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WO 2006/125167 A1 US 5956760 A  
US 5752280 A US 5697100 A  
US 3298031 A US 1962818 A

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Other: EPODOC, WPI

(54) Title of the Invention: **Improvements to goggles**  
Abstract Title: **Goggles with hinged guard**

(57) A pair of goggles is provided, to be worn over the eyes of a wearer, said goggles comprise: a frame 6; a lens supported by said frame 6 to at least partly cover the wearer's eyes; a guard 16 movably attached, directly or indirectly, to frame 6 so it is movable between a lower position in which guard 16 is positioned at least partly below the eyes of the wearer and acts as a wind guard; and an upper position in which guard 16 is positioned at least partly above the eyes of the wearer in use. Strap 14 holds the goggles in place. Slot 68 in the arm 64 may be provided so that hinge 66 is moveable in the slot to adjust the forward position of the guard. Guard 16 may be made of fabric or neoprene in particular, and may be detachable. Guard 16 may be held in the upper position by friction or a by a catch (see notch 38 and recess 42, figure 2).

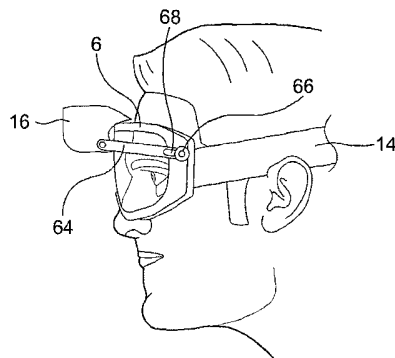


Figure 9a

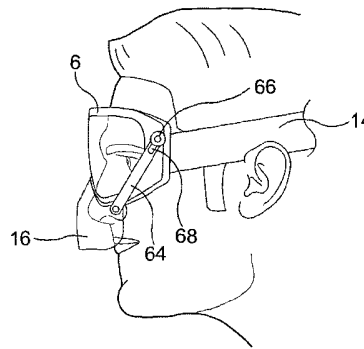


Figure 9b

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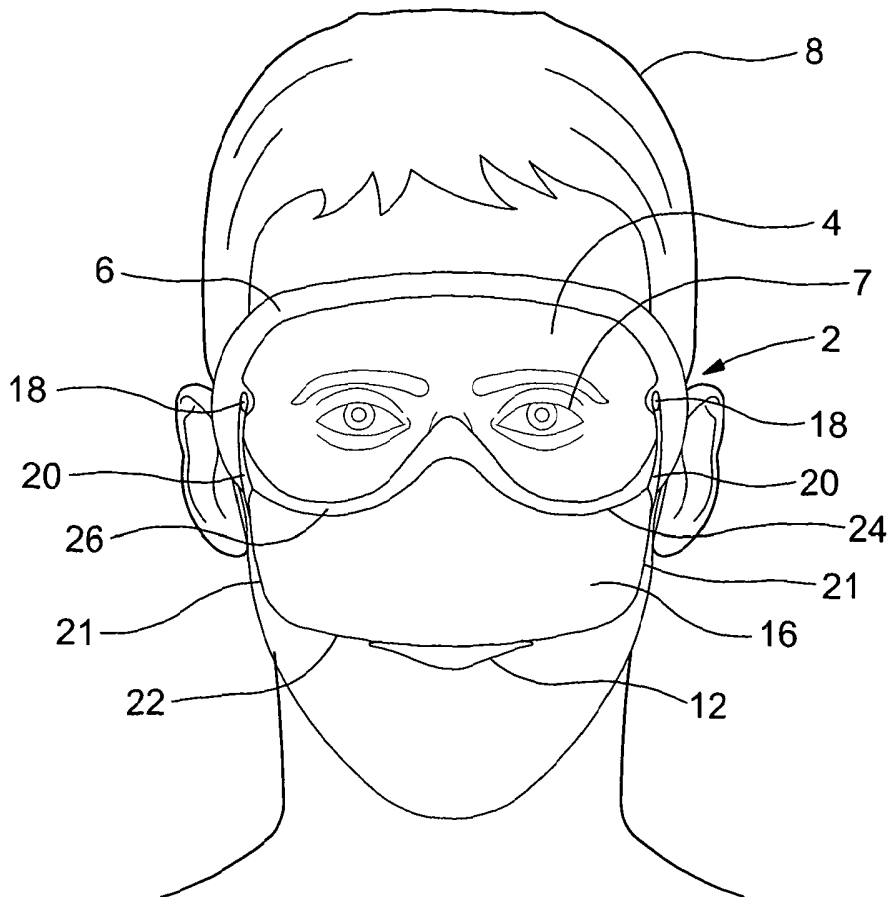


