Oct. 17, 1950 C. H. WILEN 2,526,181

UNDERWATER GOGGLES

Filed Nov. 19, 1947

Fig. 1

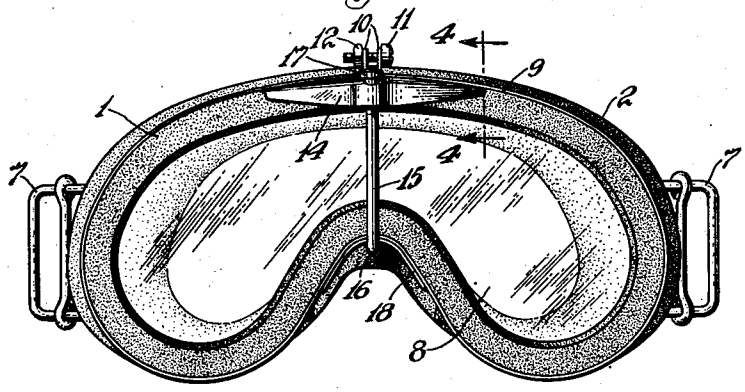


Fig. 2

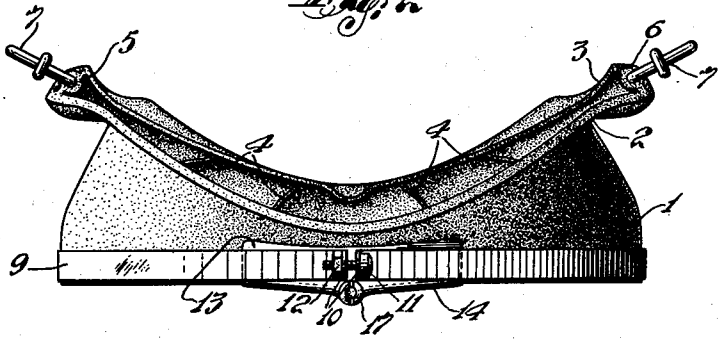


Fig. 3

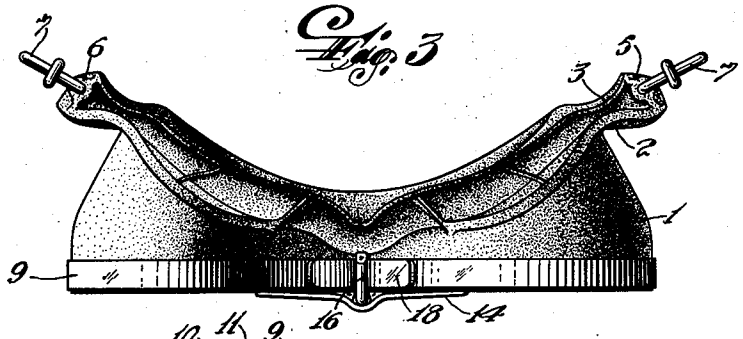
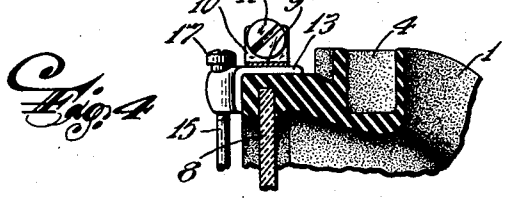


Fig. 4



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UNDERWATER GOGGLES

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4 Claims. (Cl. 2—14)

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This invention relates to the construction of goggles which are used for sight under water. In my joint Patent 2,182,104 with Alexandre Kramarenko, issued December 5, 1939, there is shown and described an underwater goggle which in general shows many of the features incorporated in my present application.

It has been found in the manufacture of the goggles shown in said patent that the sealing of the glass in the frame was a rather expensive operation, since the sealing had to be done entirely by hand with a sealing material which is more or less sticky and it took a long time to set. Thereby, necessitating a large number of frames waiting for this setting to take place. Furthermore in the handling of the setting material the glass became smudged and this required the cleaning of the glass which added further to its cost.

The principal object of my present invention is to eliminate all of these difficulties and yet retain an airtight joint between the glass and the frame. Any defect in the sealing between the glass and the frame will cause a leak that allows the water or air to seep into the goggle and thus destroy the suction and prevent an airtight joint of the goggle against the face.

My improvements will be readily appreciated by the description which follows:

In the drawing

Figure 1 is a front view of the goggles with my improvements attached thereto.

Figure 2 is a view of Figure 1 looking down from the top.

Figure 3 is a view of Figure 1 looking upwardly at the bottom.

While Figure 4 is a view on the line 4—4 of Figure 1.

