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Hill

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[54] **MOUTHPIECE FOR A SNORKEL**

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[52] **U.S. Cl.** ..... **128/145 A**

[51] **Int. Cl.** **A63b 7/00**

[58] **Field of Search** ..... 128/145 A, 145 R, 147, 128/140, 208, 136, 139

[56] **References Cited**

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[57] **ABSTRACT**

An improved mouthpiece for a snorkel wherein the mouthpiece comprises a curved flap of flexible material having an arc length of 3½ to 4¼ inches and has a smooth concave surface so that the same may be retained in the mouth of a diver without necessity of the diver exerting a gripping force on the mouthpiece with his teeth.

2 Claims, 4 Drawing Figures

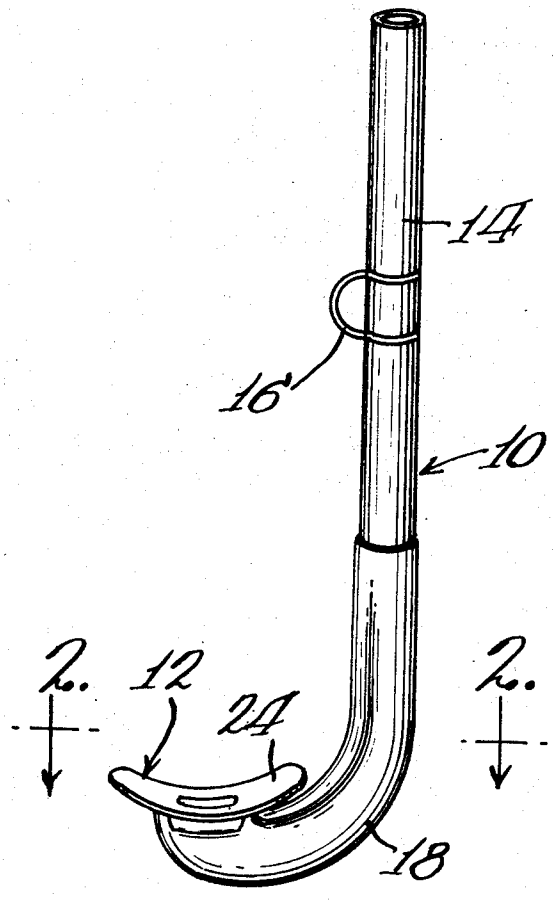


Fig. 1.

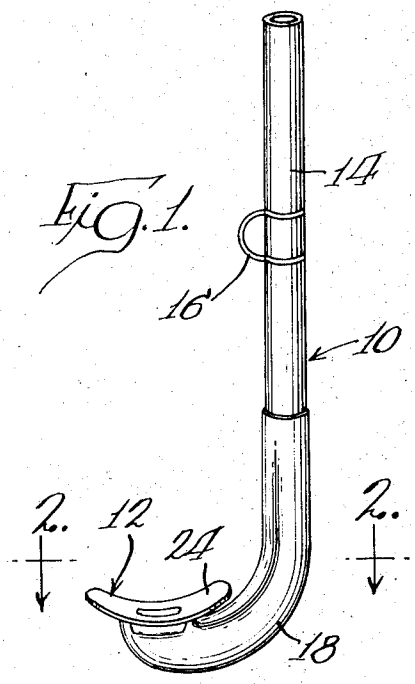


Fig. 4.

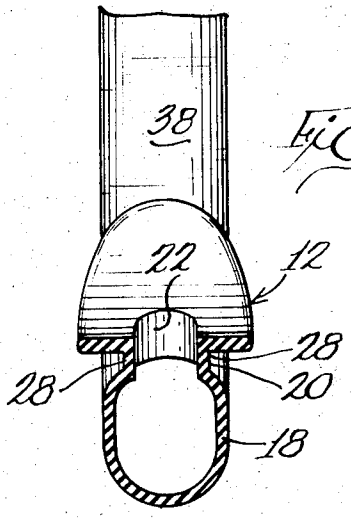


Fig. 2.