Figure 1

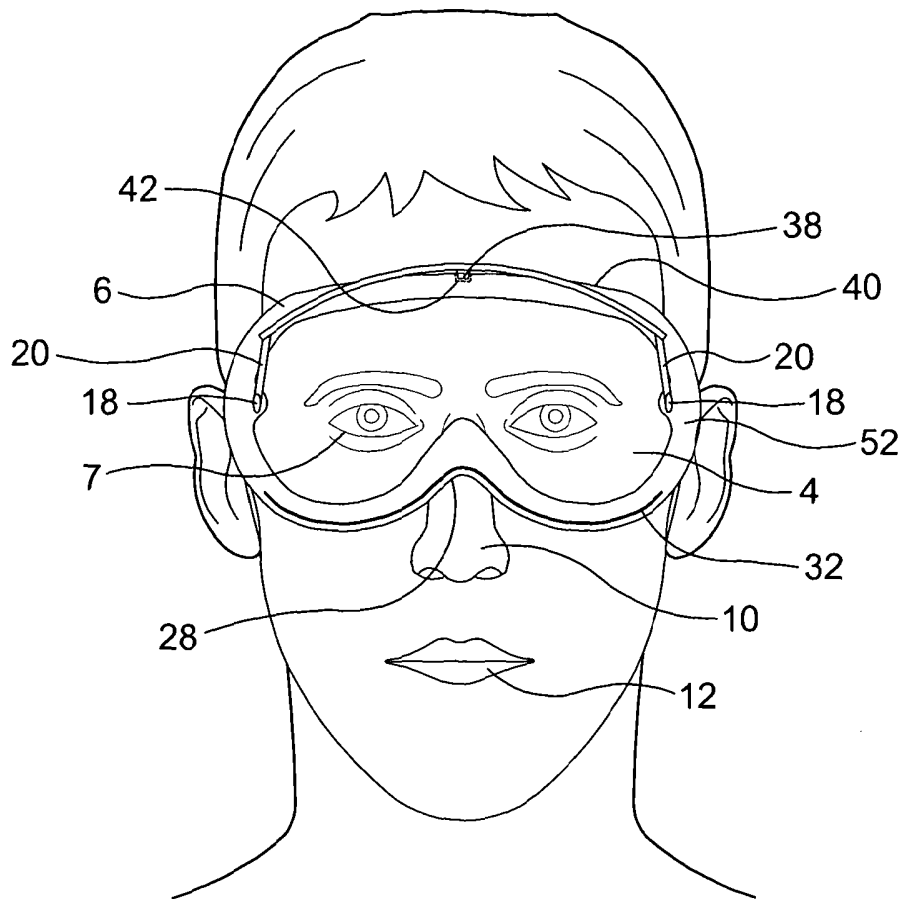


Figure 2

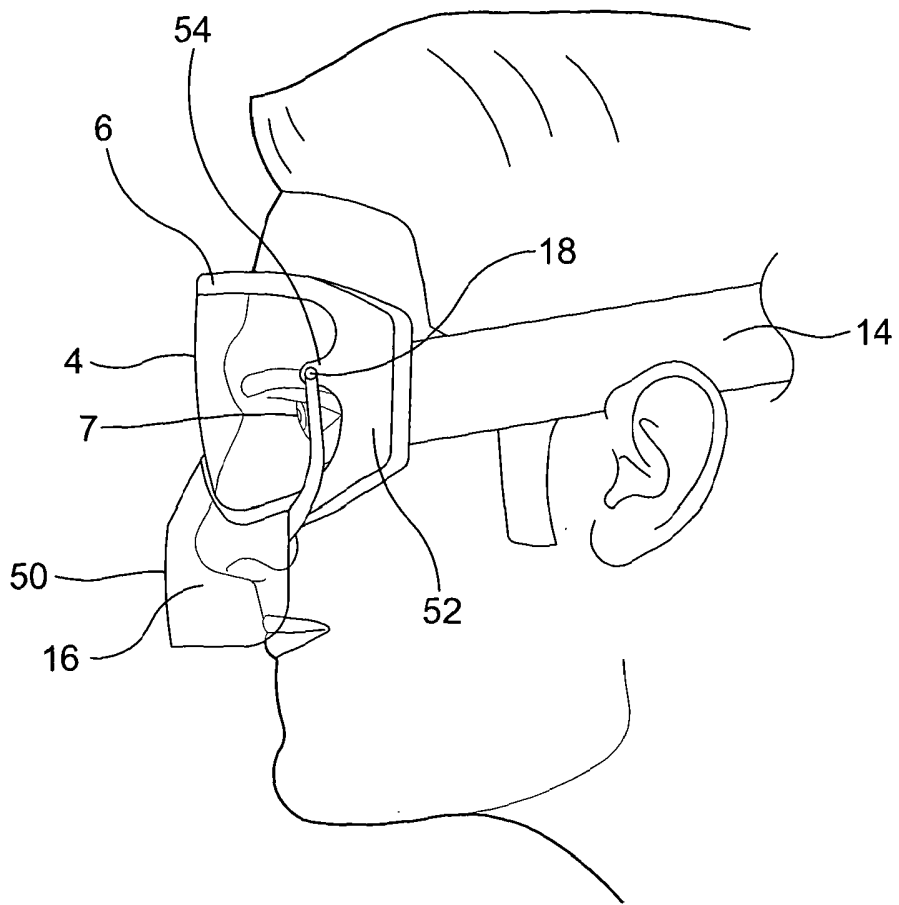
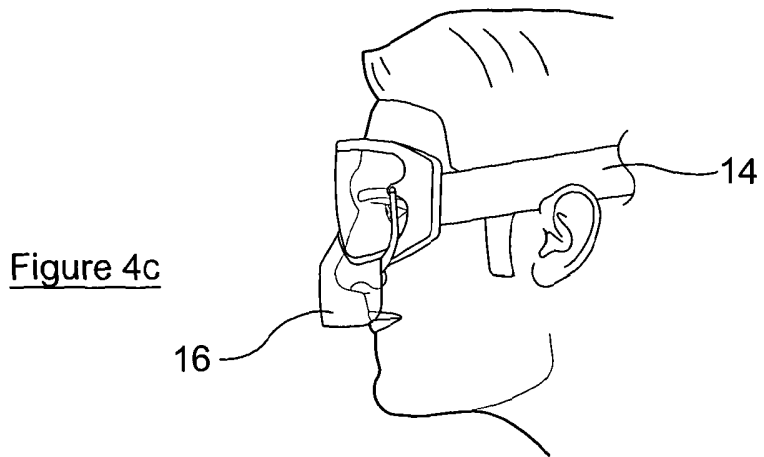
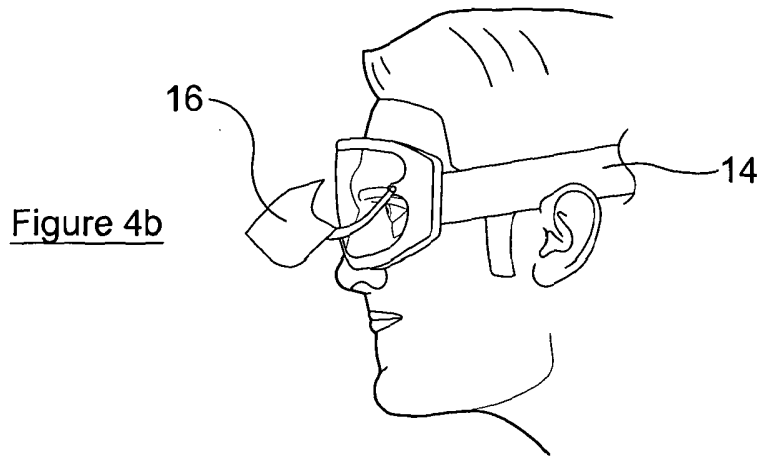
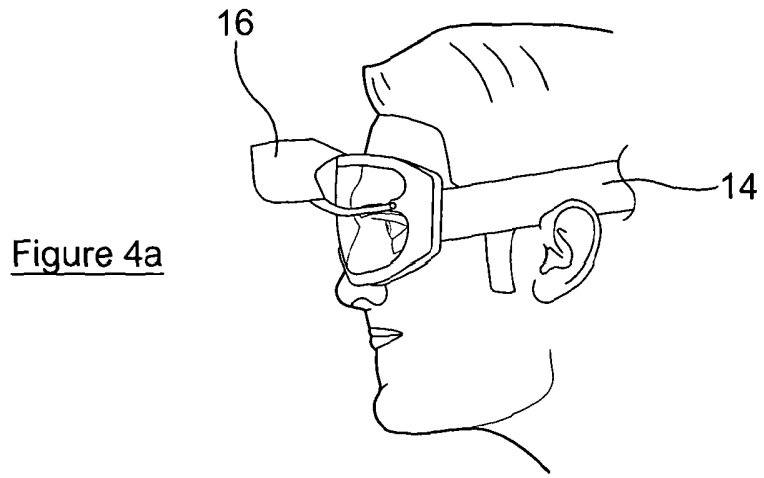


