

EYEGLASSES

TECHNICAL FIELD

[0001] The present utility model relates to the technical field of eyeglasses, and more particularly, to a type of eyeglasses.

BACKGROUND

[0002] For people who participate in outdoor activities or need to drive for extended periods, sunglasses have always been an indispensable accessory. To help near-sighted individuals who already wear prescription eyeglasses alleviate the inconvenience, eyeglasses with externally attachable sunglass lenses have emerged on the market. The sunglass lenses are typically attached to the frame by either hooks or magnetic attraction, thereby eliminating the need for users to carry both sunglasses and prescription eyeglasses at the same time.

[0003] However, the attachment strength between the sunglass lenses and the frame in such eyeglasses is often inadequate. In scenarios involving outdoor activities such as running or movement, the sunglass lenses can easily detach from the frame.

SUMMARY

[0004] In light of the foregoing, the present utility model provides an eyeglass designed to address the issues in the prior art, wherein the attachment strength between the sunglass lenses assembly and the frame in such eyeglasses is inadequate and the sunglass lenses assembly can easily detach from the frame in scenarios involving outdoor activities such as running or movement.

[0005] To achieve one or more of the foregoing objectives, either in whole or in part, or to accomplish other objectives, the present utility model proposes a type of eyeglasses, which includes a frame and sunglass lenses assembly. The frame may be fitted with a pair of lenses, each of two endpieces of the frame may be connected to a corresponding temple arm through a hinge mechanism, a slot and a first groove may be formed at each endpiece of the frame, the slot may be upwardly open, a magnet is embedded in the first groove, a shape of the sunglass lenses of the sunglass lenses assembly may match the frame, each of two ends of the sunglass lenses assembly may be provided with a downward-extending plug adapting to the corresponding slot, a second groove may be provided upwardly on each plug, and a magnetic

component is embedded in each second groove, allowing attraction between the magnets and the magnetic components, thereby attaching the sunglass lenses assembly to the frame.

[0006] Preferably, the respective first groove may open toward a respective inner side of the respective endpiece of the frame, and the respective second groove and the respective first groove may be correspondingly formed on one side of the respective plug.

[0007] Preferably, an upper edge of the sunglass lenses assembly may be provided with a connecting beam along a length direction thereof, the two plugs may be respectively provided at two ends of the connecting beam, a positioning mechanism may be arranged on the connecting beam, the connecting beam may be connected to the upper edge of the sunglass lenses assembly through the positioning mechanism, and the sunglass lenses assembly is stopped in a suspended position by the positioning mechanism after flipping over the connecting beam.

[0008] Preferably, the positioning mechanism may include a stopper block, a rotating sleeve, a positioning block, and an elastic member; wherein the stopper block, the rotating sleeve, and the positioning block may be sequentially arranged along the length direction of the connecting beam, the stopper block and positioning block may be fixed to the connecting beam, the rotating sleeve may be rotatably connected to the connecting beam and is capable to slide along the connecting beam, the rotating sleeve may be fixedly connected to the upper edge of the sunglass lenses assembly, the positioning block and the rotating sleeve respectively may include detent teeth disposed at adjacent ends and extending circumferentially, the elastic member may be disposed between the stopper block and the rotating sleeve, with one end connected to the stopper block and the other end connected to the rotating sleeve, the elastic member may be configured to drive the rotating sleeve to slide and come into contact with the positioning block, so that the detent teeth on the adjacent ends of the positioning block and the rotating sleeve engage with each other.

[0009] Preferably, the connecting beam may include a mounting shaft and two connecting sleeves that are respectively fixedly connected to two ends of the mounting shaft, the diameter of the mounting shaft may be smaller than that of the connecting sleeves, the stopper block, the rotating sleeve, and the positioning block may be arranged in sequence on the mounting shaft along a length direction of the mounting shaft, the stopper block and the positioning block may be fixedly connected to the mounting shaft, the rotating sleeve may be rotatably connected to the mounting shaft and capable to slide along the mounting shaft, and the two plugs may be respectively arranged on the two connecting sleeves.

[00010] Preferably, the elastic element may be a spring, the spring may be sleeved on the mounting shaft, one end of the spring abutting the stopper block and the other end abutting the rotating sleeve.

[00011] Preferably, the rotating sleeve may be inwardly and axially formed with a receiving cavity that opens toward the stopper block, and one end of the spring may be accommodated in the receiving cavity and abut a bottom wall of the receiving cavity.

