July 7, 1953 J. J. GRECO 2,644,355

LENS ADJUSTING TOOL

Filed May 23, 1951

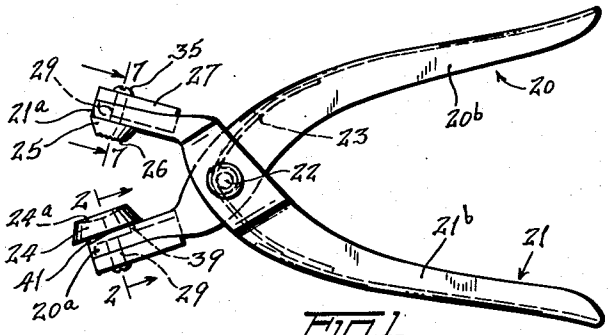


Fig. 1.

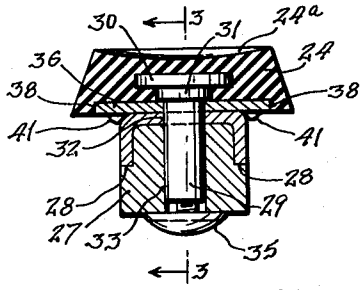


Fig. 2.

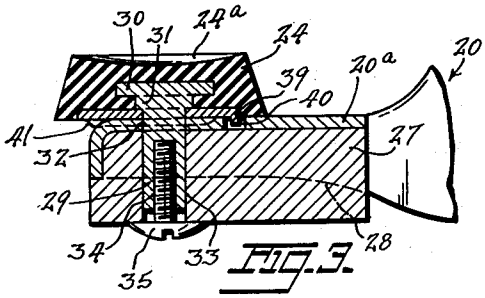


Fig. 3.

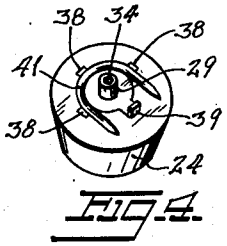


Fig. 4.

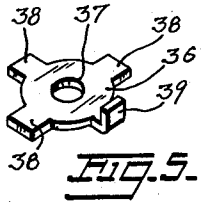


Fig. 5.

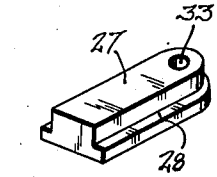


Fig. 6.

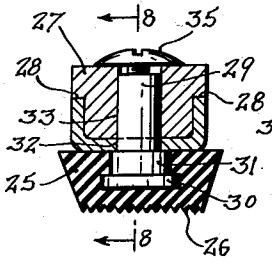


Fig. 7.

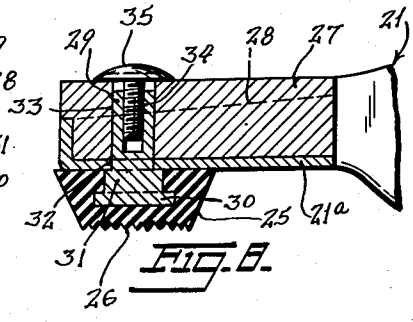


Fig. 8.

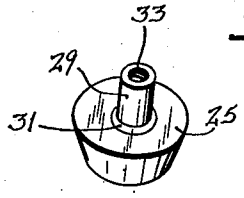


Fig. 9.

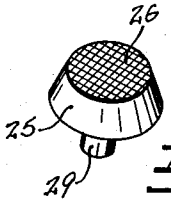


Fig. 10.

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Patented July 7, 1953 2,644,355

UNITED STATES PATENT OFFICE

2,644,355

LENS ADJUSTING TOOL

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Application May 23, 1951, Serial No. 227,851

6 Claims. (Cl. 81—3.6)

1

This invention relates to new and useful improvements in a lens adjusting tool to be used for adjusting the rotative position of a lens within the rim of a shell-type mounting frame.

More particularly, the present invention proposes characterizing the lens adjusting tool by a pair of levers which are pivotally interconnected intermediate of their ends to have opposed jaws on one side of the pivot and against the inner faces of which resilient bodies are positioned to clamp between them the lens of an eyeglass mounting frame in a manner to rotate the lens in the respective rim without danger of breaking the lens.

Heretofore, there has been constructed a lens adjusting tool of the general type proposed by the present invention, in which at least one of the resilient bodies has been loosely mounted on its respective jaw. Such construction has been found objectionable because the loosely mounted body did not always seat flush against its respective face of the lens with the result that when final pressure is applied to the lens for gripping the same, the loosely mounted resilient body was drawn into a position seated flush against its face of the lens and so exerted a pressure on the lens which cracked the same.