Figure 3



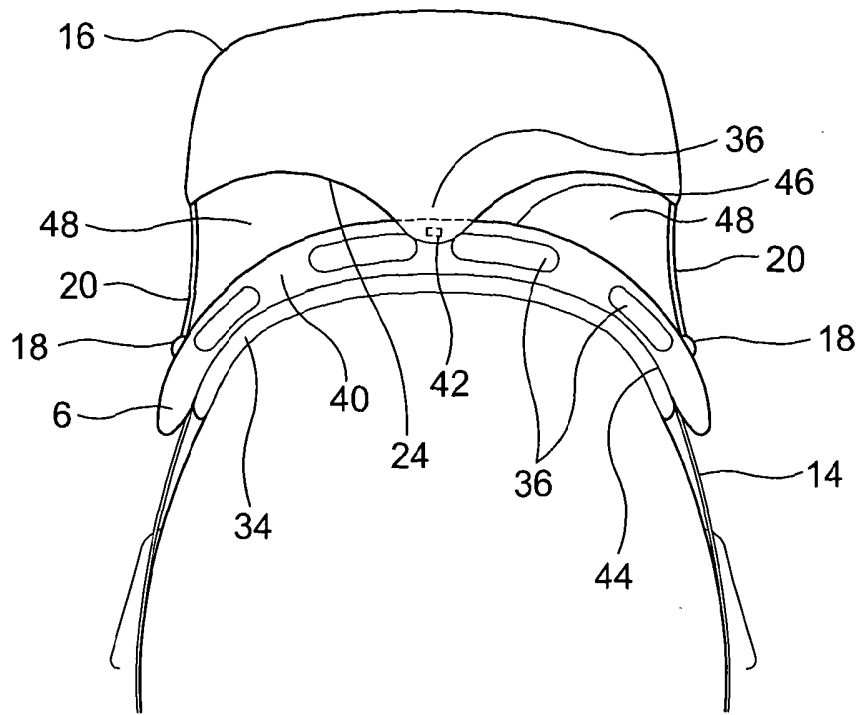


Figure 5



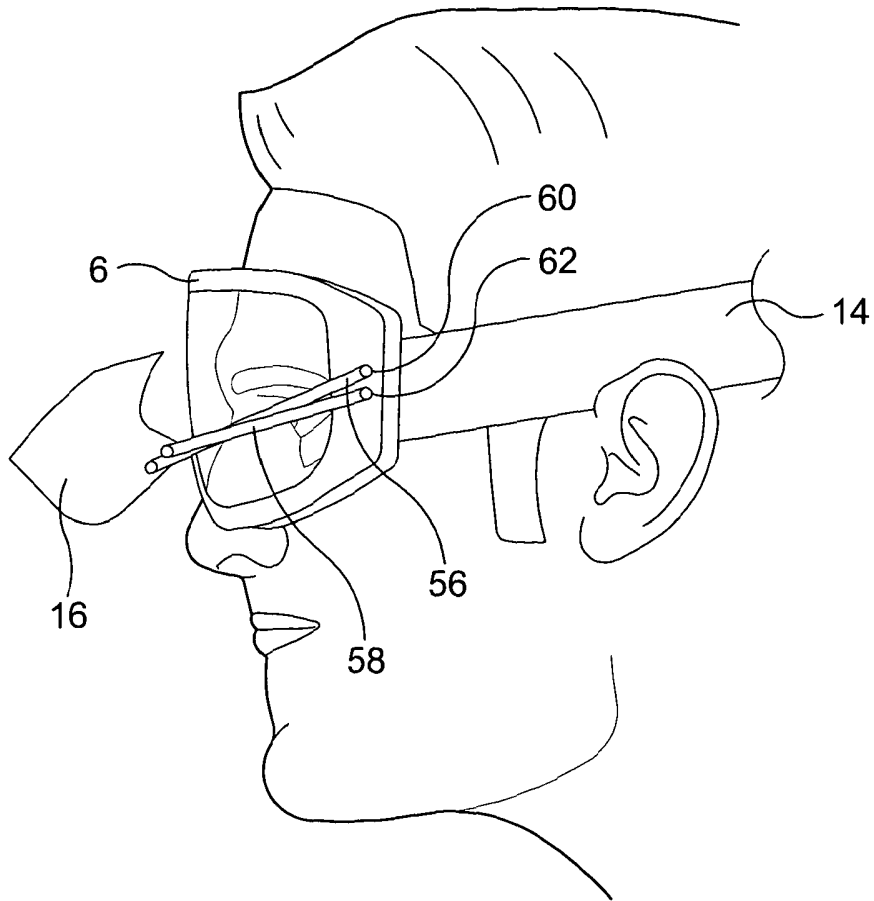


Figure 7



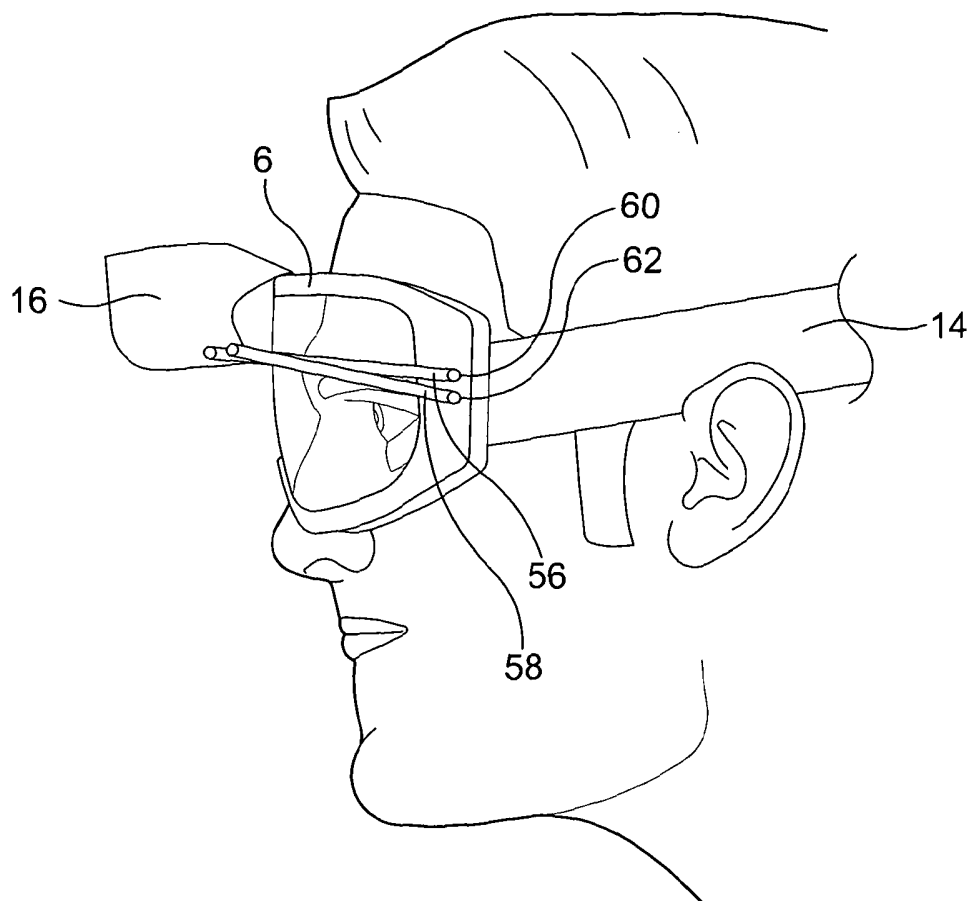


Figure 8

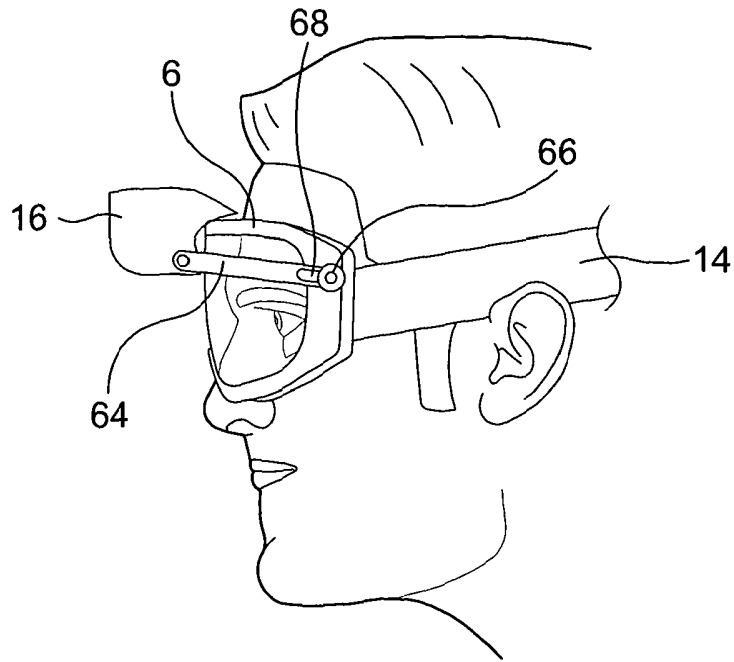


Figure 9a

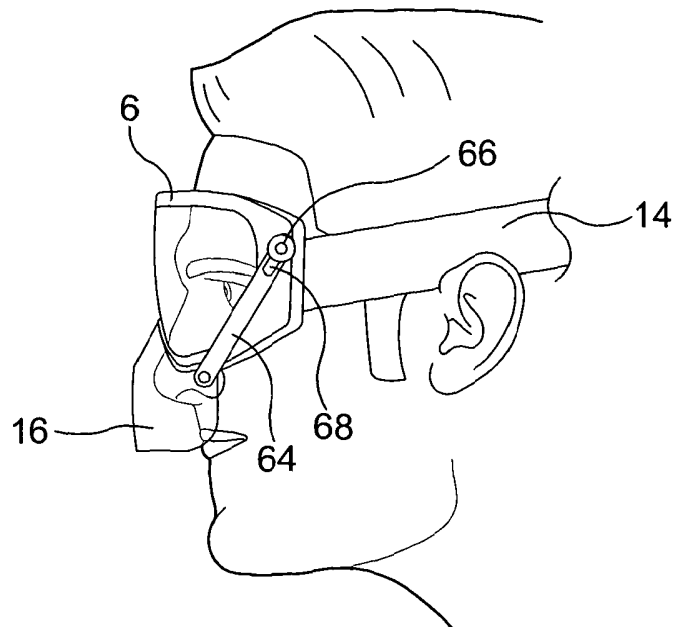


Figure 9b

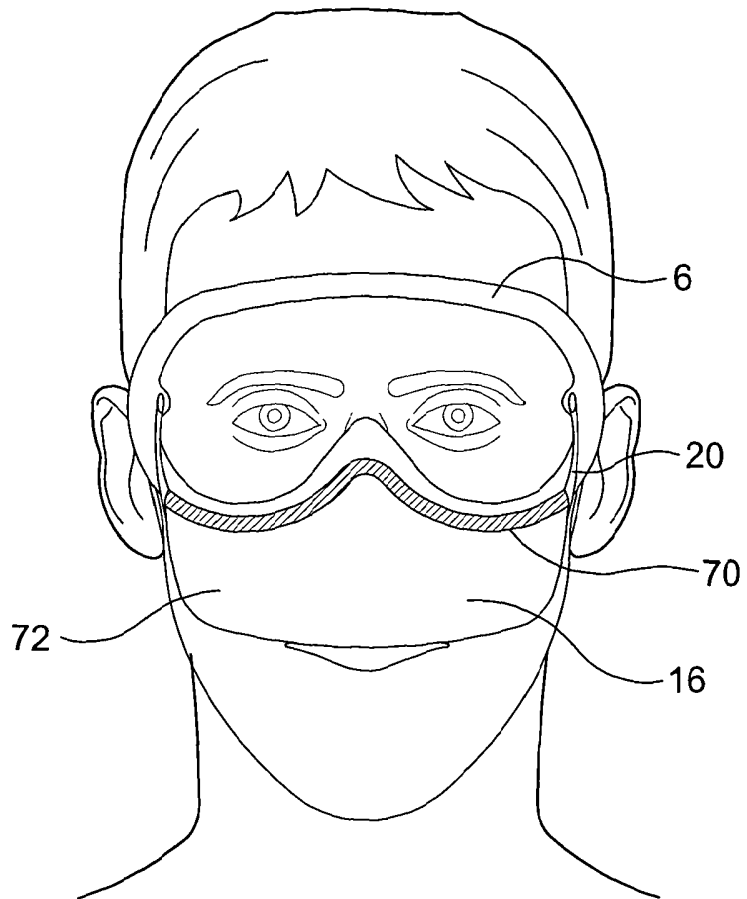


Figure 10

## Improvements to goggles

### Field of the invention

- 5 The invention relates to improvements to goggles, and a method of protecting the face, particularly for skiing and other winter sports.

### Background of the invention

- 10 The modern skier or snowboarder typically wears a pair of goggles which cover the eyes, but do not cover the nose or mouth. Such goggles usually reduce glare from the snow, but also protect the eyes from the cold air and wind. If skiing whilst it is snowing, the goggles also protect the eyes from snowflakes.
- 15 The rest of the face is often uncovered, which can cause significant chilling of the chin, mouth, nose and cheeks, particularly if the skier is moving fast through cold air. Some skiers wear a mask which covers the nose and mouth, such as that shown in JP9239050 (Yoshihiro). Similar masks made from neoprene, and having two hook-and-loop straps which fasten behind the wearer's neck, are available. However such a
- 20 mask is not easily put on and removed. The wearer may need to remove the mask at regular intervals, particularly if the mask restricts the breathing and/or speech and this cannot easily be done.

- Another problem with such a mask is that a proportion of exhaled air from the nose
- 25 and/or mouth tends to be directed upwards by the mask. This exhaled warm air contains moisture which tends to condense on the outside (and possibly also on the inside) of the goggles which results in fogging of the lens of the goggles, thus impairing vision. JP9239050 (Yoshihiro) seeks to address this problem by providing a flap 3 at the top of the mask, which is intended to seal the top of the mask thus