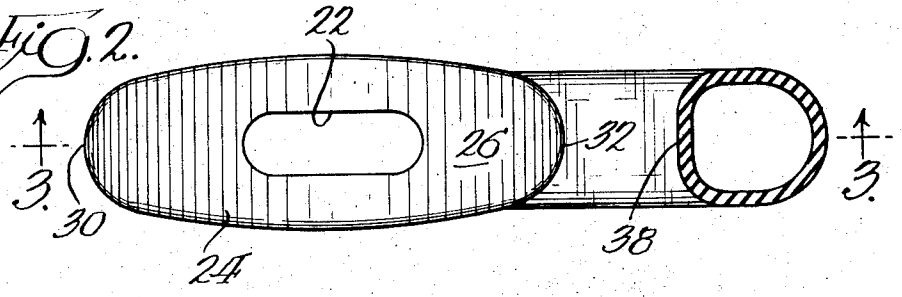
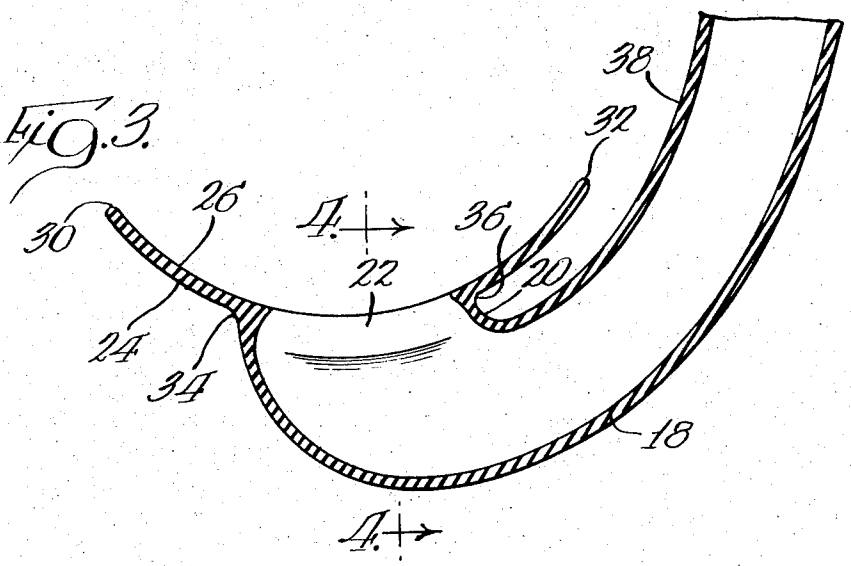


Fig. 3.



MOUTHPIECE FOR A SNORKEL

BACKGROUND OF THE INVENTION

This invention relates to snorkels and, more specifically, to snorkels having improved mouthpieces.

The upsurge in the popularity of a variety of sports over the last few years has included an upsurge in the popularity of skin diving as well. Typically, a skin diver will include with his equipment a snorkel which is a relatively short tube including a curved portion having a mouthpiece thereon. The mouthpiece is slipped in the mouth and the opposite end of the tube will extend above the surface allowing the skin diver to swim along the surface with his face submerged while breathing through the snorkel.

Typically, snorkel mouthpieces include a curved flap which is received between the lips and the teeth of the user. In addition, from the concave surface of the mouthpiece, there are generally provided a pair of T-shaped lugs which extend between the upper and lower sets of teeth of the wearer and upon which the wearer clamps his teeth for the purpose of retaining the mouthpiece.

While such prior art structures serve their intended purpose of permitting the wearer to breathe while maintaining his face under water, after the skin diver has worn such a snorkel continuously over a period of time, an annoying fatigue of the jaw muscles sets in due to continued clamping force that must be exerted by the jaws on the mouthpiece to retain the same in the mouth of the wearer.

SUMMARY OF THE INVENTION

It is the principal object of the invention to provide a new and improved mouthpiece for snorkels. More specifically, it is an object of the invention to provide such a snorkel assembly wherein the mouthpiece is easily and simply retained in the mouth of the user without requiring the user to exert a clamping force thereon with the jaw.

The exemplary embodiment of the invention achieves the foregoing object in a structure including an elongated tube having a generally straight portion and a curved portion with a mouthpiece opening upwardly on the latter. The mouthpiece consists of a curved flap of material which, according to the preferred embodiment, has an arc length in the range of 3½ to 4¼ inches and an optimum arc length of 3⅞ inches. The concave surface of the mouthpiece is smooth, there being no lugs or the like to be gripped between teeth thereon by reason of the arc length of the mouthpiece being sufficiently long so as to be comfortably retained in the mouth without the need for such lugs.

