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(54) **Antitheft device for eye glasses**

(57) Anti-theft device for eye glasses comprising a block (1) made up of a base plate (2) and a transverse bridge (3) for inserting a temple (11) of the eye glasses provided with means for blocking the temple of the eye glasses composed of a movable plate (10) and of a pro-

tective gasket (12) for the temple (11); an alarm device in the form of a strip of paper or similar is positioned in a seat (14) made in said base plate (2), closed by a transparent plate (15), irremovably applied on said seat (14).

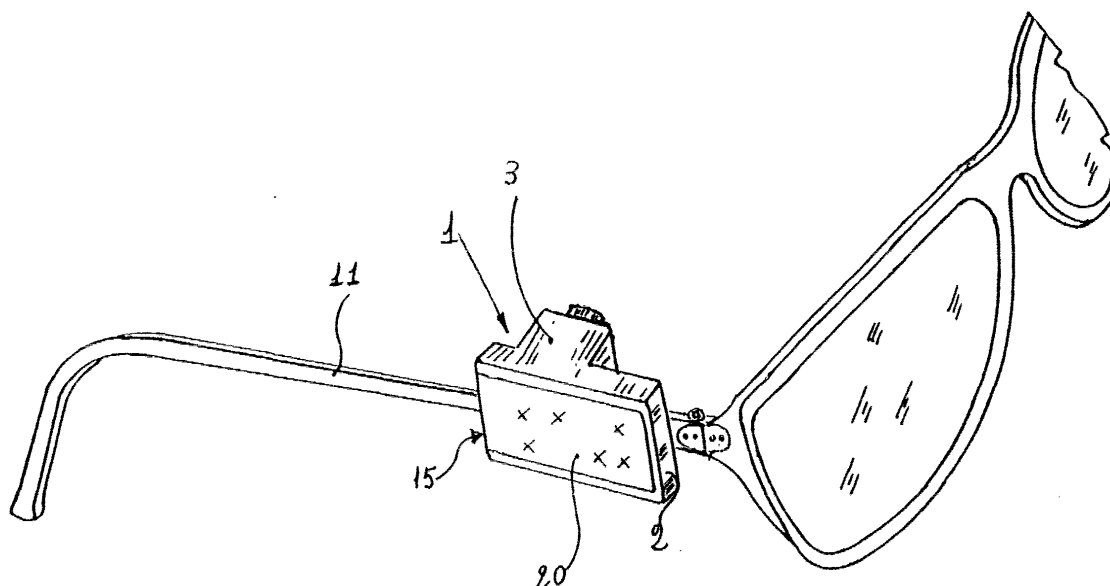


fig. 6

EP 1 152 111 A1

Description

[0001] The present invention refers to an anti-theft device for eye glasses with side supports or temples on display to the public in shops, large department stores and similar premises.

[0002] As is known, in order to prevent the theft of eye glasses freely displayed to possible buyers with the possibility of trying them on before purchasing them, various protection devices have been proposed, some of which are very simple, for example composed of a casing of plastic material which leaves the eye glasses on view, or of the application on the eye glasses of large, fairly rigid labels; in other cases, blocks are provided, composed of two parts that fasten together, of various shapes or sizes, which are fitted onto at least one side support or temple and blocked, around or close to the hinge, with various systems that can be opened at the time of purchase only by the seller.

[0003] In practice, these known devices present various inconvenient aspects as they do not prevent the illicit removal of the eye glasses and their concealment in a pocket, or they are bulky or not very practical when the eye glasses are being tried on.

[0004] The present blocking devices composed of rigid bodies enclosing the temple of the eye glasses and fastened together by means of snap or screw elements, can damage the temple during trial due to the inevitable interplay that is created between the blocking parts and the temple itself.

[0005] An anti-theft device has been realised and made available which is composed of a blocking part provided with a flexibly yielding structure, presenting a protruding flexible tab which acts as a spacer between the device itself and the lens and prevents any damage to the spectacle lens due to impact or rubbing against the device. This device is very effective, but it is rather bulky and complex and is therefore rather expensive to make. Moreover it does not allow folding of the temple on which the device is fitted, so it requires greater space to display the eye glasses.

[0006] The aim of the present invention is to realise an anti-theft device for eye glasses with temples on show to the public, conceived and structured in such a way as to eliminate the inconveniences presented by the devices of the prior art, whatever the shape of the cross section of the temples of the eye glasses and the dimensions of the temples, allowing ease of trying on the face in every case.

[0007] Another aim of the invention is to realise an anti-theft device of the type specified above, structured in such a way as to allow display without risk of damage to the temple or to the lens of the eye glasses, even after they have been tried on numerous times.