- 30 preventing exhaled air from reaching the goggles. Nevertheless the difficulties of putting on and removing the mask at regular intervals remain.

A more common solution to the abovementioned problem of chilling of the face is to pull up the collar of a jacket, or pull up a separate tube worn around the neck, so that at least the chin and mouth, and possibly also the nose and cheeks, are covered.

5 There are two problems with this. Firstly exhaled air is again directed up towards the goggles, and secondly the collar or tube can tend to slip down during use. The collar or tube can be tucked under the bottom edge of the goggles, but this is inconvenient (requiring the user to use two hands to lift the goggles away from the face), can be uncomfortable, and also breaks the seal around the goggles.

10 An alternative solution is shown in US 5,697,100 (Horowitz), in which a separate fabric strip, or "nose and cheek warmer" is removably attached to the bottom of a pair of goggles using "hook type fasteners". However, this is again not easily fitted and removed at regular intervals. Furthermore, this device does not prevent fogging of the goggles, for example if exhaled is directed upwards by a jacket collar of the  
15 like.

A solution to the goggle fogging problem is proposed in CA 2220799, which uses a "breath deflector" attached to the skin, across the bridge of the nose, by skin friendly adhesive strips. Again this cannot easily be applied and removed by a skier at regular  
20 intervals.

### Summary of the invention

The invention provides a pair of goggles and method as set out in the accompanying  
25 claims.

It should be noted that the present invention is applicable to all winter sports, and other activities in cold climates.

Brief description of the figures

5 Figure 1 is a front view of a first embodiment of the invention, showing a pair of goggles with a blizzard guard in its lower position;

Figure 2 shows the first embodiment with the blizzard guard in its upper or raised position;