It is the primary purpose of the present invention to provide a lens adjusting tool of the type referred to in which both of the resilient bodies are fixedly mounted on their respective gripping jaws so that when the bodies are brought together they seat flat against their respective faces of the lens from the moment of contact therewith and so overcome the objection to the previously proposed lens adjusting tool.

A further object of the present invention proposes forming the levers as hollow stampings to reduce the weight thereof and to provide filler blocks within the hollow jaws of the levers in a manner to reinforce and strengthen the jaws.

Still another object of the present invention proposes a novel means for fixedly mounting the resilient bodies upon the inner faces of the jaws which also functions to fixedly retain the filler blocks in position within those jaws.

The present invention further proposes providing the resilient bodies with generally flat gripping surfaces and to improve the gripping qualities of the faces of those bodies by forming the face of one of the bodies with the slightest concavity and the face of the other of the bodies with roughening serrations.

A still further object of the present invention proposes a novel means for anchoring one of the resilient bodies against possible rotative movement about its mounting axis which anchoring means will also function to retain the lens and the other resilient body against possible rotative

2

movement when the resilient bodies are in position gripping a lens.

It is a further object of the present invention to construct a lens adjusting tool which is simple and durable, which is efficient for its intended purpose and which can be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a side elevational view of a lens adjusting tool constructed in accordance with the present invention.

Fig. 2 is an enlarged transverse sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged partial longitudinal sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a perspective view of one of the resilient bodies, per se.

Fig. 5 is an enlarged perspective view of the anchor plate used on the resilient body shown in Fig. 4.

Fig. 6 is an enlarged perspective view of one of the filler blocks.

Fig. 7 is an enlarged transverse sectional view taken on the line 7—7 of Fig. 1.

Fig. 8 is an enlarged partial longitudinal sectional view taken on the line 8—8 of Fig. 7.

Fig. 9 is a perspective view of the other of the resilient bodies, per se.

Fig. 10 is a view similar to Fig. 9, but looking at the other side of that other resilient body.

The lens adjusting tool, according to the present invention, includes a pair of levers 20 and 21 which are interengaged intermediate of their ends and pivotally connected together by a pivot pin 22. The levers 20 and 21 are in the form of hollow stampings providing opposed hollow jaws 20^a and 21^a and opposed handles 20^b and 21^b. Mounted on the pivot pin 22, there is a coil spring 23 which has ends engaged within the handles 20^b and 21^b urging those handles apart as shown in Fig. 1 and in turn maintaining the jaws 20^a and 21^a spaced from each other. The construction is such that when the handles 20^b and 21^b are squeezed together against the action of the spring 23, the jaws 20^a and 21^a will also move together.

Positioned against the inner faces of the jaws 20^a and 21^a there are resilient bodies 24 and 25 so as to grip a lens between them when the jaws are moved together. Each of the bodies 24 and 25 is formed of rubber (real or synthetic) and has a generally flat inner gripping surface. How-

ever, to improve the gripping quality of the surfaces of the resilient bodies, the body **24** is formed with a slight concavity **24a**, see Figs. 2 and 3, and the resilient body **25** has its gripping surface formed with serrations **26**, see Figs. 7 and 8. In Figs. 1 to 3, the concavity **24a** of the resilient body **24** has been somewhat exaggerated for the purpose of illustration. The concavity in actual practice is very slight so that the surface will have the slightest suction grip upon the face of the lens contacted thereby, which suction grip will release itself the moment the gripping pressure of the resilient body **24** is released.

The gripping bodies **24** and **25** are circular in configuration with the body **24** slightly larger in diameter than the body **25**. However, each of the bodies is of a diameter less than the internal diameter of the lens mounting rims of the frame of a pair of eyeglasses.

To reinforce the hollow gripping jaws **20a** and **21a**, there is positioned in each of the jaws a filler block **27** of metallic material. The filler blocks **27** are shaped to conform to the interior shape of the gripping jaws **20a** and **21a** and are formed with outwardly directed flanges **28** which seat on the edges of the material of the jaws, as best shown in Figs. 2, 3, 7 and 8.