[0008] A further aim is to realise an anti-theft device suitable for side supports or temples with various section and shape, with stable blocking in every case and great ease of release at the time of sale, by means of a

special release key.

[0009] Again a further aim is to realise an anti-theft device that easily disassembled and reassembled and reused, with a clear saving from both the practical and the economic point of view, and to allow the application on at least one flat side of a label bearing information, trade mark, bar code, alarm device, advertising slogans and so on.

[0010] Yet another aim is to realise and supply an anti-theft device for eye glasses that is transparent, extremely light and very compact, therefore with small dimensions which do not disturb the user when trying on the eye glasses, while the transparency and compactness avoid spoiling the style and appearance of the eye glasses on display. These and other aims, which can clearly be seen from the following description, are achieved by an anti-theft device for eye glasses with temples to be displayed to the public, comprising:

- 20 - a block comprising a base plate and a transverse bridge integral with said plate for inserting one temple of the eye glasses, said bridge and/or said base plate being provided with at least one seat or through hole;
- 25 - means for associating said base plate with an element chosen among an anti-theft alarm device and/or a bar code and/or a reproduction of the trade mark or similar; and
- 30 - means for blocking said temple of the eye glasses inside said bridge, comprising a pin housed in said seat or through hole and mobile between a first blocking position of said temple and a release position of the same.

35 **[0011]** More particularly, said pin and said seat or through hole present corresponding threads for screwing in said pin until it disappears inside said seat and for blocking the position of said pin in said seat or through hole.

40 **[0012]** Moreover, on said blocking pin is fitted a plate that can move inside said bridge with said pin to engage the temple of the eye glasses.

45 **[0013]** According to an advantageous aspect of the present invention, the block comprises an element of flexibly yielding material such as rubber, soft plastic or similar, suitable for coming in contact with the temple of the eye glasses without spoiling it, but exerting sufficient resistance to friction, so as to prevent the temple being slipped out of the anti-theft device once the plate is blocked on the temple of the eye glasses.

50 **[0014]** To give stability to the temple both during and after blocking, a straight groove may be realised in the base plate of the block, substantially with an arched cross section, suitable above all for gripping temples with a circular or polygonal section.

55 **[0015]** According to the present invention, said base plate comprises a seat suited for firmly and irremovably containing said alarm device, bar code, slogans, trade

marks and similar applied for example on a strip of paper or similar. According to a preferential aspect of the present invention, said seat suited for containing said alarm device comprises a covering plate provided with means for fixing it to said seat.

[0016] In this way the alarm device, for example applied on one of the sides of the strip of paper, remains fixed between a surface of the base plate and the covering plate and cannot be removed; the covering plate is preferably made of transparent material, so that trade marks, advertising slogans and similar can be applied on the opposite side of the same strip of paper and are thus visible to the public. The device according to the present invention is therefore used for a dual purpose, theft prevention and advertising.

[0017] As mentioned above, according to the present invention, said device comprises a removable key, which may be separated from the device and is normally kept by the seller, for screwing and unscrewing said threaded pin.

[0018] According to an advantageous aspect of the present invention, said key is made with a length longer than the dimensions of the eye glasses and of the side supports or temples, so that it can be easily operated on said pin without any part of the eye glasses interfering with the operator's movement and hampering it or slowing it in any way. Moreover, still with the aim of facilitating the operator's movement, the grip of the key is grooved and with a gradually increasing diameter towards the end opposite the one with the cross-shaped bit.

[0019] Further characteristics and advantages of the present invention will be shown by the following description, referring to the enclosed drawings, in which:

figure 1 schematically shows in transparency on an enlarged scale the anti-theft device for eye glasses according to a preferential embodiment of the present invention;

figure 2 schematically shows in section the anti-theft device in figure 1, in completely closed position;

figure 3 schematically shows in section the anti-theft device in figure 1, blocked on the temple of a spectacle frame;

figure 4 shows a removable key for operating the pin that closes the device;

figure 5 shows in detail the closing plate of the seat containing the alarm device, according to a preferential embodiment of the present invention;

figure 6 schematically shows a spectacle frame fitted with the anti-theft device in figure 1;

figure 7 shows an enlarged side view in section of the anti-theft device according to an alternative embodiment of the present invention;

figure 8 shows an exploded view of the movable plate and the threaded pin according to an alternative embodiment of the present invention;

figure 8a shows a view from above of the movable

plate shown in figure 8,

figure 9 shows in detail the element in yielding material according to an alternative embodiment of the present invention; and

figure 10 shows a view from above of the anti-theft device with the covering plate removed according to an alternative embodiment of the present invention.