10 Figure 3 is a side view of the first embodiment, with the blizzard guard lowered;

Figures 4a to 4c show the movement of the blizzard guard between its upper and lower positions;

15 Figure 5 is a plan view, from above, of the first embodiment, with the blizzard guard in its raised position;

Figures 6 to 8 show a second embodiment of the invention, in which the blizzard guard is fixed to the frame of the goggles by two pivoting arms;

20 Figures 9a and 9b show a third embodiment of the invention in which the blizzard guard is fixed to a pivoting arm which can also slide along its length; and

25 Figure 10 is a fourth embodiment of the invention which is the same as the first embodiment except that the blizzard guard is formed from a fabric material supported by a pivoting frame.

Description of preferred embodiments

The following reference numerals are used in the drawings, and where the same  
5 features appear in different embodiments the same reference numeral is used.

Pair of goggles 2	Foam strip 34
Lens 4	Vents 36
Frame 6	Bump 38
Eyes 7	Upper surface 40 (of frame 6)
User 8	Recess 42
Nose 10	Inner edge 44
Mouth 12	Outer edge 46
Strap 14	Gaps 48
Blizzard / wind guard 16	Front / outer surface 50 (of guard 16)
Hinges 18	Side portions 52 (of frame 6)
Arms 20	Protrusion 54
Side edges 21 (of guard 16)	Two arms 56 and 58
Lower edge 22 (of guard 16)	Hinges 60, 62
Upper edge 24	Arm 64
Bottom part 26 (of frame 6)	Hinge 66
Indentation 28 (in frame 6)	Slot 68
Protrusion 30 (of guard 16)	Frame 70
Rubber strip 32	Fabric material 72

10 Figures 1 to 5 show a first embodiment of the invention, which will now be described. Figures 1 to 5 show a pair of goggles 2 comprising a lens 4 held within a frame 6. The lens 4 may, for example, be made of transparent plastics material, and the frame 6 of plastics material. The goggles cover the eyes 7 of a user 8, but not the user's nose 10 and mouth 12, and are held in place by a strap 14 (see Figures 3 to 5) around the back of the user's head.