Means is provided for fixedly mounting each of the resilient bodies **24** and **25** in position upon the respective jaw **20a** or **21a** which mounting means also functions to anchor the filler blocks **27** in position within the jaws. The mounting means comprises mounting posts **29** which extend coaxially from the sides of the resilient bodies **24** and **25** facing the gripping jaws **20a** and **21a**. The posts **29** have enlarged heads **30** within the resilient bodies **24** and **25** and shoulder portions **31** for preventing undue pressures from being placed upon the resilient bodies by the mounting means as will become clear as this specification proceeds. The free outer ends of the mounting posts **29** are extended through holes **32** formed in the material of the gripping jaws **20a** and **21a** and into complementary aligned holes **33** formed in the respective filler block **27**. Extended inward from the free ends of the mounting posts **29**, there are threaded recesses **34** into which screws **35** are threaded. The screws **35** are threaded into the mounting posts **29** from the outer faces of the filler blocks and have their heads bearing against the outer faces of those filler blocks **27**. Thus, the mounting means fixedly mounts the resilient bodies in position on the inner faces of the gripping jaws **20a** and **21a** and at the same time retains the filler blocks **27** in position. However, the mounting means can be quickly released by removing the screws **35** so that the resilient bodies **24** and **25** can be replaced whenever required.

Means is provided in connection with the resilient body **24** for retaining that body against any possible rotative movement so that when a lens is gripped between the resilient bodies the lens and the other resilient body **25** will also be retained against possible rotative movement. That retaining means comprises a small circular anchor plate **36** which is set into the outer face of the resilient body **24** with its outer face flush with the outer face of the resilient body and with its inner face contacting the shoulder portion **31** of the respective mounting post **29**. The anchor plate **36** is formed with a concentric hole **37** through which the respective post **29** passes.

Projecting from three sides of the plate **36** there are lugs **38** which are molded into the material of the resilient body **24** holding that body from turning relative to the plate **36**. Extending from the fourth side of the plate **36**, there is a right-angularly bent lug **39**, see Figs. 3 to 5, which is engaged into a complementary hole **40** formed in the material of the jaw **20a** for anchoring the plate **36** against turning relative to the jaw **20a**. The hole **40** is formed in the jaw **20a** to one side of the hole **32**, as shown in Fig. 3.

To further assist in holding the resilient body **24** against rotative movement, the outer face of the resilient body is formed with a U-shaped rib **41** which extends about the free end of the jaw **20a**, as shown in Figs. 1 to 3. The rib **41** is molded directly across the outer face of the lugs **38** to the anchor plate **36** so as to securely retain the anchor plate in position in its recess within the outer face of the resilient body **24**.

From Figs. 2 and 3, it will be noted that the shoulder portion **31** of the mounting post of the resilient body **24** is engaged against the inner face of the anchor plate **36**. On the other hand, the shoulder portion **31** of the resilient body **25** is seated directly on the jaw **21**, as shown in Figs. 7 and 8. Thus, those shoulder portions **31** function to prevent any undue pressures from being exerted on the resilient bodies when the screws **35** are tightened into position.

From the foregoing description, it is apparent that the present invention proposes a novel lens adjusting tool in which the resilient bodies **24** and **25** are both fixedly mounted in position on their respective jaws **20a** and **21a** to seat flush against the opposite sides of the lens from the moment that contact is made therewith. Such construction prevents any stresses being applied to the surfaces of the lens when full pressure is applied thereto which would tend to break the lens.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. In a lens adjusting tool having a pair of levers arranged in crossed relation and pivoted to each other at their crossed areas, opposed jaws on the levers on one side of their pivotal connection, said jaws being hollow and having open sides facing away from each other, filler blocks positioned in said jaws from the open sides thereof, a resilient body of a peripheral size less than the internal diameter of the lens mounting frames of a pair of eyeglasses positioned against the inner face of each of said jaws, the peripheral size of one resilient body being greater than the other, and means fixedly mounting said bodies in position on the inner faces of said jaws and retaining said blocks in position in said jaws reinforcing the same.

2. In a lens adjusting tool having a pair of levers arranged in crossed relation and pivoted to each other at their crossed areas, opposed jaws on the levers on one side of their pivotal connection, said jaws being hollow and having open sides facing away from each other, filler blocks positioned in said jaws from the open sides thereof, a resilient body of a peripheral size less than the internal diameter of the lens mounting frames of a pair of eyeglasses positioned against the

inner face of each of said jaws, and means fixedly mounting said bodies in position on the inner faces of said jaws and retaining said blocks in position in said jaws reinforcing the same, one of said resilient bodies being of a peripheral size slightly greater than the other resilient body, the larger of said resilient bodies having a slight concavity and the other having its face roughened.