[0020] With reference to the figures from 1 to 6, provided purely as an example without limitation of the present invention, the anti-theft device according to a preferential embodiment of the present invention comprises the block 1 of rigid material, substantially rigid plastic, preferably transparent, comprising the base plate 2 and the transverse bridge 3 suited for allowing the passage with play of a temple 11 of a spectacle frame; the bridge 3 is provided at the top with a threaded hole 4 inside which the threaded pin 5 is screwed until it disappears inside the hole by means of the special key 6 which acts on the top end of the pin. At the top end of the threaded pin is a cross-shaped slot 13 to be turned by means of the key 6 provided with a cross-shaped bit arranged in such a way that it engages the slot 13 of the pin 5. At the base of the threaded pin 5 is the protruding element 7 at the end of which is a mushroom head 8. The protruding element 7 and its head 8 can turn freely inside the cavity or seat 9 present on the upper surface of the plate 10 which is thus connected, swinging and turning freely around the pin 5. When the pin is tightened or loosened, there is thus a vertical movement of the plate 10 until it engages the temple 11 of the eye glasses and grips it between the bottom face of the plate 10 and the inside surface of the base plate 2, as shown in figure 3. As has already been said, the pin 5 is screwed into the threaded seat 4 with the key 6 until it disappears, so it is impossible to unscrew it and thus free the spectacle temple from the anti-theft device in the invention without the special key 6. The inside face of the plate 10 is covered with a layer 12 of flexibly yielding material such as, for example, silicone rubber or similar. This layer of rubber prevents the surface of the spectacle temple being damaged during operation of the pin and at the same time increases the friction on the temple and constitutes a further safety element against illicit removal of the temple from the device.

[0021] The initial assembly of the anti-theft device from the detached parts, obviously produced separately by moulding, is accomplished very simply by positioning the movable plate 10 inside the bridge 3 on the internal surface of the base plate 2 and screwing the pin 5 all the way in with the key 6: in this way the mushroom head 8 is forced against the opening of the seat 9, made to yield flexible, for example by making a certain number of vertical through cuts around the opening itself, thus causing the head to enter the seat and connection of the plate with the threaded pin.

[0022] To disassemble the device for any reason, it is sufficient to fully unscrew the pin with the key 6, letting the plate come up until it forces the top of the seat 9 against the upper inside surface of the bridge 3, thus causing the head 8 to come out of the seat 9 and consequent detachment of the plate from the pin. Alternatively, the seat 9 of the plate is open on one side to allow lateral snap-in insertion of the plate on the head 7. In this case, to remove the plate, push it in the opposite direction to the one in which it was inserted.

[0023] The anti-theft alarm device of a prior art, and applied for example on a strip of paper or similar, is placed in the seat 14 created in the outer surface of the base plate 2 closed by the covering plate 15; the plate 15 is snapped into the groove 16 created in the frame 17 that runs around three sides of the base plate 2. Once it has been fully inserted, the covering plate 15 cannot be slipped out as the protruding flexible elements 18, 18a present on the edges of the plate are caught and irremovably blocked in the cavities 19 and 19a respectively (fig. 1), present in the groove 16; in this way the alarm device placed in the seat 14 cannot be removed without breaking and destroying the anti-theft device.

[0024] On the exposed face 20 of the same strip bearing the alarm code, wording, trade marks and similar may be applied which are visible to the public through the transparent covering plate 15.

[0025] According to an alternative embodiment, shown in the figures from 7 to 10, the bridge 3 is provided with a hole 4", not threaded, and the base plate 2 is provided with as seat or threaded through hole 4' substantially coaxial with the hole 4".

[0026] Inside the hole 4' the threaded pin 5' may be screwed until it disappears and unscrewed with the special key 6, which in this case can act on both the top end and the bottom end of the pin 5'. For this purpose, see figure 8, the threaded pin 5' is provided at both top and bottom with a cross-shaped slot 13' which can be engaged with the key 6 provided with a cross-shaped bit. At the base of the threaded pin 5' is an element with a countersunk head 8'. The element with a countersunk head 8' engages with the cavity or seat 9' present on the upper surface of the plate 10' and provided with a side opening for inserting on the head 8' of the pin 5'. In order to avoid detachment of the pin 5' from the plate 10', the cavity or seat 9' presents countersunk walls, see figure 8, suited for coupling with the countersunk walls of the element 8'. When the pin is tightened or slackened, with the key engaged in the special upper cavity, there is vertical movement of the plate 10' and gripping of the temple 11 of the eye glasses between the lower face of the plate 10' and the inside surface of the transverse bridge 3 opposite the plate 10'.

[0027] In this case the element of flexibly yielding material does not cover the lower face of the plate 10', but the inside surface of the bridge opposite the plate itself. For this purpose a protruding portion 21' of the element 12' in yielding material (see figure 9) is provided which

engages the non threaded hole 4" of the bridge.

