PUBLISHED
MAY 4, 1943.
BY A. P. C.

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SPECTACLES AND GOGGLES FRAMES
Filed June 12, 1940

Serial No.
340,190

Fig. 1

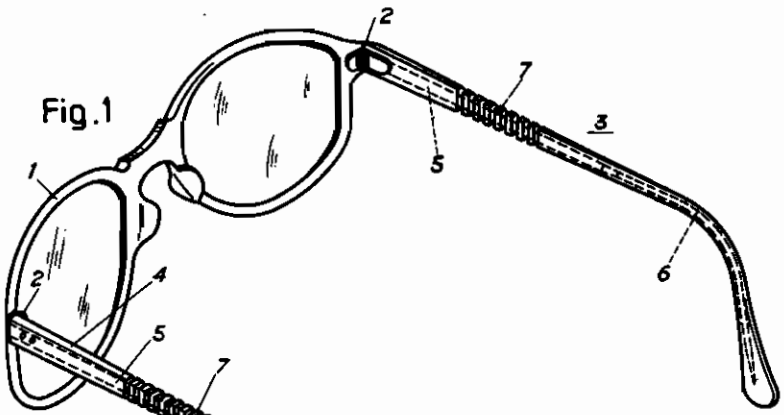


Fig. 2

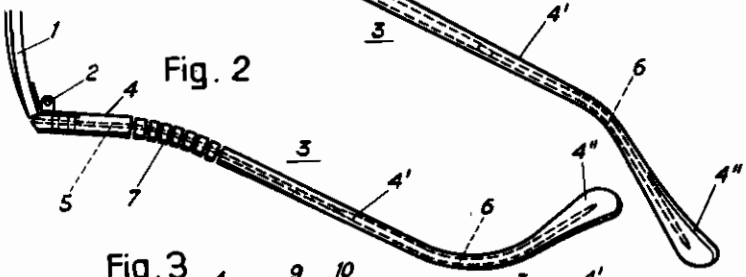


Fig. 3

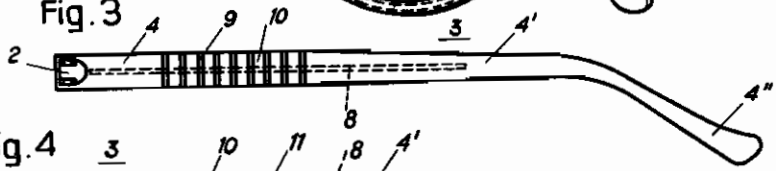


Fig. 4

Fig. 5

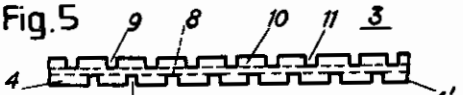


Fig. 6

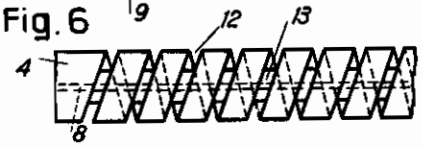


Fig. 7

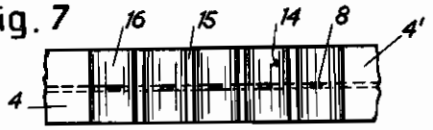


Fig. 8

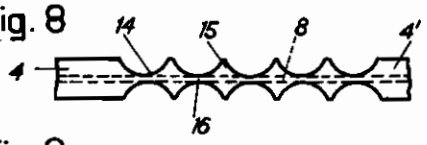


Fig. 9

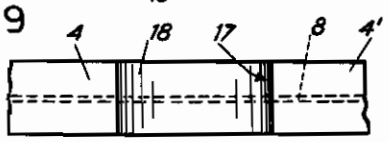
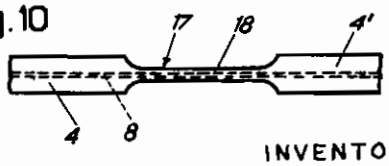


Fig. 10



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Published May 4, 1943

Serial No. 340,190

ALIEN PROPERTY CUSTODIAN

SPECTACLES AND GOGGLES FRAMES

Giuseppe Ratti, Turin, Italy; vested in the Alien Property Custodian

Application filed June 12, 1940

This invention relates to mountings of spectacles and goggles made of celluloid or celluloid derivatives, condensation resins and products and thermoplastic materials, and it has for its object a frame or mounting of said class in which the bars intended to engage the wearer's ears are provided with flexibility in transverse direction (that is for deformations around lines parallel with the axis of the hinges of said ear bars on the screen carrying frame) to a larger degree than that inherent to the material of which said ear bars are made and such as to provide for a large deformation of each bar at one or more points intermediate its hinge point on said frame and the end point thereof where it engages behind the wearer's ear.

