 7 are produced according to predetermined dimensions and form, only a tool with an end section complementary to that of the

constraining points 7 can be used to open the device.

[0040] The tool 9 can engage the constraining points 7 having a complementary form and section thereto, and following a slight rotation causes their breakage releasing the pin 6 from the housing 3 of the device.

[0041] This removes the interference with the grooves 20 of the band 5, which can slide freely out of the inlet section 4, allowing extraction of the eyeglasses previously locked.

[0042] Figure 4 shows a second embodiment of the connection band 5, wherein the central part thereof, in the vicinity of the line of symmetry 12, is provided with tapers 25 and flanges 26 required so that even the thinnest frames can be correctly clamped, preventing undesirable movement of the eyeglasses to be displayed after they are locked by means of the device.

[0043] The tapers 25 are produced staggered and complementary with respect to the line of symmetry 12.

[0044] Consequently, following manual folding of the strips 10 and 11 in the direction of the arrow F, the tapers 25 present on a strip can be interposed between those present on the other strip, locking the bridge of the frame of the eyeglasses positioned along the line of symmetry 12.

[0045] It must be noted that, just as for the band shown in Figure 3, also in this embodiment grooves 20 are provided on the opposite side to the side shown in Figure 4, to allow insertion of the band in the housing 3 of the device with consequent irreversible constraint by means of the pin 6.

[0046] As can be seen in Figure 4, the band 5 is also provided with some projections 27 on the inner side of the strip 10 and symmetrically, with respect to the line 12, with some recesses 28 on the strip 11.

[0047] The projections 27 and the recesses 28 are disposed on the inner side of each strip of the band 5 so that once they have been folded in the direction of the arrow F they come into contact, as they are disposed in a complementary and symmetrical manner.

[0048] After the strips 10 and 11 have been superimposed, the projections 27 are housed in the recesses 28 which, being disposed transversely with respect to the prevalent longitudinal extension of the band 5, thus ensure the absence of relative sliding between the strips 10, 11.

[0049] In the embodiment of the band 5 described in Figure 3, the projections 27 and the recesses 28 are also present, as they contribute towards locking the eyeglasses on the main body of the device, preventing relative sliding of the strips 10 and 11.

[0050] In fact, as can be better seen with the aid of Figure 2, after insertion of the band 5 with the strips superimposed in the opening 4 of the housing 3, only the upper strip will be in contact with the pin 6 determining irreversible constraint by interference of parts with the grooves 20.

[0051] The lower strip will instead remain in contact with the base of the housing 3 and, through coupling of the projections 27 with the recesses 28, the absence of relative sliding between the lower strip and the upper strip constrained to the pin 6 will be ensured.

[0052] The operations for assembly of the anti-theft device on a pair of eyeglasses to be displayed for sale include a first step in which a part of the frame of the eyeglasses, preferably the bridge between the lenses, is disposed along the line of symmetry 12 of the band 5. Subsequently, the strips 10, 11 of the band 5 are superimposed manually with the grooves 20 facing the outside of the U-shaped profile that is formed after the strips are folded at the line of symmetry 12.

[0053] In the closed condition, i.e. with the strips 10 and 11 superimposed, the band 5 is inserted manually in the inlet section 4 present on the main body 1 of the device, until positioning and complete locking of the eyeglasses is obtained.

[0054] Following the aforesaid insertion, an irreversible constraint is produced, by interference of parts, between the pin 6 placed in the housing 3 and the grooves 20 placed on the outer side of the upper strip of the band 5.

[0055] The pair of eyeglasses is locked between the main body 1 and the U-shaped profile formed after the flaps 10 and 11 of the band are superimposed.

[0056] The opening 2 present on the main body 1 of the device will allow hanging on a display unit provided with bars on which the eyeglasses, constrained to the device at the bridge of the frame, will take up less space as the temples can advantageously be closed in the folded position.

[0057] The anti-theft device does not require to be removed each time a potential buyer wishes to try on a pair of eyeglasses on which it is installed.

[0058] Moreover, the dimensions of the main body 1 of the device form an excellent deterrent to theft.

[0059] After the pair of eyeglasses on which the device is installed is sold, it can be removed by a salesperson solely by means of a special tool 9, produced purposely to perform this function.

[0060] Through slight torsion of the tool 9 placed in contact with the constraining elements 7 these will break and the pin 6 will be released from the housing 3. The absence of interference between the pin 6 and the grooves 20 of the upper strip, will allow extraction of the band 5 from the inlet section 4 and therefore from the main body 1 of the device.