[0028] The assembly of the anti-theft device, in this case, is accomplished by positioning the pin 5' in the special seat or hole 4', passing it through the hole 4" (which has larger dimensions than the threaded hole 4' and such as to allow the passage of the pin 5'), and screwing it with the key 6 engaged in the cavity 13' created on its lower surface to a depth such as to allow insertion in the bridge, through a side opening, of the plate 10' and the blocking of the countersunk head 8' of the pin 5' in the seat 9'. At this point it is possible, still screwing the pin but with the key engaged in the upper cavity, to raise the plate 10' sufficiently to allow the insertion of the element 12' in yielding material inside the bridge and the blocking of its protruding portion 21' in the seat or hole 4".

[0029] The anti-theft alarm device is placed in the seat 14' created in the outer surface of the base plate 2. In this embodiment, the plate 2 presents the flexible blocking elements 18' and 18'a while the covering plate 15' presents a groove 16' created in the frame 17' that runs around three sides of the plate 15' and the cavities 19' and 19'a for blocking the elements 18', 18'a (see figure 10). Once it has been fully inserted, the covering plate 15' cannot be slipped out as the protruding flexible elements 18', 18'a present on the edges 22' of the base plate are caught and irremovably blocked in the cavities 19' and 19'a respectively, present in the groove 16'; in this way the alarm device placed in the seat 14' cannot be removed without breaking and destroying the anti-theft device.

[0030] In practice, instead of a screw with a control key, other means may also be used for blocking the device described above, for example a lever swinging across the temple which may be snap-fastened by the pressing of grooves present on the lever against fixed teeth emerging inside the rigid bridge 3; release may be accomplished by means of a shaped tool that is able to free said swinging lever from the teeth that hold it.

[0031] However, in practical realisation, further structurally and functionally equivalent modifications and variations may be made to the invention as described and illustrated, without departing from the area of protection of the present invention

Claims

1. Anti-theft device for eye glasses with temples on display to the public, **characterised in that** it comprises:
 - a block (1) comprising a base plate (2) and a transverse bridge (3) integral with said plate (2) for inserting a temple (11) of the eye glasses, said bridge (3) and/or said base plate (2) being provided with at least one seat or through hole (4,4',4");

- means for associating said base plate with an element chosen among an anti-theft alarm device and/or a bar code and/o a reproduction of the trade mark or similar; and
 - means for blocking said temple of the eye glasses inside said bridge (3) comprising a pin (5) housed in said seat or through hole (4,4') and mobile between a first blocking position of said temple and a release position of the same.
2. Anti-theft device for eye glasses according to claim 1, **characterised in that** said pin (5) and said seat or through hole (4,4') present corresponding threads for screwing in said pin (5) inside said seat (4,4') and for blocking the position of said pin (5) in said seat or through hole.
3. Anti-theft device for eye glasses according to claim 1 or 2, **characterised in that** on said blocking pin (5) is fitted a plate (10) that can move inside said bridge (3) with said pin (5) to engage said temple (4) of the eye glasses.
4. Anti-theft device for eye glasses according to any one of the previous claims, **characterised in that** it comprises at least one element (12) of flexibly yielding material such as rubber, soft plastic or similar, suitable for coming in contact with said temple (11) of the eye glasses.
5. Anti-theft device for eye glasses according to claim 3 or 4, **characterised in that** said pin (5) is connected to said plate (10) in a swinging way with a mushroom element (7) protruding from the base of the pin (5), the head (8) of said mushroom being held turning freely within a seat (9) present on the upper face of said movable plate (10).
6. Anti-theft device for eye glasses according to claim 3 or 4, **characterised in that** said pin (5') is connected to said plate (10') by an element with a countersunk head (8') protruding from the base of the pin (5'), the head of said countersunk element being engaged in a seat (9') present on the upper face of said movable plate (10').
7. Anti-theft device for eye glasses according to any one of the claims from 4 to 6, **characterised in that** said base plate (2) is located on the side opposite the hole (4) of said bridge (3).
8. Anti-theft device for eye glasses according to any one of the claims from 4 to 6, **characterised in that** said base plate (2) presents a threaded hole (4') and said bridge (3) presents a further hole (4'') substantially coaxial with said threaded hole (4').
9. Anti-theft device for eye glasses according to claim 1, **characterised in that** said base plate (2) comprises a seat (14) suited for firmly and irremovably containing said alarm device, bar code, slogans, trade marks and similar applied for example on a strip of paper or similar.
10. Anti-theft device for eye glasses according to claim 9, **characterised in that** it comprises a covering plate (15) provided with means for fixing it to said seat (14).
11. Anti-theft device for eye glasses according to claim 10, **characterised in that** said covering plate (15) is made of transparent material, so that trade marks, advertising slogans and similar applied on said strip of paper or similar are visible to the public.
12. Anti-theft device for eye glasses according to any one of the previous claims **characterised in that** it comprises a removable key (6), which may be separated from said device and is normally kept by the seller, for screwing and unscrewing said threaded pin (5).