In the various views wherein like numbers refer to corresponding parts, 1 is generally the goggle frame, the rear portion of which is provided with two spaced flaps 2 and 3 which extend all the way around the rear part of the frame. These flaps are joined by a plurality of spaced flexible braces 4 intermediate the ends while the opposite ends of the flaps 2 and 3 are joined by unions 5 and 6 which are adapted to receive buckle members 7 that are adapted to receive a headband (not shown) as brought out in the patent previously mentioned. The construction of these flaps is for the purpose of squeezing the goggles tightly against the face which expels some of the air within the goggles, thereby setting up a partial vacuum in the goggles and thus helps to hold the goggles in place and keeps the water out. Since

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this part of the goggle is not part of my present invention, further description does not seem to be necessary.

Coming now to my improvements, the frame 1 all around the front portion has a recess therein to receive a single piece of glass 8 or other suitable transparent material. To hold the glass 8 in position in the frame and to provide a watertight joint therebetween, I utilize a thin metal band 9, which is made of suitable material such as rust proof metal alloy. The two ends of the band 9 are turned upwardly at 10 to receive a lock stud or bolt 11 and nut 12, and lock washers may be utilized if desired. Extending a substantial distance under both free ends of the band 9 is a plate 13 having a flange 14 extending downwardly over the front edge of the frame as shown in Figure 1. The plate 13 at the junction of the downwardly extending flange is provided with a hole to receive a clamping or tie rod 15, the lower end 16 of which is bent inwardly to grip the band at the indented nasal portion of the frame. The clamping rod 15 is threaded at the plate end to receive an adjusting nut 17 so as to put a compression force on the plate 13. This will insure that the material of the frame under the plate 13 is compressed securely around the rim of the glass 8 under the clamping bolt 11. Preferably, a reenforcing element 18 formed out of stiff spring material is utilized between the bent end 16 of the rod 15 and the band 9 so as to transmit a compression force over a considerable area at the indented nasal portion. By the use of the compression plate 13 and the reenforcing element 18 and the rod 15, the drawing up of the band by the bolt 11 cannot pull the band away from the indented nasal portion of the frame.

It may be mentioned in passing that I have found that a band of from one-fourth to three-eighths of an inch wide, when applied directly over the rim of the glass so that the rim is approximately in the center line of the band—the material of the frame is usually made of rubber—can be compressed sufficiently so as to make a perfectly air and watertight joint between the glass and the frame, and that the glass can be installed in the frame in a very small fraction of the time required by the cementing operation set forth in the patent heretofore referred to. It will be noted that the small rod 15 is positioned directly over the wearer's nose so that it does not interfere with the wide angle vision of the goggles.

Having thus described my invention, what I claim is:

1. Goggles especially for use under water, com-

prising a frame of suitable material which is compressible especially against the forehead of a user and being impervious to water and formed to fit around the nose and across the eyes of the user, the frame having a recess adjacent its front edge, a single piece of plate glass having its rim fitting in said recess, a suitable flexible band extending around the outer surface of the frame over the recess and rim of the glass with means for drawing adjacent ends of the band toward each other and adjustable take-up means for preventing the band from pulling away from the indented nasal portion of the frame thereby insuring an air and water tight fit all around the rim of the glass.

2. Goggles especially for use under water, comprising a frame of suitable material which is compressible and being impervious to water and formed to fit around the nose and across the eyes of the user, the frame having a recess adjacent its front edge, a single piece of plate glass having its rim fitting in said recess, a suitable flexible band extending around the outer surface of the frame over the recess and rim of the glass with means for drawing adjacent ends of the band toward each other, a flanged plate positioned under the two ends of the band with its flange extending downwardly over the front edge of the frame, an adjustable tie rod extending from the plate across the frame and having an inwardly projecting rigid end engaging the band at the indented nasal portion.

3. Goggles especially for use under water, comprising a frame of suitable material which is compressible and being impervious to water and formed to fit around the nose and across the eyes of the user, the frame having a recess adjacent its front edge, a single piece of plate glass having its rim fitting in said recess, a suitable flexible band extending around the outer surface of the frame over the recess and rim of the glass with means for drawing adjacent ends of the band toward each other, a metal plate positioned

and extending a substantial distance under the two drawing ends of the band, an adjustable clamping rod extending from a part of said plate across the frame in front of the glass and having an inturned rigid end for applying pressure to the band at the indented nasal portion and a reenforcing element preferably utilized between the said inturned end and the band.

4. Goggles especially for use in seeing under water comprising, a frame of compressible material and impervious to water and formed to fit around the nose and across the eyes of the user, the frame having an internal recess around its front edge, a single piece of suitable transparent material having its rim fitting in said recess, a strong metallic band positioned over the recess and following the contour of said front edge, means for drawing the two ends of the band toward each other to cause the band to compress the material over the recess, adjustable means for insuring compression of said material directly under the two band ends, said adjustable means including a member extending downwardly over the nasal portion of the frame and terminating in an inwardly extending rigid end and a reinforcing element positioned at the nasal portion for cooperation with the rigid end of said member for preventing the band from moving out of compression position at the indented nasal portion of the frame.

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