[00012] Preferably, the positioning mechanism may include a T-shaped plate, the T-shaped plate may include a strip and a protrusion protruded from one side of a middle portion of the strip, the strip may be disposed in the same direction at an outer side of the rotating sleeve, the protrusion may be fixedly connected to a side wall of the rotating sleeve, two ends of the strip may be vertically provided with insertion shafts on one side, and two insertion holes may be correspondingly provided at the upper edge of the sunglass lenses assembly.

[00013] Preferably, the upper edge of the sunglass lenses assembly may be provided with a recess for snap-fitting the strip.

[00014] Preferably, the connecting beam and the sunglass lenses assembly may be made of plastic material.

[00015] The implementation of the embodiments of the present utility model may have the following technical effects.

[00016] Upon adopting the above-mentioned eyeglasses, when sunglasses are needed, the user may only need to respectively and downwardly insert the plugs at both ends of the sunglass lenses assembly into the corresponding slots at both ends of the frame. This allows the magnets and magnetic components to attract each other, hanging the sunglass lenses assembly stably on the outer side of the frame. When the user is running or moving, the magnetic force may limit the upward movement of the plugs, preventing them from slipping out of the slots. The inner walls of the slots may also restrict the plugs from moving laterally, thus enhancing the connection strength between the sunglass lenses assembly and the frame in the lateral direction. This prevents the sunglass lenses assembly from easily falling off the frame during movement, thereby improving the user experience.

BRIEF DESCRIPTION OF THE DRAWINGS

[00017] To more clearly describe the embodiments of the present utility model or the technical solutions in the prior art, a brief introduction to the drawings required for the embodiments or the prior art is provided below. It should be noted that the drawings described below are only

some embodiments of the present utility model. For those skilled in the art, other drawings may also be obtained based on these drawings without innovative effort.

Which:

FIG. 1 is an exploded view of the positioning mechanism with the mounting shaft of the present disclosure;

FIG. 2 is a front view and side view of the connection between the connecting beam and the positioning mechanism in the present disclosure;

FIG. 3 is a front view of the sunglass lenses assembly in the present disclosure;

FIG. 4 is an assembly schematic view of the sunglass lenses assembly and the frame at a front view angle in the present disclosure;

FIG. 5 is an assembly schematic view of the endpiece and the magnet of the present disclosure;

FIG. 6 is a side view of the sunglass lenses assembly in the present disclosure when flipped to a horizontal position;

FIG. 7 is a back view of the sunglass lenses assembly and the connecting beam in the present disclosure; and

FIG. 8 is a front view of the sunglass lenses assembly in the present disclosure.

In the figures:

1: frame;

11: slot;

12: first groove;

13: endpiece;

2: sunglass lenses assembly;

21: plug;

22: second groove;

23: insertion hole;

24: recess;

25: insertion screws;

31: magnet;

32: magnetic component;

4: connecting beam;

41: mounting shaft;

42: connecting sleeve;

5: stopper block;

6: rotating sleeve;
61: detent teeth
62: receiving cavity;
7: positioning block;
8: elastic element;
9: T-shaped plate;
91: strip;
92: protrusion;
93: insertion shaft.

DETAILED DESCRIPTION

[00018] Unless otherwise stated, all technical and scientific terms used herein have the same meanings as those commonly understood by persons skilled in the technical field to which this utility model pertains. The terminology used in the specification of this application is intended to describe specific embodiments only and is not meant to limit the utility model. As used in the description and claims as well as the above brief description of the drawings of the utility model, the terms “comprise” and “include” as well as their variations, are intended to indicate inclusive, not exclusive, inclusion. Terms such as “first,” “second,” etc., in the description and claims as well as the above brief description of the drawings of the utility model are only used to differentiate between different elements and are not intended to indicate any particular order.

[00019] As used in this disclosure, “embodiment” means that features, structures, or characteristics described in connection with the embodiment are included in at least one embodiment of the utility model. The appearance of the phrasing in various places in the description is not necessarily referring to the same embodiment, nor are necessarily mutually exclusive or alternative embodiments. The embodiments described herein should not be understood in either an explicit or implicit way by persons skilled in the art to be combinable with other embodiments.

[00020] To enable those skilled in the art to understand the technical solutions of the utility model, detailed description of the embodiments of the utility model will be provided below in conjunction with the accompanying drawings.