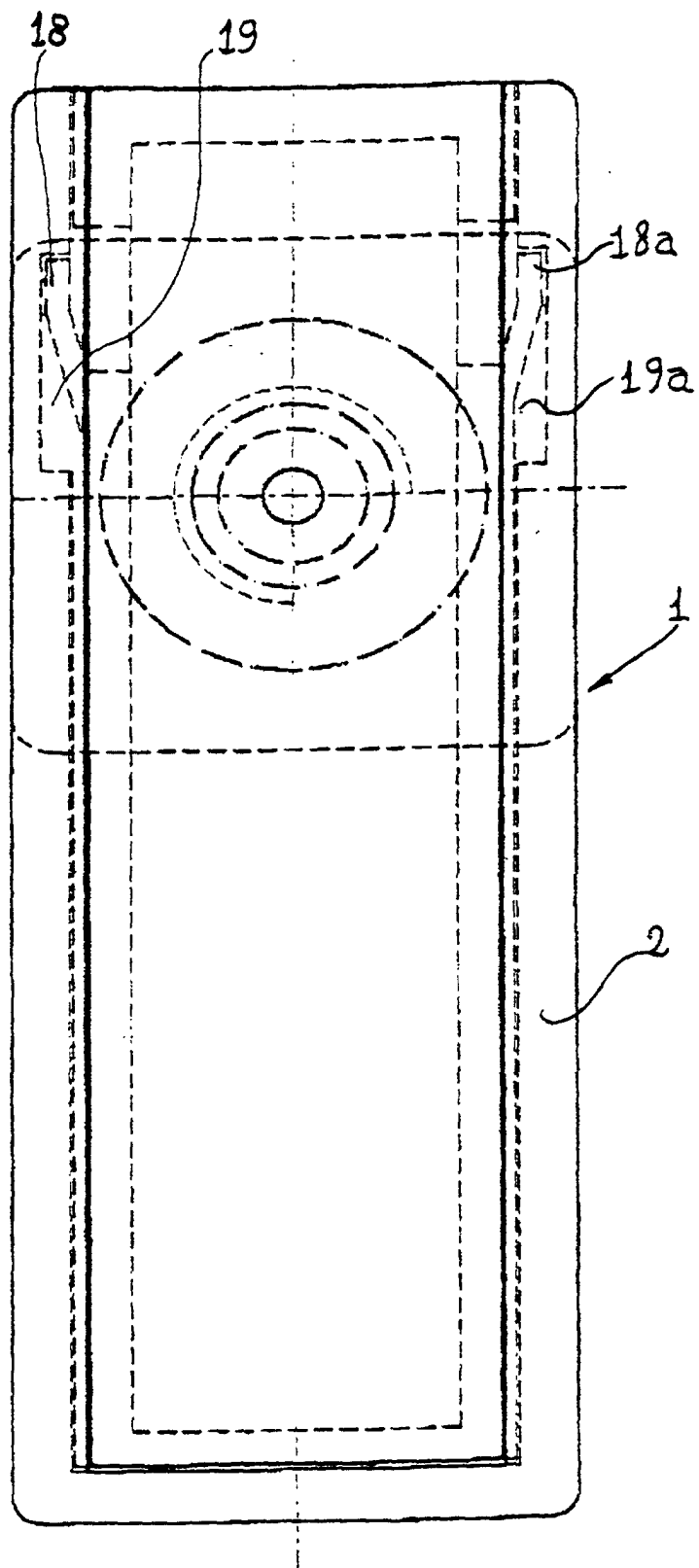


fig.1

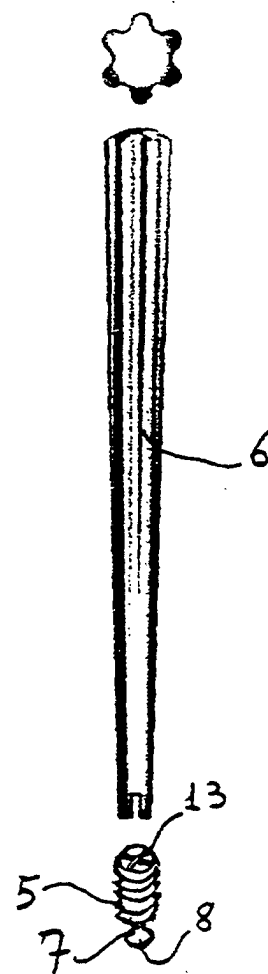


fig.4

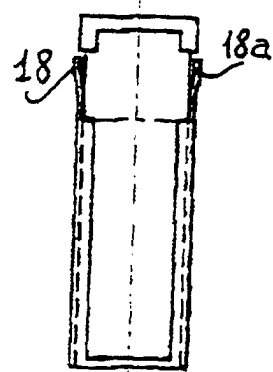