The mounting is thus able to adapt itself to very different configurations and sizes of wearer's faces and it prevents any objectionable pressure by the goggle mounting bars on the wearer's face.

In this invention each bar consisting of a rod of one of said materials with an internal metal core, includes at one portion at least of its extent, a flat resilient web extending in a plane substantially parallel with the bar hinge axis and said rod is weakened in said portion at one point at least, the bar thus having a large transverse flexibility.

Some embodiments of this invention are shown by way of example on the annexed drawing and

Fig. 1 is a perspective view of goggles or spectacles in accordance with this invention;

Fig. 2 is a fragmentary plan view showing one of the ear-bars of the goggles of Fig. 1 in a deflected condition;

Fig. 3 is a separate side view of another embodiment of ear-bar;

Fig. 4 shows the flexible portion of the bar of Fig. 3 on an enlarged scale;

Fig. 5 is the plan view of Fig. 4;

Fig. 6 shows in side view the flexible portion of another embodiment of ear-bar;

Fig. 7 is a side view of another embodiment;

Fig. 8 is a plan view of the embodiment of Fig. 7;

Fig. 9 is a side view of a further embodiment and

Fig. 10 is a plan view of the embodiment of Fig. 9.

In Fig. 1, the front frame 1 of the mounting has the ear-bars 3 hinged thereto by the hinges 2; said bars 3 are made of a comparatively stiff material like the frame 1, with an embedded metal core as hereinafter described.

Each ear-bar 3 includes a rod section 4 which provides a hinge member for its hinge connection with the frame 1 and a rod section 4' whose end portion 4'' which as usually is flexible, is intended to be located in use behind the wearer's ear.

The sections 4 and 4' of the bar 3 are spaced from each other and connected by an embedded metal core which in the region adjacent to confronting portions of said sections consists of a flat metal strip 5 whose width extends in a plane substantially parallel to the hinge axis 2 whilst the portion of said core within the end portion of the section 4', 4'' consists of a wire 6.

The space intermediate the two rod sections 4 and 4' has a comparatively large extent and the intermediate portion of the strip 5 extending through said space is embraced by interspaced segments 7 having the same profile as the rod sections 4, 4'; the ear bars 3 has thus substantially an uniform general shape along its whole extent and the flexibility of the strip 5 is left unaffected to enable the ear-bar 3 to deflect to a large extent both to right and to left.

Fig. 2 illustrates the configuration an ear bar 3 in accordance with this invention may take when the spectacles are worn by a wearer having a large face. As appears in said Figure the transverse deformability of the bar 3 in a region adjacent to its hinge 2 enables the front frame 1 of the mounting to hold its normal position in front to wearer's eyes the end 4'' being conveniently located behind the wearer's ear, and said bar by its whole does not apply an objectionable pressure on the wearer's head.

The flexible section may be provided at different points along the bar and the bar may be made flexible at several points of its extent.

Each flexible section of the bar may extend over a more or less long extent and it may include a variable number of segments 7.

In the embodiment illustrated in Figs. 1 and 2 the strip 5 is connected with a ductile and flexible wire 6 which enables the requisite bend to be imparted to the end 4'' of the bar; the metal core of the bar is thus provided in part by a flexible wire 6 and in part by a resiliently flexible strip 5 whose free end is connected with an element of the hinge 2.

Two or more resilient wires may be used in lieu of a strip 5 said wires being arranged at the side of each other in a plane substantially parallel with the axis of the hinge 2 of the bar, the bar 3 being thus made able to deflect transversely while being substantially rigid in other directions.

