

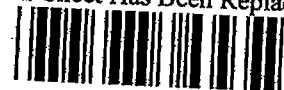
Device for joining at least two
members, and use thereof

This invention relates to a device for joining at least two members, especially of two members articulated to each other, by means of a screw traversing them.

One of the drawbacks of the assembling devices of the above mentioned type lies in the fact that the screw can be loosened untimely, the known means for preventing a loosening being not always applicable, especially when it is matter of devices of small dimensions, like the hinges of spectacles, for instance.

Another drawback of these devices lies in the fact that, when it is a matter of the assembling of members articulated to each other, play can occur due to the wear of the elements of the assembling, play that it is difficult to compensate while tightening more the screw, especially when the latter is locked against one of the elements of the assembling in order to reduce the risk of an untimely loosening.

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The object of the present invention is to remove this drawback.

This object is achieved owing to the fact that the assembling screw goes beyond the member in which it is screwed, its protruding portion presenting, situated flush with the said member, an annular groove in which is engaged a circlip, in such a way as to prevent the screw to be loosened untimely.

So far as the use, according to the invention, of the present assembling device is concerned, in view of compensating a possible play thereof, it is characterized by the fact that one replaces the said circlip by a circlip of a superior thickness.

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The drawing shows, by way of example, one embodiment of the object of the invention.

Fig. 1 is an axial sectional view of a hinge for sides of spectacles.

Fig. 2 is a plan view, from the bottom, of this hinge, to a larger scale, and

Fig. 3 is a sectional view of a detail of this hinge, to the scale of fig. 2.

The hinge represented comprises a sole 1 intended to be secured to the facial part 2 of a spectacles frame, and a sole 3 secured to a side 4 of the said frame.

A notch 5 is provided in the sole 1 constituting this way two knuckles 1a and 1b between which is engaged a protrusion 3a of the sole 3, constituting a knuckle, the whole constituting this way the hinge of articulation of the side 4 on the facial part 2 of the spectacles frame.

A journaled screw 6 passes through the two knuckles 1a and 1b, as well as the knuckle 3a of the hinge, its end, designated by reference 6a, which is threaded, being screwed in the knuckle 1b.

This screw extends beyond the knuckle 1b, its protruding portion presenting, flush with the outer face, designated by reference 7, of the knuckle 1b, an annular groove 8 situated flush with the said face 7. A pinch washer 9, known by the name of circlip, is engaged in the groove 8 and bears on the face 7 of the knuckle 1b for ensuring that the screw 6, the head of which, designated by reference 6b, is locked against the knuckle 1a, does not risk loosening untimely.

The height of the groove 8 is such that the latter is situated, partially, inside the knuckle 1b. Hence, if the articulation takes play, for instance due to wear of the elements which constitute it, that is frequently the case of the hinges of spectacles frames, which are much utilized, it is possible to compensate this play while replacing the circlip 9 by a circlip of a thickness slightly superior.

Thus, the present arrangement settles at the same time the problem of the untimely loosening of a screw assembling of two elements and this one of the compensation of a possible play.

The invention is not restricted to the case disclosed and represented of hinges of spectacles. It can be applied to any assembling using a screw, even to the assembling of elements which are not articulated to each other, even if, in this case, the risk of appearance of play is obviously lower.

The invention can also be applied to the case where the screw is not directly screwed in one of the members to be assembled but to the case where the assembling is provided with a nut. The screw will then extend beyond the said nut and it is against the latter that the circlip will bear.

1. A device for joining at least two member, especially of two members articulated to each other, by means of a screw traversing them, in which the said screw extends beyond the member in which it is screwed, its protruding portion presenting, situated flush with the said member, an annular groove in which is engaged a circlip, in such a way as to prevent thus the screw being untimely loosened.

2. A device as claimed in claim 1, in which the height of the groove provided in the screw is such that the said groove is located partially inside the member in which it is screwed, so that a possible play of the device, especially after wear of the elements which constitute it, can be compensated by the use of a circlip the thickness of which is superior than that of the circlip used initially, before the appearance of the said play.

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3. Use of the device as claimed in claim

2, in order to compensate a play of the assembling,
in which one replaces the initial circlip by a cir-
clip of superior thickness.