fig.5

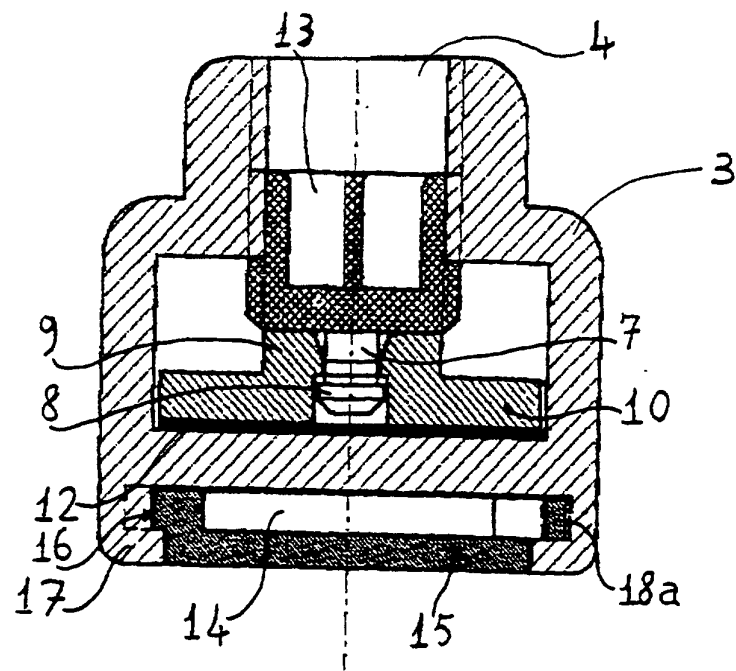


fig. 2

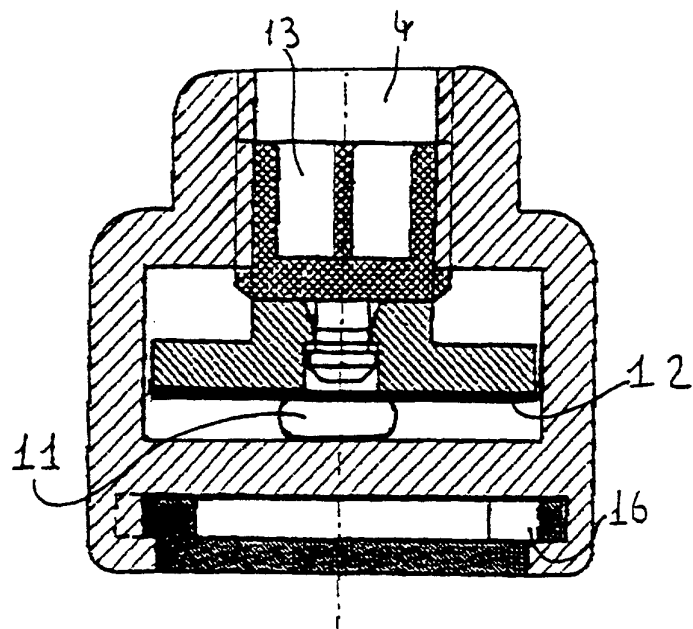


fig. 3