An ear bar complying with requirements as to transverse resilient flexibility may also be obtained with advantage by means of a rod of celluloid or celluloid derivatives, condensation resins and products and thermoplastic materials having a metal core inside it and transverse grooves or depressions in a portion thereof which is required to be flexible; said grooves or depressions may or may not reach the metal core and may also divide said portion in several segments equivalent to those illustrated at 7 in Fig. 1.

In this embodiment a flat web extending in a plane substantially parallel to the axis of the hinge to secure the transverse flexibility of the bar is provided by the cooperation of the metal core and portions of the rod which encloses the metal core.

In fact by providing more or less deep side grooves or slots on either or on both faces of the rod in the region where the bar must be made flexible, the rod is made more thin and consequently it takes a localized resilient flexibility; on the other hand the metal core imparts the requisite mechanical strength to the bar.

Figure 3 shows a bar 3 built up in the above suggested manner to be used in a goggles mounting in accordance with this invention and having a core 8 embedded therein. Said core 8 consists of a resilient metal, as steel, at least in the region thereof where the bar requires to be flexible; said core 8 may consist of a wire (as illustrated) or of a strip as in Fig. 1.

The bar 3 may have any preferred configuration in its cross section and it has in its longitudinal direction any preferred shape usually imparted to ear-bars of a spectacle frame.

In its portion intended to be flexible the rod 4 cooperating to form the bar 3 is flat and is provided at least on one of its side faces with transverse grooves 9 which may reach the core 8 or may end at a small distance from said core.

In the embodiment of Fig. 3 the grooves 9 are perpendicular to the bar axis, but they could be inclined with respect to said axis or provide cusps; said grooves 9 may be located at even or variable distances to leave intermediate segments having a constant or a variable width.

In the embodiment illustrated in Figs. 3 and 4, each groove 9 extends transversely across the rod 4, from an edge of the lateral surface thereof towards the other edge; on each side of the metal core 8 the adjacent segments 10 left intermediate said grooves 9 are connected by webs 11 which lie substantially in a middle longitudinal plane parallel with the axis of the hinge 2.

The webs 11 could exist over a single side of the core 8 or they may have a transverse extent smaller than that of segments 10, they providing in any case in the middle region of the rod 4 a flat web which completes the action of the metal core 8 when it consists of a wire as illustrated.

Should the grooves 9 be provided on both side faces of the flat rod 4 they may register with each other on the two opposite faces thereof, or they may be staggered as shown in Fig. 5; in any case said grooves 9 may extend to reach the metal core 8 or they may be shaped to leave a thin layer of material over said core 8.

A similar structure providing an uninterrupted series of segments may be provided by the arrangement shown by Fig. 6; for such a purpose in the portion of a flat rod 4 which is required to be made flexible, an ininterrupted groove 12 is provided which extends along a substantially helicoidal line about the core 8 and leaves an interrupted web 12.

A bar having a flat web which lies substantially in its middle plane parallel to the hinge axis may also be obtained by means of a flat rod 4 having depressions 14 (Figs. 7 and 8) which leave intermediate ribs 15 having any desired profile and more or less regular and/or spaced from each other.

The webs 16 intermediate the ribs 15 may reach the rod edges and the depressions intermediate the ribs 15 may reach the metal core 8 or leave a layer of rod material over said core.

The transverse resilient flexibility of the bar in a predetermined region of its extent may also be obtained by depressing the faces of a flat rod 4 on either or both sides thereof to provide a web having a thickness equal to or scarcely larger than the thickness of the metal core. An embodiment of this kind is shown in Figs. 9 and 10 where in the portion to be made flexible the rod 4 has registering depressions 17 on its opposite faces which leave an uninterrupted web 18 provided by the rod material. The web 18 may have a configuration to leave the metal core 8 uncovered on either of its faces or it may be interrupted transversely.

The features of the several embodiments could be combined with each other severally and the segments or other means may be arranged to impart a particular configuration to the bar portion which is made transversely flexible.

In all the embodiments illustrated in Figs. 3–10, the metal core, usually made of steel, may also consist of a strip or of two or more wires; however a core consisting of a single wire is sufficient because a flat web adapted to provide for a resilient flexibility in a single direction is provided by the rod material left at the sides of the metal core.

In the illustrated embodiments the rods are assumed to have a flat cross section but they may have any preferred cross section being only essential that the grooves or weakening means are such as to make said rods flexible about a single direction.

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