A B S T R A C T

A screw (6) extending through the knuckles (1a, 1b and 3a) of the arm hinge of a pair of spectacles and having a threaded end (6a) screwed into one knuckle (1b). The part of the screw (6) that extends beyond said knuckle (1b) has an annular groove receiving a circlip (9) which engages the outer surface (7) of the knuckle (1b) to prevent inadvertent loosening of the screw (6) with its head (6b) held in engagement with knuckle (1a). The size of the annular groove receiving the circlip (9) is such that said groove is partially located within the knuckle (1b). As a result, should the assembly become loose, it can be tightened again by replacing said circlip (9) with another slightly thicker circlip.

I, undersigned, Jean S. ROBERT, certify
that the present is a true translation of the
amendments made during the International phase of
PCT Application No PCT/IB 95/00303 of April 27,
1995.

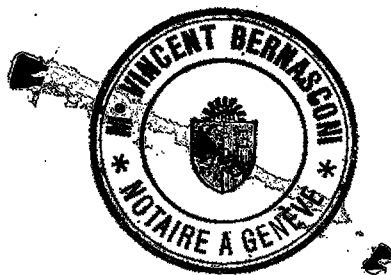
Jean S. Robert

Landecy-Geneva, December 12, 1996.

Seen by the undersigned, Vincent BERNASCONI, a duly authorized Notary
public in Geneva, for legalization exclusively of the above signature
of Jean S. ROBERT, who signed according to the original sample of his
signature filed in my Office.

(The undersigned Notary Public does not assume any liability as to the
contents of this document).

Geneva, on this 14th day of December 1996/mg



Spectacles frame and articulation device
of its sides on its facial portion

This invention relates to a spectacles frame and to an articulation device of its sides on its facial portion by means of hinges the axis of which is constituted by a screw screwed in one of the knuckles of one of the elements of the hinge and which passes through a passage provided in a knuckle of the other element.

The articulation devices of sides of spectacles of the above mentioned type are known per se. US Patent No 2.926.381 discloses an arrangement of this type.

The object of the present invention is to improve the reliability of such articulation devices producing a locking of the assembling screw.

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This object is achieved owing to the fact that the screw goes beyond the knuckle in which it is screwed, this screw showing, situated flush with the face of said knuckle, beyond which it protrudes, an annular groove in which is engaged a circlip producing the locking of the screw preventing the latter to be untimely loosened.

It is to be noted that French Patent No 1.212.655 and French Patent Application No 2.623.920 disclose articulations devices of sides of spectacles in which the axis of the hinge is constituted by a smooth stem locked by means of a circlip.

Such an arrangement is well known in the field of general mechanics, as Belgian Patent No 469.209 will be sufficient to be evidence thereof, in which, moreover, the locking circlip of an axis is cambered in such a way as to produce a resilient return of this axis.

Another object of the invention lies in the fact of realizing such an articulation device which is efficient in spite of the variations of the position of the screw constituting the axis of articulation can occupy when the desired tightening is obtained.

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This other object is achieved owing to the fact that the width of the annular groove provided in the stem of the screw is such that this groove is partially situated inside the knuckle of the element of the hinge in which the screw is screwed, in such a way that, according to the longitudinal position of the said screw with respect to the said knuckle, circlips of several thicknesses can be used so as to produce an efficient locking of the screw.

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Date: 15 MAY 1996

CLAIMS



1. A spectacles frame and an articulation device of its sides (4) on its facial portion (2) by means of hinges the axis of which is constituted by a screw (6) screwed in one (1b) of the knuckles of one of the elements (1) of the hinge and which passes through a passage provided in a knuckle (3a) of the other element (3) in which the said screw (6) extends beyond the knuckle (1b) in which it is screwed, this screw presenting, situated flush with the face (7) of the said knuckle, on which it protrudes, an annular groove (8) in which is engaged a circlip (9) producing the locking of the screw (6) preventing the screw to be untimely loosened.

2. A spectacles frame as claimed in claim 1, in which the width of the said groove (8) is such that the groove is partially situated inside the knuckle (1b) of the hinge in which the screw is screwed, in such a way that, according to the longitudinal position of the said screw (6) with respect to the said knuckle (1b), circlips of several thicknesses can be used so as to produce an efficient locking of the screw.

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Date: 15 MAY 1996