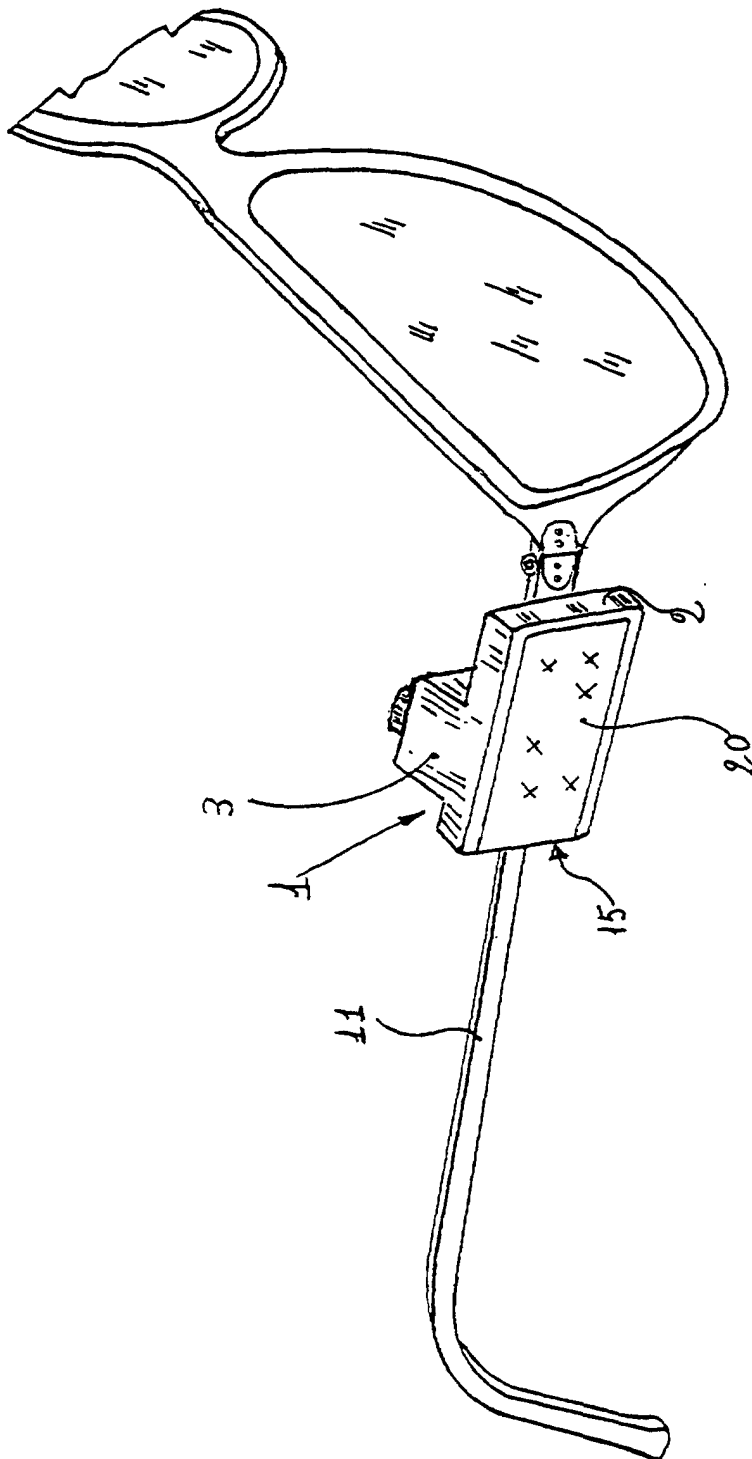
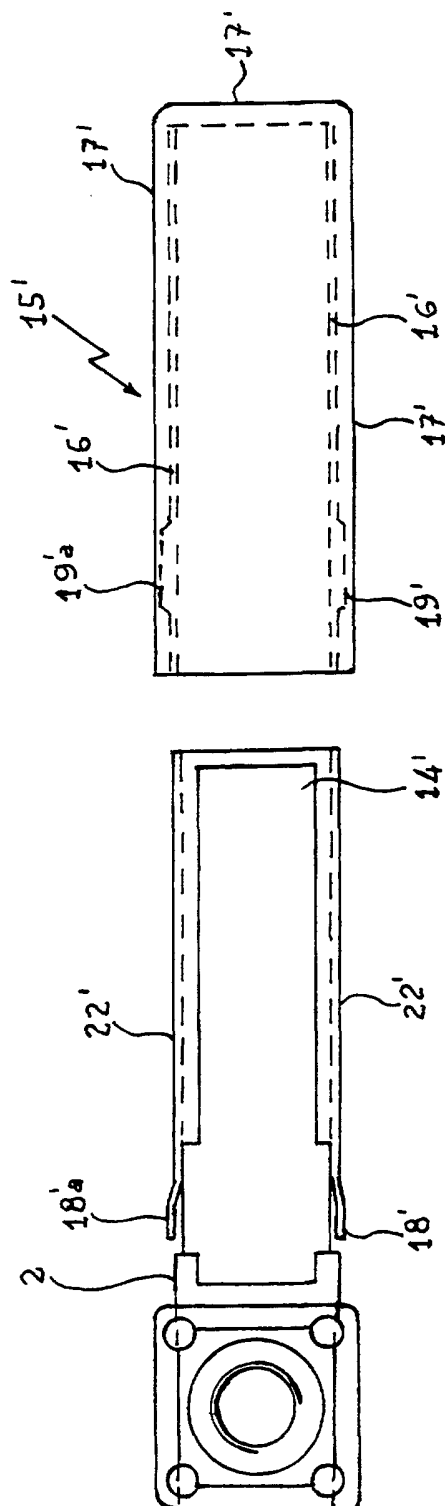
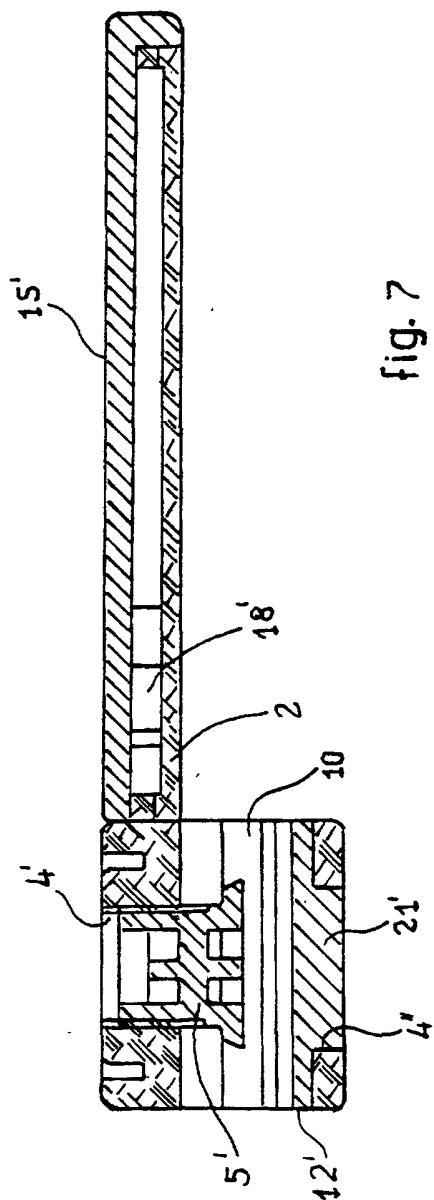