[00021] As shown in FIGS. 1 to 6, a pair of eyeglasses may include a frame 1 and a pair of sunglass lenses assembly 2. The frame 1 may be fitted with a pair of lenses, and each of the two endpieces 13 of the frame 1 may be connected to a corresponding temple arm through a

hinge mechanism. A slot 11 and a first groove 12 may be formed at each endpiece 13 of the frame 1. The slots 11 may be upwardly open, and a magnet 31 may be embedded in each first groove 12. The shape of the sunglass lenses of the sunglass lenses assembly 2 may match the frame 1. Each of two ends of the sunglass lenses assembly 2 may be provided with a downward-extending plug 21 adapting to the corresponding slot 11. A second groove 22 may be provided upwardly on each plug 21, and a magnetic component 32 may be embedded in each second groove 22. When the user needs to wear the sunglass lenses, they may simply insert, downwardly and respectively, both plugs 21 into the corresponding slots 11 on the two endpieces 13 of the frame 1, allowing attraction between the magnets 31 and the magnetic components 32, thereby securely attaching the sunglass lenses assembly 2 to the outer side of the frame 1. When the user is running or moving, the magnetic force may prevent the plugs 21 from slipping upward and detaching from the slots 11. The inner wall of the slot 11 may limit lateral movement of the plugs 21, which increases the lateral attachment strength between the sunglass lenses assembly 2 and the frame 1. This prevents accidental detachment of the sunglass lenses assembly 2 from the frame 1 during the activities and enhances user experience. [00022] Furthermore, the first grooves 12 may open toward the inner sides of endpieces 13 of the frame 1, thereby concealing the magnets 31 and preventing them from affecting the appearance of the eyeglasses. The second grooves 22 and the first grooves 12 may be correspondingly formed on one side of the plugs 21. When the plugs 21 are inserted into the slots 11, the magnets 31 and the magnetic components 32 may be magnetically attracted in the lateral direction, thereby further enhancing the magnetic attraction and further limiting the upward separation of the plugs 21 from the slots 11.

[00023] In particular, the inner sides of the endpieces 13 may refer to the sides facing the wearer when in use.

[00024] Furthermore, the upper edge of the sunglass lenses assembly 2 may be provided with a connecting beam 4 along its length direction. The two plugs 21 may be respectively provided at each of two ends of the connecting beam 4. A positioning mechanism may be arranged on the connecting beam 4, and the connecting beam 4 may be connected to the upper edge of the sunglass lenses assembly 2 through the positioning mechanism. After flip over the connecting beam 4, the sunglass lenses assembly 2 may be held/stopped in a suspended position by the positioning mechanism.

[00025] In one embodiment, the positioning mechanism may include an internal tooth sleeve made of an elastic material. The middle section of the connecting beam 4 may be provided with

stopper teeth extending circumferentially. The internal tooth sleeve may be movably sleeved over the middle section of the connecting beam 4 and engaged with the stopper teeth. The upper edge of the sunglass lenses assembly 2 may be fixedly connected to the outer wall of the internal tooth sleeve. Users can flip the sunglass lenses assembly 2 through the relative rotation between the internal tooth sleeve and the connecting beam 4. During this process, the internal tooth sleeve may elastically deform to allow the stopper teeth to correspondingly slide along the inner wall of the internal tooth sleeve, while the sunglass lenses assembly 2 remain stationary. When the sunglass lenses assembly 2 stop, the stopper teeth may be engaged with the inner wall of internal tooth sleeve, thereby providing support for the sunglass lenses assembly 2, so as to allow the sunglass lenses assembly 2 to be flipped and held/stopped in suspension. This allows users to quickly switch between standard prescription lenses and sunglasses without detaching the sunglass lenses assembly 2.

[00026] Furthermore, the positioning mechanism may include a stopper block 5, a rotating sleeve 6, a positioning block 7, and an elastic member 8. The stopper block 5, the rotating sleeve 6, and the positioning block 7 may be sequentially arranged along the length direction of the connecting beam 4. The stopper block 5 and positioning block 7 may be fixed to the connecting beam 4. The rotating sleeve 6 may be rotatably connected to the connecting beam 4 and may slide along it. The rotating sleeve 6 may be fixedly connected to the upper end of the sunglass lenses assembly 2. The positioning block 7 and the rotating sleeve 6 may each include detent teeth 61 disposed at adjacent ends and extending circumferentially. The elastic member 8 may be disposed between the stopper block 5 and the rotating sleeve 6, with one end connected to the stopper block 5 and the other end connected to the rotating sleeve 6. The elastic member 8 may serve to drive the rotating sleeve 6 to slide and come into contact with the positioning block 7, so that the detent teeth 61 on the adjacent ends of the positioning block 7 and the rotating sleeve 6 engage with each other. When the sunglass lenses assembly 2 are flipped, this may drive the rotating sleeve 6 to rotate and cause the detent teeth 61 at its end to slide along an inclined surface over the corresponding detent teeth 61 of the positioning block 7. The interaction between the two detent teeth 61 may force the rotating sleeve 6 to move a set distance toward the stopper block 5. At this point, the elastic member 8 may be compressed by the end of the rotating sleeve 6 and store deformation energy. Once the sunglass lenses assembly 2 flip is completed, the elastic member 8 may restore to its original state and push the rotating sleeve 6 back to slide into position, allowing the detent teeth 61 at its end to re-engage with the detent teeth 61 of the positioning block 7. This may once again limit the