Claims

1. Anti-theft device of the non-reusable type for displaying eyeglasses comprising a main body (1), provided with at least one opening (2) for the arrangement thereof on display bars and locking means (means for locking) (3), and means for connection (connection means) to at least one pair of eyeglasses, **characterized in that** said locking means (3) are produced in one piece with said main body (1) of said

anti-theft device.

2. Device as claimed in claim 1, **characterized in that** said locking means (3) are suitable to produce a constraint by interference of parts of irreversible type with said connection means.

3. Device as claimed in claim 1 or 2, **characterized in that** said blocking means (3) comprise at least one pin (6) connected by means of at least one constraining point (7) to said main body (1).

4. Device as claimed in claim 3, **characterized in that** said pin (6) is produced in one piece with said main body (1).

5. Device as claimed in one of the preceding claims, **characterized in that** said means for connection of said at least one pair of eyeglasses to said main body (1) are realized by a band (5) having two superimposable strips (10, 11).

6. Device as claimed in claim 5, **characterized in that** grooves (20) are realized on at least one side of each of said superimposable strips (10, 11) of said band (5), suitable to create an irreversible constraint by interference of parts with said pin (6).

7. Device as claimed in claim 5, **characterized in that** said band (5) is produced in elastically deformable material.

8. Device as claimed in claims 5 to 7, **characterized in that** at least one projection (27) and at least one recess (28) disposed in a complementary and symmetrical manner, are realized on at least one side of each of said two superimposable strips (10, 11) of said band (5),

9. Device as claimed in one of the preceding claims, **characterized in that** said at least one constraining point (7) of said locking means (3) is broken by means of a tool (9) having an end section complementary to said at least one constraining point (7), for opening the device.