fig. 6



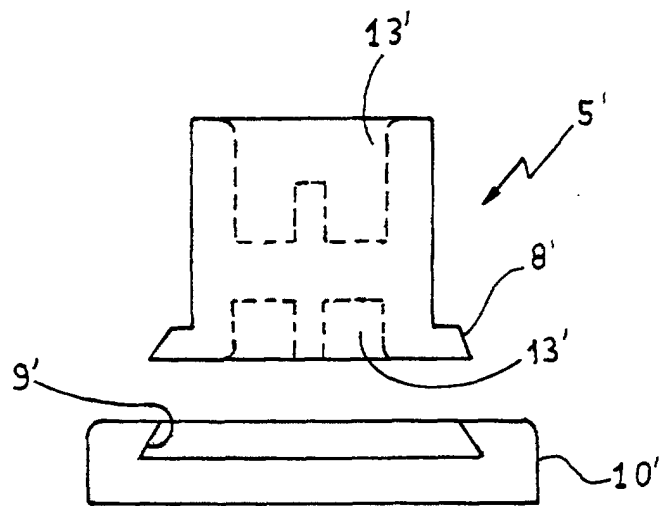


fig. 8

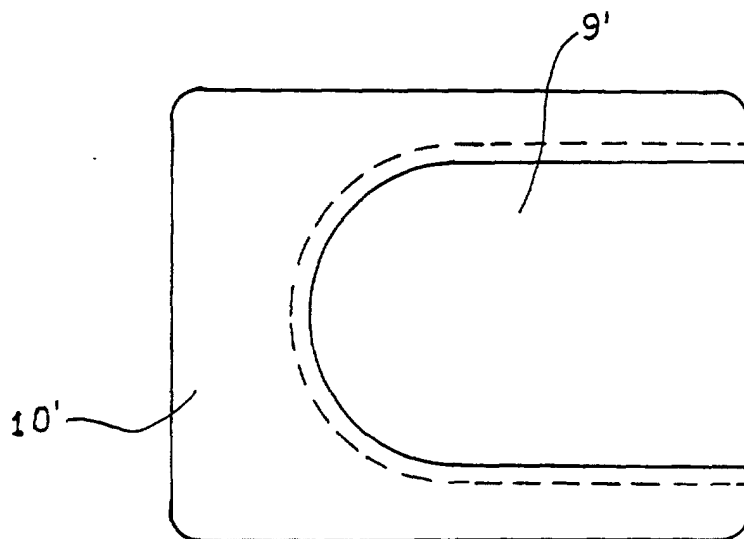


fig. 8a

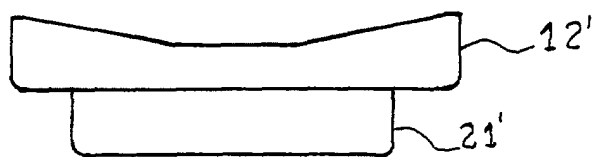


fig. 9



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EUROPEAN SEARCH REPORT

Application Number
EP 01 11 0784

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A	* column 3, line 40 - column 4, line 61; figure *	11	
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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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
THE HAGUE		15 August 2001	Pieracci, A
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