3. In a lens adjusting tool having a pair of levers arranged in crossed relation and pivoted to each other at their crossed areas, opposed jaws on the levers on one side of their pivotal connection, said jaws being hollow and having open sides facing away from each other, filler blocks positioned in said jaws from the open sides thereof, a resilient body of a peripheral size less than the internal diameter of the lens mounting frames of a eyeglasses positioned against the inner face of each of said jaws, and means fixedly mounting said bodies in position on the inner faces of said jaws and retaining said blocks in position in said jaws reinforcing the same, one of said resilient bodies being of a peripheral size slightly greater than the other resilient body, said mounting means comprising mounting posts extending from the faces of said resilient bodies facing said jaws, said mounting posts being passed into aligned holes formed in said jaws and said filler blocks, said mounting posts having threaded recesses extended in from the outer ends thereof, and screws threaded into said recesses from the outer faces of said filler blocks.

4. In a lens adjusting tool having a pair of levers arranged in crossed relation and pivoted to each other at their crossed areas, opposed jaws on the levers on one side of their pivotal connection, said jaws being hollow and having open sides facing away from each other, filler blocks positioned in said jaws from the open sides thereof, a resilient body of a peripheral size less than the internal diameter of the lens mounting frames of a pair of eyeglasses positioned against the inner face of each of said jaws, and means fixedly mounting said bodies in position on the inner faces of said jaws and retaining said blocks in position in said jaws reinforcing the same, one of said resilient bodies being of a peripheral size slightly greater than the other resilient body, said mounting means comprising mounting posts extending from the faces of said resilient bodies facing said jaws, said mounting posts being passed into aligned holes formed in said jaws and said filler blocks, said mounting posts having threaded recesses extended in from the outer ends thereof, and screws threaded into said recesses from the outer faces of said filler blocks, an anchor plate set into the face of said one of said resilient bodies about its mounting posts, lugs projecting from several sides of said anchor plate and set into the said face of the said one resilient body, and a right angularly bent lug extending from said anchor plate, said jaw mounting said resilient body having a hole into which said right angularly bent lug extends to hold the said one resilient body from rotating about its mounting posts as an axis.

5. In a lens adjusting tool having a pair of levers arranged in crossed relation and pivoted to each other at their crossed areas, opposed jaws on the levers on one side of their pivotal connection, said jaws being hollow and having open sides facing away from each other, filler blocks positioned in said jaws from the open sides thereof, a resilient body of a peripheral size less than the internal diameter of the lens mounting frames of a pair of eyeglasses positioned against the inner face of each of said jaws, and means fixedly mounting said bodies in position on the inner faces of said jaws and retaining said blocks in position in said jaws reinforcing the same, one of said resilient bodies being of a peripheral size slightly greater than the other resilient body, said mounting means comprising mounting posts extending from the faces of said resilient bodies facing said jaws, said mounting posts being passed into aligned holes formed in said jaws and said filler blocks, said mounting posts having threaded recesses extended in from the outer ends thereof, and screws threaded into said recesses from the outer faces of said filler blocks, and shoulder portions on said mounting posts for limiting the action of said screws in mounting said resilient bodies on said jaws.

6. In a lens adjusting tool having a pair of levers arranged in crossed relation and pivoted to each other at their crossed areas, opposed jaws on the levers on one side of their pivotal connection, said jaws being hollow and having open sides facing away from each other, filler blocks positioned in said jaws from the open sides thereof, a resilient body of a peripheral size less than the internal diameter of the lens mounting frames of a pair of eyeglasses positioned against the inner face of each of said jaws, and means fixedly mounting said bodies in position on the inner faces of said jaws and retaining said blocks in position in said jaws reinforcing the same, one of said resilient bodies being of a peripheral size slightly greater than the other resilient body, said mounting means comprising mounting posts extending from the faces of said resilient bodies facing said jaws, said mounting posts being passed into aligned holes formed in said jaws and said filler blocks, said mounting posts having threaded recesses extended in from the outer ends thereof, and screws threaded into said recesses from the outer faces of said filler blocks, an anchor plate set into the face of said one of said resilient bodies about its mounting posts, lugs projecting from several sides of said anchor plate and set into the said face of the said one resilient body, and a right angularly bent lug extending from said anchor plate, said jaws mounting said resilient body having a hole into which said right angularly bent lug extends to hold the said one resilient body from rotating about its mounting post as an axis, and a U-shaped rib mounted on the face of said one resilient body facing its respective jaw and over said first mentioned lugs for holding said anchor plate in position in the face of the said one resilient body, said rib being extended about the sides of the jaw mounting said one resilient body forming a further means for holding the said one resilient body from rotating.

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