The goggles 2 are provided with a blizzard guard 16 (also referred to herein as a wind guard, or simply a guard) which is movable between a lower position (shown in Figures 1, 3 and 4c) in which it functions as blizzard guard, and an upper position (shown in Figures 2, 4a and 5) in which it may function as a visor to shield the user's eyes 7 from direct sunlight. In the first embodiment the blizzard guard 16 is fixed to the plastic frame 6 at two hinges 18, one on each side of the goggles 2. Two arms 20, which may be plastic, connect the side edges 21 of the guard 16 to the two hinges 18. If desired, the arms 20 may be integrally formed with the guard 16.

When the guard 16 is viewed from the front in its lower position, as shown in Figure 1, it has a lower edge 22 which is gently curved in one direction, and an upper edge 24 which generally follows the shape of the bottom part 26 of the frame 6. The bottom part 26 of frame 6 has an indentation 28, labelled in Figure 2, shaped to accommodate / receive the nose 10 of the user. The upper edge 24 of the guard 16 therefore has a protrusion 30, labelled in Figure 5, which complements the shape of the indentation 28.

A rubber strip 32, shown in Figure 2, extends around the lower part 26 of the frame 6, so that when the blizzard guard 16 is in its lower position (see Figure 1) it forms an air-tight seal along the rubber strip 32. This ensures that exhaled air from the user's nose 10 and/or mouth 12 is prevented from flowing upwards between the guard 16 and the frame 6, so that fogging of the lens 4 is avoided.

Referring to the top view of the goggles shown in Figure 5, it can be seen that the frame 6 has a generally U-shaped cross-section so that it wraps around the user's face. A foam strip 34 extends around the inner rim of the frame 6, to provide a comfortable fit against the user's face. A number of vents 36 may be provided along the top of the frame 6 to allow some air to circulate within the goggles 2.

A small protuberance or bump 38, labelled in Figure 2, is provided on the inner surface of the guard 16, near its upper edge 24, which is received within a recess 42, labelled in Figures 2 and 5, on the upper surface 40 of the frame 6, thus forming a catch which releasably secures the guard 16 in its upper position. Alternatively the



bump 38 and recess 42 may be the other way around, ie on the frame 6 and guard 16 respectively. Alternatively the blizzard guard 16 may be held in its upper position simply by friction, for example friction between the arms 20 and the frame 6.

5 As shown in Figure 5, the upper edge 24 of the blizzard guard 16 does not have to have the same curvature, or follow the same path, as either the inner edge 44 or outer edge 46 (see Figure 5) of the frame 6. In Figure 5 the releasable catch (referred to above) is provided near the tip of the protrusion 30 of the blizzard guard 16, so that two gaps 48, on either side of the protrusion 30, are formed between the blizzard  
10 guard 16 and the frame 6. These gaps arise from the realisation that, in the raised position, it is not necessary for the whole of the upper edge 24 of the blizzard guard 16 to lie directly above the frame 6. It follows from this that the depth of the blizzard guard 16, from its lower edge 22 to its upper edge 24, can have a wide range of dimensions. For example, the depth of the blizzard guard 16 can be greater than that  
15 shown in Figure 1, so that the whole of the mouth 12 is covered, or less than that shown in Figure 1, so that the whole of the nose 10 is covered but the whole of the mouth 12 is uncovered. The dimensions of the guard 16 can, for example, be based on the average dimensions of an adult face, in order to achieve these results.

20 In Figure 5, in the upper position, only the protrusion 30 covers the upper surface 40 of the frame 6, and an advantage of this arrangement is that the vents 36 remain unobstructed.

The frame 6 may have a fair thickness, of perhaps 35 mm or more, from its inner  
25 edge 44 to its outer edge 46. As a result of this thickness, the upper edge 24 of the guard 16 can, in some embodiments, lie completely between the inner and outer edges 44 and 46, when viewed from above, so that the gaps 48 do not exist.

In any of the embodiments, the guard 16 may be rigid, for example plastics material,  
30 but may alternatively be flexible, for example of a soft rubber, to prevent injury in the case of a fall. In any embodiment the guard may be transparent, so that the user can see through the guard 16 regardless of the position of the guard 16, or opaque so that it blocks more sunlight when in the upper position. In any embodiment the guard

16 may be detachable from the frame 6. For example the hinges 18 may have caps which can be unscrewed to remove the guard 16 on occasions when it is not needed. Alternatively the guard 16 may be designed to clip on and off the frame 6. The arms 20 may be flexible and, as shown in the top view of Figure 5, the arms 20 may flex  
5 outwards to accommodate the width of the frame 6. The arms 20 can be provided with small prongs (not shown) which clip into holes (not shown) in the frame 6 at the position of the hinges 18, thus providing a detachable guard 16.

Figures 4a to 4c show the movement of the blizzard guard 16 from its upper position  
10 (Figure 4a) to its lower position (Figure 4c) via an intermediate position 4b.

Figure 3 is an enlarged version of Figure 4c, and in Figure 3 it can be seen that the front / outer surface 50 of the blizzard guard 16 has a curved, convex shape to better accommodate the nose of the user. It can also be seen that each (left and right) side  
15 portion 52 of the frame 6 is provided with a protrusion 54 on which the hinge 18 is mounted, so as to ensure that the hinge 18 provides the correct centre of rotation for the blizzard guard 16. The position of the hinge 18 is such that not all of the lens 4 lies completely in front of the hinge 18. The eye of the user remains visible in the side profile of Figure 3, thus ensuring that the user maintains peripheral vision.