rotation of the rotating sleeve 6, thereby holding/stopping the flipped sunglass lenses assembly 2 in suspension.

[00027] Furthermore, the connecting beam 4 may include a mounting shaft 41 and two connecting sleeves 42 that may be respectively fixedly connected to two ends of the mounting shaft 41. The diameter of the mounting shaft 41 may be smaller than that of the connecting sleeves 42. Along the length direction of the mounting shaft 41, the stopper block 5, the rotating sleeve 6, and the positioning block 7 may be arranged in sequence on the mounting shaft 41. The stopper block 5 and positioning block 7 may be fixedly connected to the mounting shaft 41, while the rotating sleeve 6 may be rotatably connected to the mounting shaft 41 and may slide along it. Two plugs 21 may be respectively arranged on the two connecting sleeves 42.

[00028] Furthermore, the elastic element 8 may be a spring, which may be sleeved on the mounting shaft 41. One end of the spring may abut the stopper block 5, and the other end may abut the rotating sleeve 6.

[00029] Furthermore, the rotating sleeve 6 may be inwardly and axially formed with a receiving cavity 62 that opens toward the stopper block 5. One end of the spring may be accommodated in the receiving cavity 62 and may abut the bottom wall of the receiving cavity 62, so that the spring may be supported by the inner wall of the receiving cavity 62, thereby improving the installation accuracy and stability of the spring.

[00030] Furthermore, the positioning mechanism may also include an integrally formed T-shaped plate 9. The T-shaped plate 9 may be made of metal material, and include a strip 91 and a protrusion 92 protruded from one side of the middle portion of the strip 91. The strip 91 may be disposed in the same direction at the outer side of the rotating sleeve 6, and the protrusion 92 may be fixedly connected by welding to the side wall of the rotating sleeve 6. Two ends of the strip 91 may be vertically provided with insertion shafts 93 on one side, corresponding to insertion holes 23 provided at the upper end of the sunglass lenses assembly 2. During assembly, it may only be necessary to insert the insertion shafts 93 into the corresponding insertion holes 23 at the upper end of the sunglass lenses assembly 2, thereby connecting the sunglass lenses assembly 2 to the T-shaped plate 9 through the two insertion shafts 93, and thus fixing the sunglass lenses assembly 2 to the rotating sleeve 6.

[00031] Furthermore, the upper edge of the sunglass lenses assembly 2 may be provided with a recess 24 for snap-fitting the strip 91. When the insertion shafts 93 are inserted into the corresponding insertion holes 23, the strip 91 may be snap-fitted into the recess 24 at the upper edge of the sunglass lenses assembly 2. This may ensure the alignment between the strip 91

and the upper edge of the sunglass lenses assembly 2, improving both the consistency in appearance and the connection strength between the strip 91 and the upper edge of the sunglass lenses assembly 2.

[00032] In other embodiments, each insertion hole 23 may be provided for receiving an insertion screw 25. Two ends of the strip 91 may be respectively provided with two holes, instead of insertion shafts 93, the two holes configured to align with the insertion holes 23 provided at the upper end of the sunglass lenses assembly 2. Each of the insertion screws 25 may be respectively inserted through one of the two holes and one of the aligning insertion holes 23 to the secure strip 91 to the upper edge of the sunglass assembly 2, as shown in FIG. 8.

[00033] Furthermore, both the connecting beam 4 and the sunglass lenses assembly 2 may be made of plastic material, in order to reduce the overall weight and lessen the burden on the nose when wearing the glasses.

[00034] Apparently, the aforementioned embodiments are only a part of the embodiments of the present utility model and not all of them. The attached drawings illustrate some preferred embodiments of the present utility model, but do not limit the scope of protection of the present utility model. The present utility model may be implemented in many different forms. On the contrary, providing these embodiments is intended to make the understanding of the disclosure of the present utility model more thorough and comprehensive. Although the embodiments of the present utility model have been described in detail above, it should be understood by those skilled in the art that various modifications, substitutions, or alterations to the specific embodiments described may be made, and certain technical features may be replaced with equivalents, without departing from the spirit and scope of the present utility model. The specification and drawings of the present utility model can be directly or indirectly applied to other related technical fields, and such modifications and adaptations shall be deemed to fall within the scope of protection of the present utility model.