10. Use of the anti-theft device according to the preceding claims for displaying eyeglasses.

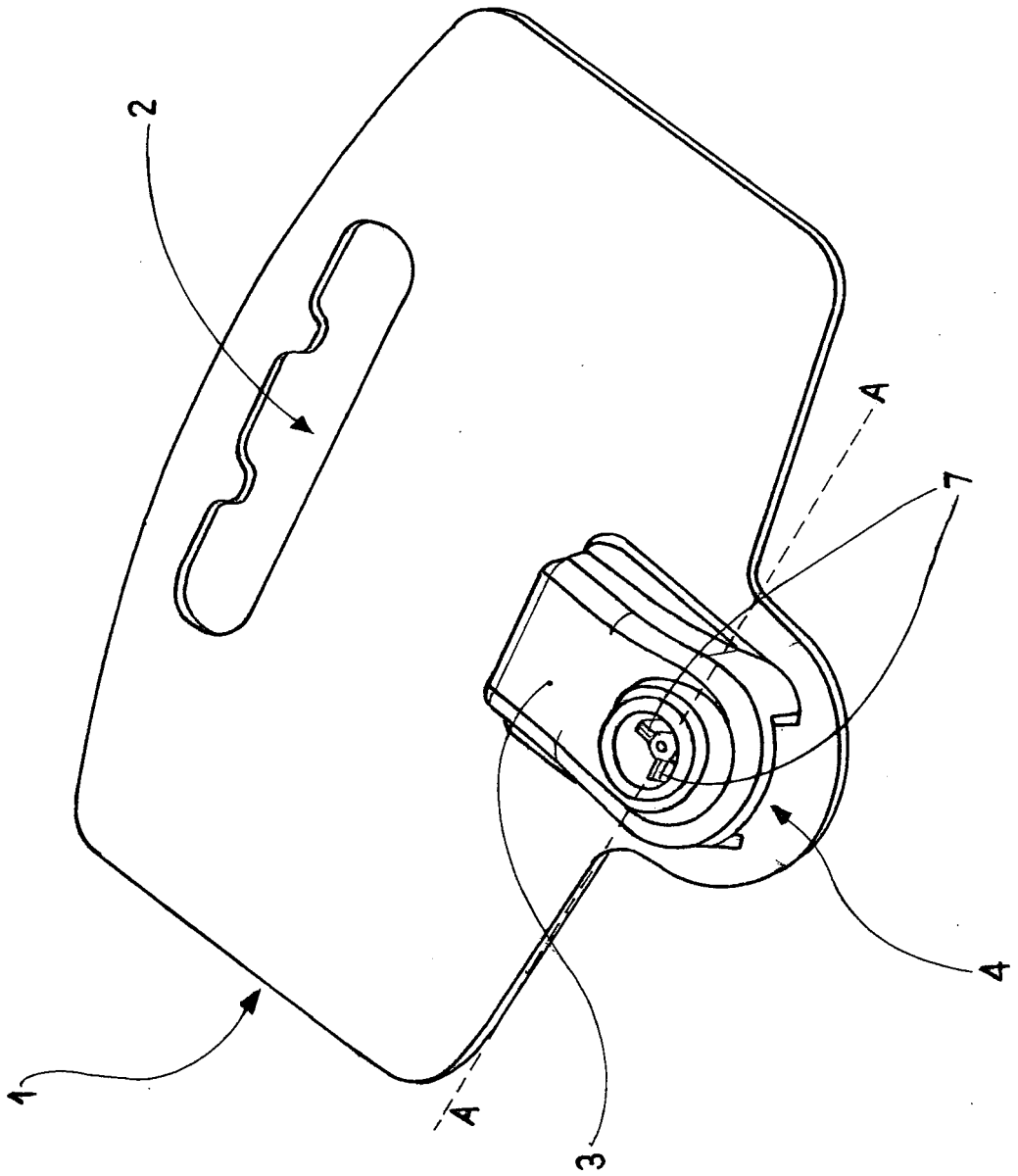

Fig.1

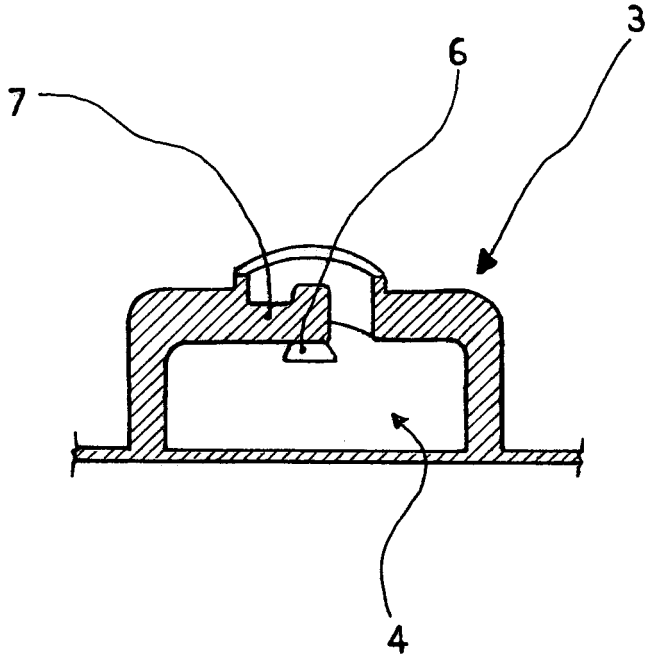

Fig. 2

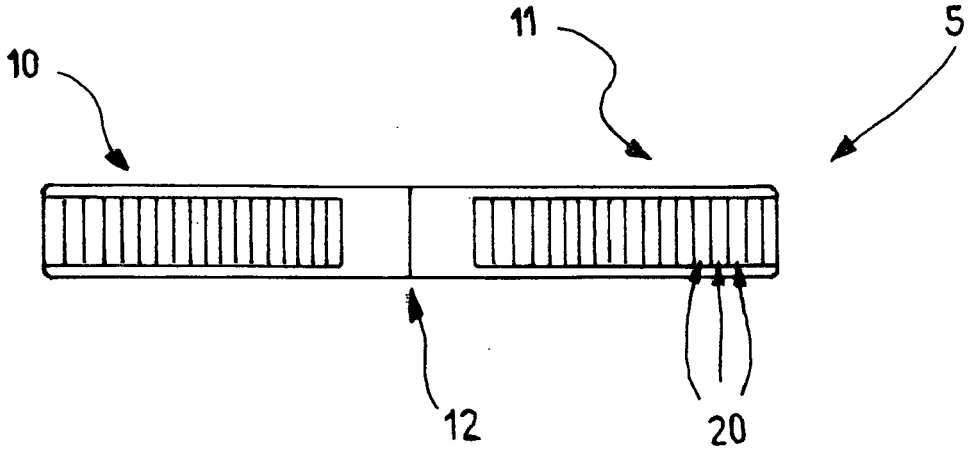

Fig. 3

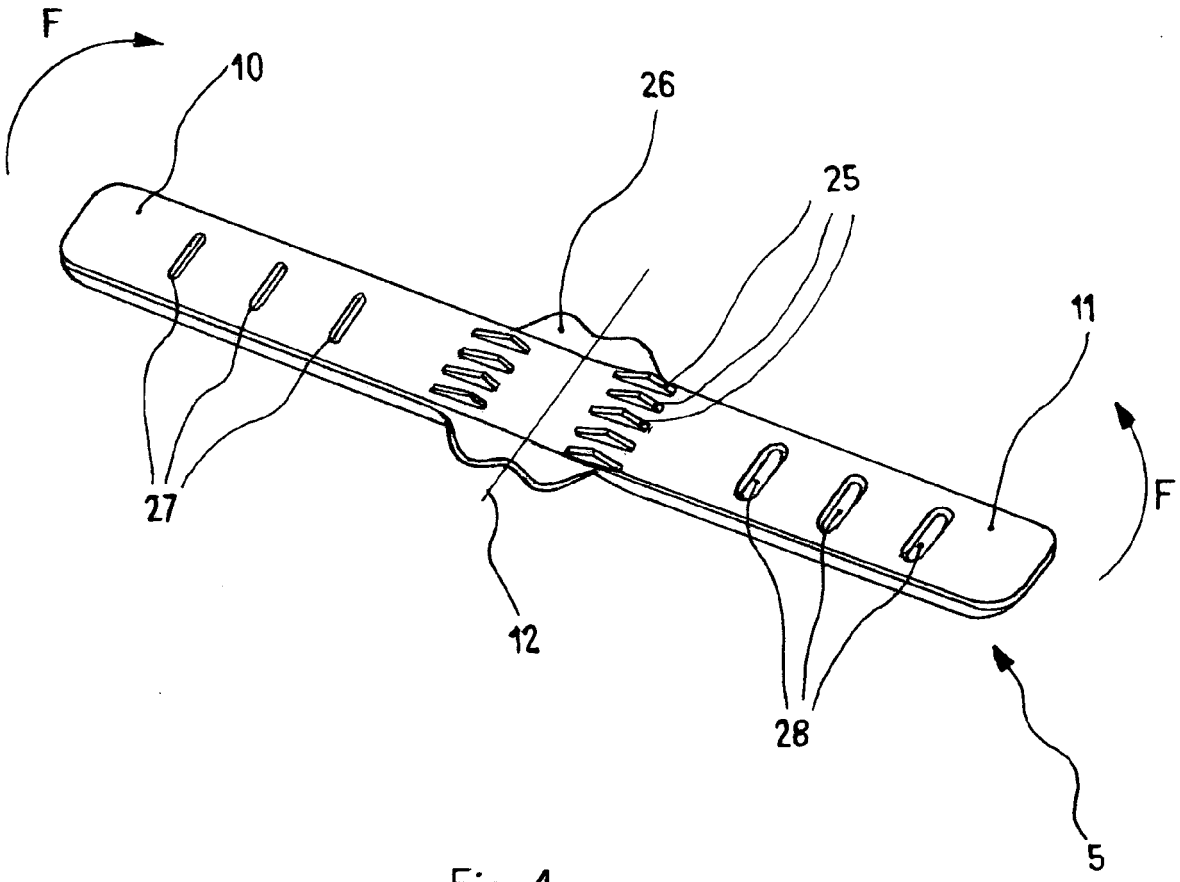

Fig. 4

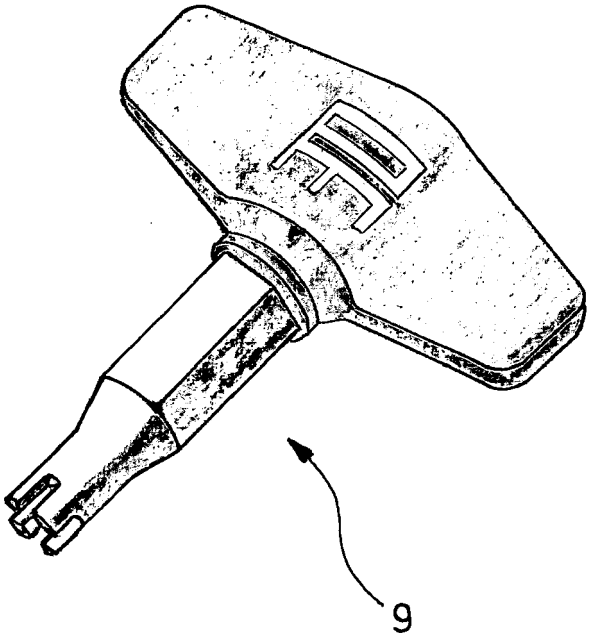

Fig.5

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EUROPEAN SEARCH REPORT

Application Number
EP 08 42 5638

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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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
Munich	25 March 2009	Friedrich, Albert

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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