20

Figures 6 to 8 show a second embodiment, which is essentially the same as the first embodiment except that the blizzard guard 16 is attached to each side of the frame 6 by two arms 56 and 58, each of which is pivotally mounted to both the frame 6 and the blizzard guard 16. The two arms 56 and 58 cross over each other along their  
25 length. The effect of this mechanism is that when the blizzard guard 16 is pushed up from its lowered position (Figure 6), via an intermediate position (Figure 7), to its raised position (Figure 8) the blizzard guard 16 is caused to rotate (clockwise as viewed in Figures 6 to 8) through an angle which is greater than the angle through which either of the arms 56 or 58 rotates (clockwise as viewed in Figures 6 to 8). The  
30 rotation of the guard 16 is therefore linked to rotation of the arms 56 and 58, in the same direction (clockwise or anticlockwise) as rotation of the arms 56 and 58. This allows hinges (ie pivot points) 60 and 62, of the arms 56 and 58 respectively, to be positioned further back than the hinge 18 of the first embodiment, so that the

protrusion 54 (described above) of the first embodiment is not required. This can result in an improvement to the peripheral vision of the user. The two arms 56 and 58 do not have to be straight, as shown in Figures 6 to 8, and can take any path between the hinges 56, 58 and 60, 62. For example, the arms 56 and 58 may run parallel to each other along most of their length, and then cross over each other only at one end of the arms.

Figures 9a and 9b show a third embodiment, which is again a modification of the first embodiment. The blizzard guard 16 is fixed (non-rotatably) to an arm 64 which is pivoted to the frame 6 by a hinge 66. The arm 64 is also provided with a slot 68 which allows the arm 64 to slide relative to the hinge 66. The slot allows the blizzard guard 16 to be raised and then pushed back towards the user's head until it clicks into releasable engagement with the frame 6.

Figure 10 shows a fourth embodiment which is the same as the first embodiment except that the blizzard guard 16 is formed from a fabric material 72 supported by a frame 18, which is in turn supported by the arms 20 described above. The frame 18 can be moved between the upper and lower positions, as described above, and seals against the rubber strip 32 described above (see Figure 2) in the same way. However, because the remainder (72) of the blizzard guard 16 is formed from a fabric material 72 it is particularly safe in the event of a fall, and particularly comfortable for the wearer. The fabric material 72 may, for example, be formed from cotton or a synthetic fibre, which may be woven, or from any other flexible woven material, or from neoprene or any flexible foamed material containing air or gas cells, and may optionally be stiffened in any suitable way, such as by insertion of flexible plastic or card portions or strips, if desired. The frame 18 and/or arms 20 may, for example, be formed from metal and/or plastics material.

In any of the embodiments, the central portion of the blizzard guard 16 may be formed from a stiff material, such as plastics, and the outer edge of the blizzard guard 16, or at least a portion of the outer edge, may be formed from a more flexible and/or softer material, such as rubber.

The goggles described in each embodiment provide the user with a blizzard guard or wind guard 16 which is immediately available when required, and which can be pulled down into position with a single hand. When the guard 16 is not required, it may be pushed up with a single hand, so that the guard 16 is immediately out of the way.

Various modifications are possible, some of which are noted here. In its upper position the guard 16 need not necessarily act as a visor against sunlight. For example the frame 6 of the goggles may be thicker, and the guard 16 shorter, so that when raised the guard does not project beyond the front of the goggles.

The frame 6 and lens 4 may be of single, unitary and/or integral construction. Also, the guard 16 need not be directly movably attached to the frame 6, and could be indirectly movably attached to the frame 6. For example the guard 16 could be movably attached to the lens 4 or to another part of the goggles 2.

Magnetic and/or metal strips could be provided in the blizzard guard 16 and/or frame 6 to ensure a good seal between the two. Such a strip or strips could, for example, extend along the upper edge 24 of the blizzard guard and/or along the bottom part 26 of the frame 6, and/or along the region of the frame 70 shown in Figure 10.

The guard 16 may be attached to said frame by a mechanism which is more complicated than the embodiments described herein. Such a mechanism may ensure that the guard 16 moves along a desired path, and rotates through a desired angle, on moving between said upper and lower positions.

In this specification the terms "goggles" and "pair of goggles" include goggles with a single lens for both eyes, as shown in Figure 1, and also other types of goggles which have a separate lens for each eye.

The goggles of any embodiment may also have any or all of the following features. The goggles may have an interior cavity which encloses the eyes of the wearer, but not the mouth or nostrils, so that the wearer does not exhale into the interior cavity of

the goggles. The goggles may have one or more lenses which cover the eyes of the wearer, but not the mouth or nostrils, when viewed from the front of the goggles. The goggles may be held on the wearer's head only by a strap which passes around the back of the head. The goggles may cover the eyes of the wearer, but not the top or  
5 back of the user's head.

In each of the embodiments described it will be seen that the guard 16 rotates by about 90 degrees between its upper and lower positions. In the lower position the guard 16, or at least the centre of the guard 16, lies in a generally vertical plane and  
10 acts as a blizzard / wind guard, and in the upper position the guard 16, or at least the centre of the guard 16, lies in a generally horizontal plane and can act as a sun visor. The angle of rotation can be a little more or less than 90 degrees, depending on the circumstances. Preferably the angle of rotation of the guard 16 between said upper and lower positions is between 80 and 100 degrees. Alternatively the angle of  
15 rotation may be between 70 and 110 degrees. It will be appreciated that the mechanism connecting the guard 16 to the frame 6 may constrain the guard to rotate through a specified angle between said upper and lower positions.

## CLAIMS

1. A pair of goggles adapted to be worn over the eyes of a wearer, said goggles comprising:
  - 5 a frame;
  - a lens supported by said frame, and adapted to, at least partly, cover the eyes of the wearer;
  - a guard which is movably attached, directly or indirectly, to said frame so as to be movable between:
    - 10 a) a lower position in which the guard is positioned, at least partly, below the eyes of the wearer in use and acts as a wind guard; and
    - b) an upper position in which the guard is positioned at least partly above the eyes of the wearer in use.
- 15 2. A pair of goggles as claimed in claim 1, wherein said guard is hingedly attached, directly or indirectly, to said frame.
3. A pair of goggles as claimed in claim 2, in which said guard is hingedly attached to said frame by at least a first arm.  
20
4. A pair of goggles as claimed in claim 3, wherein said first arm is hingedly mounted at a position on the goggles which is such that not all of said lens lies completely in front of said position.
- 25 5. A pair of goggles as claimed in claim 3 or 4, wherein said first arm is provided with a slot which allows movement of said arm along the length of the arm relative to said frame.
6. A pair of goggles as claimed in any one of claims 3 to 5, which further  
30 comprises a mechanism which ensures that rotation of said first arm relative to said frame causes, and is linked to, a rotation of said guard relative to said first arm.