CLAIMS

1. A pair of eyeglasses, comprising: a frame and a sunglass lenses assembly,
wherein the frame is fitted with a pair of lenses, each of two endpieces of the frame is connected to a corresponding temple arm through a hinge mechanism, a slot and a first groove is formed at each endpiece of the frame, and the slots are upwardly open, and a magnet is embedded in each first groove;
wherein a shape of sunglass lenses of the sunglass lenses assembly matches the frame, each of two ends of the sunglass lenses assembly is provided with a downward-extending plug adapting to the corresponding slot, a second groove is provided on each plug, and a magnetic component is embedded in each second groove; and
wherein the plugs are configured to be inserted into the corresponding slots, allowing attraction between the magnets and the magnetic components, thereby attaching the sunglass lenses assembly to the frame.
2. The pair of eyeglasses according to claim 1, wherein the respective first groove opens toward a respective inner side of the respective endpiece of the frame, and the respective second groove and the respective first groove are correspondingly formed on one side of the respective plug.
3. The pair of eyeglasses according to claim 1, wherein an upper edge of the sunglass lenses assembly is provided with a connecting beam along a length direction thereof, the two plugs are respectively provided at two ends of the connecting beam, a positioning mechanism is arranged on the connecting beam, the connecting beam is connected to the upper edge of the sunglass lenses assembly through the positioning mechanism, and the sunglass lenses assembly is stopped in a suspended position by the positioning mechanism after flipping over the connecting beam.
4. The pair of eyeglasses according to claim 3, wherein the positioning mechanism comprises a stopper block, a rotating sleeve, a positioning block, and an elastic member;
wherein the stopper block, the rotating sleeve, and the positioning block are sequentially arranged along the length direction of the connecting beam, the stopper block and positioning block are fixed to the connecting beam, the rotating sleeve is rotatably connected to the connecting beam and is capable to slide along the connecting beam, the rotating sleeve

is fixedly connected to the upper edge of the sunglass lenses assembly, the positioning block and the rotating sleeve respectively comprise detent teeth disposed at adjacent ends and extending circumferentially, the elastic member is disposed between the stopper block and the rotating sleeve, with one end connected to the stopper block and the other end connected to the rotating sleeve, the elastic member is configured to drive the rotating sleeve to slide and come into contact with the positioning block, so that the detent teeth on the adjacent ends of the positioning block and the rotating sleeve engage with each other.

5. The pair of eyeglasses according to claim 4, wherein the connecting beam comprises a mounting shaft and two connecting sleeves that are respectively fixedly connected to two ends of the mounting shaft, the diameter of the mounting shaft is smaller than that of the connecting sleeves, the stopper block, the rotating sleeve, and the positioning block are arranged in sequence on the mounting shaft along a length direction of the mounting shaft, the stopper block and the positioning block are fixedly connected to the mounting shaft, the rotating sleeve is rotatably connected to the mounting shaft and capable to slide along the mounting shaft, and the two plugs are respectively arranged on the two connecting sleeves.

6. The pair of eyeglasses according to claim 5, wherein the elastic element is a spring, the spring is sleeved on the mounting shaft, one end of the spring abutting the stopper block and the other end abutting the rotating sleeve.

7. The pair of eyeglasses according to claim 6, wherein the rotating sleeve is inwardly and axially formed with a receiving cavity that opens toward the stopper block, and one end of the spring is accommodated in the receiving cavity and abuts a bottom wall of the receiving cavity.

8. The pair of eyeglasses according to claim 4, wherein the positioning mechanism comprises a T-shaped plate, the T-shaped plate comprises a strip and a protrusion protruded from one side of a middle portion of the strip, the strip is disposed in the same direction at an outer side of the rotating sleeve, the protrusion is fixedly connected to a side wall of the rotating sleeve, two ends of the strip is vertically provided with insertion shafts on one side, and two insertion holes are correspondingly provided at the upper edge of the sunglass lenses assembly.

9. The pair of eyeglasses according to claim 8, wherein the upper edge of the sunglass lenses assembly is provided with a recess for snap-fitting the strip.
10. The pair of eyeglasses according to claim 3, wherein the connecting beam and the sunglass lenses assembly are made of metal or plastic material.