7. A pair of goggles as claimed in claim 6, wherein said rotation of said guard relative to said first arm is in the same, clockwise or anticlockwise, direction as said rotation of said first arm relative to said frame.
- 5 8. A pair of goggles as claimed in claim 6 or 7, wherein said mechanism includes, on each side of said goggles, at least said first arm and a second arm, both arms being hingedly attached to said frame.
9. A pair of goggles as claimed in claim 8, wherein said first and second arms  
10 are also hingedly connected to said guard.
10. A pair of goggles as claimed in any one of claims 3 to 9, wherein said first and/or second arms are integrally formed with said guard.
- 15 11. A pair of goggles as claimed in claim 1 or 2, wherein in said lower position said guard prevents exhaled air from the user from passing between the guard and the frame.
12. A pair of goggles as claimed in claim 11, wherein a rubber, or other elastic  
20 material, strip is provided either along a lower edge of said frame, or along an edge of said guard, so that when in said lower position said strip provides a seal between said guard and said frame.
13. A pair of goggles as claimed in any preceding claim, wherein in said lower  
25 position said guard covers at least of portion of the cheeks of the user, so as to protect them from wind.
14. A pair of goggles as claimed in any preceding claim, wherein said guard is releasably fixable in said upper position.
- 30 15. A pair of goggles as claimed in claim 14, wherein said guard is releasably held in said upper position simply by friction.

16. A pair of goggles as claimed in claim 14, wherein one of said guard and an upper portion of said frame is provided with a notch, and the other of said guard and said upper portion of said frame is provided with a recess, and wherein said guard is releasably fixed in said upper position by means of said notch being received within said recess.

17. A pair of goggles as claimed in any one of claims 14 to 16, wherein at least the upper surface of said frame is provided with air vents for allowing air to pass in and out of the goggles, and wherein when said guard is releasably fixed in said upper position either all of said vents or at least some of said vents remain uncovered by said guard, when said goggles are viewed from above.

18. A pair of goggles as claimed in any preceding claim, wherein a lower part of said frame is provided with an indentation which provides an opening adapted to accommodate the nose of the user.

19. A pair of goggles as claimed in claim 18, wherein said guard is provided with a guard protrusion which, when said guard is in said lower position, partly or fully covers said opening provided by said indentation.

20. A pair of goggles as claimed in claim 19, wherein when said guard is in said upper position only said guard protrusion, or a portion of said guard protrusion, overlaps with said frame when the goggles are viewed from above.

21. A pair of goggles as claimed in claim 19 or 20, wherein when said guard is in said upper position at least two gaps are formed between said guard and said frame when the goggles are viewed from above, with at least one gap on either side of said guard protrusion.

22. A pair of goggles as claimed in any preceding claim, wherein when said guard is in said upper position the guard projects beyond the front of said lens so as to provide a visor which in use at least partly protects the eyes of the user from direct sunlight.



23. A pair of goggles as claimed in claim 22, wherein in said upper position the guard projects beyond the front of the lens by at least 20mm, or at least 30mm.
- 5 24. A pair of goggles as claimed in any preceding claim, wherein in said lower position the guard projects below the lowest part of said frame by at least 10mm, 20mm or 30mm.
25. A pair of goggles as claimed in any preceding claim, wherein in said lower  
10 position said guard is arranged to completely cover at least the nose of the user.
26. A pair of goggles as claimed in any preceding claim, wherein said guard is shaped so as to have a convex outer surface and a concave inner surface so that the guard can accommodate the nose of the wearer when the goggles are worn with the  
15 guard in said lower position.
27. A pair of goggles as claimed in any preceding claims, wherein said guard is detachable from said frame.
- 20 28. A pair of goggles as claimed in any preceding claim, wherein at least a portion of said guard is formed from a fabric material or woven fabric or neoprene material or a flexible foamed material.
29. A pair of goggles as claimed in claim 28, wherein at least one edge of said  
25 guard is provided with a rigid frame which moves with the guard between said upper and lower positions.
30. A pair of goggles as claimed in any preceding claims, wherein said guard rotates between 70 and 110 degrees, or between 80 and 100 degrees, when moved  
30 between said upper and lower positions.
31. A method of protecting the face of a user, said method comprising:  
covering the eyes of said user with a pair of goggles;

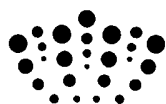
providing a guard which is movably attached to said goggles;

moving said guard between:

a) a lower position in which the guard is positioned at least partly below the eyes of the wearer in use and acts as a wind guard; and

5           b) an upper position in which the guard is positioned at least partly above the eyes of the wearer in use.

32.    A method as claimed in claim 31, which includes using a pair of goggles as claimed in any one of claims 1 to 30.



**Application No:** GB1101905.6

**Examiner:** Gabrielle Cowcill

**Claims searched:** 1-32

**Date of search:** 22 February 2011

**Patents Act 1977: Search Report under Section 17**

**Documents considered to be relevant:**

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X,Y	X: 1-4, 6-8, 10-15 17-27, 30-32, Y: 5, 9, 28-29	US 3298031 A (MORGAN) See the whole document and especially the figures
Y	28-29	WO 2006/125167 A1 (DONDERO) See page 12, third paragraph, and the figures
Y	28-29	US 5697100 A (HOROWITZ et al) See the whole document
Y	5	US 5956760 A (WINE et al) See the whole document
Y	9	US 5752280 A (HILL) See the whole document
A	-	US 1962818 A (HOFFMAN) See the whole document

**Categories:**

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

**Field of Search:**

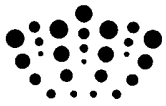
Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>X</sup> :

Worldwide search of patent documents classified in the following areas of the IPC

A41D; A61F; G02C

The following online and other databases have been used in the preparation of this search report

EPODOC, WPI



**International Classification:**

<b>Subclass</b>	<b>Subgroup</b>	<b>Valid From</b>
A61F	0009/02	01/01/2006
A41D	0013/11	01/01/2006