Preferably, the radius of the curved flap is approximately 2 inches while the ends of the flap extending away from the curved portion of the tube to which the mouthpiece is connected have a length in the range of 1⅛ to 1¼ inches.

It is also preferred that the curved portion of the snorkel be formed of a soft rubber-like material and that the inner side of the outer surface be relatively flat so as to avoid annoying point contact with facial bones of the wearer.

Other objects and advantages will become apparent from the following specification taken in conjunction with the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a snorkel made according to the invention;

FIG. **2** is a sectional view taken approximately along the line **2—2** of FIG. **1** and drawn generally to full scale;

FIG. **3** is a vertical section taken approximately along the line **3—3** of FIG. **2** and, again, is drawn approximately to full scale; and

FIG. **4** is a vertical section taken approximately along the line **4—4** of FIG. **3** and, again, is drawn approximately to full scale.

DESCRIPTION OF THE PREFERRED EMBODIMENT

An exemplary embodiment of a snorkel made according to the invention is illustrated in FIG. **1** and is seen to be comprised of a tube, generally designated **10** and a mouthpiece, generally designated **12.** The tube **10** includes a first, relatively straight section **14** which may be formed of any suitable material, normally a corrosion resistant material such as stiff plastic. If desired, a conventional retaining strap **16** may be provided on the tube **14** and, by reason of its stiffness, the same will not collapse either by reason of the resiliency of the retaining strap **16** or possibly the retaining strap for a face mask if that is used for retaining purposes.

The second section of the tube **10** is designated **18** and is curved. According to the preferred embodiment of the invention, the curved section **18** is formed of a relatively soft material, again, corrosion resistant and may be natural or synthetic rubber.

The two sections **14** and **18** define a J-shaped tube and the tip of the curved section **18** is in fluid communication with the mouthpiece as may be seen in FIGS. **3** and **4** by reason of a connecting neck **20** having an elongated opening **22** therein extending to the interior surface of the mouthpiece **12.**

According to the preferred embodiment, the mouthpiece **12** is formed integrally with the curved tube section **18** and comprises a curved flap **24** having the opening **22** emerging in the center thereof. The concave surface **26** of the curved flap **24** is smooth, i.e., free from projections or lugs of sufficient size and length to be gripped between the teeth.

The neck **20,** as best viewed in FIG. **4,** includes recesses **28** extending along two sides thereof in a direction generally parallel to the length of the flap **24.** It will be appreciated that the presence of the recesses **28** allow the lips of a user to substantially close and thereby provide comfort during use.

As mentioned previously, the inventive snorkel of the invention and particularly the mouthpiece thereof is particularly suited for retention by a wearer without requiring the wearer to exert gripping force with the jaws which, after a period of time, becomes annoying due to fatigue of the jaw muscles. To this end, the flap **24** has a substantially longer arc length than prior art structures. According to the preferred embodiment, the arc length from a point **30** to a point **32** is in the range of 3½ to 4¼ inches with an optimum arc length of 3⅞ inches. In addition, the ends of the flap extending from the neck **20** are such that the length of the ends (as represented by the distance between points **30** and **34** and **32** and **36**) is in the range of 1⅛ to 1¼ inches. Of course, the upper limit of the range could be in-

creased somewhat although this would have the effect of either narrowing the neck which possibly could obstruct the rate of air flow through the snorkel while in use or, in the alternative, increase the arc length of the flap **24** to the point where it becomes uncomfortable.

It has also been found that benefits and advantages of the invention can best be achieved if the radius of the curvature of the flap **24** is approximately 2 inches although, again, there may be some deviation permitted. Generally, however, it would be more desirable to decrease the radius than to increase it, again, for comfort reasons.

The top to bottom dimension of the flap **22** as viewed in FIG. **2** is not particularly critical to the purposes of the invention. Normally, a more or less conventional dimension of 1¼ inches will be used.

To further enhance the comfort of the wearer of a snorkel made according to the invention, the inner side of the outer surface of the curved tube portion **18,** designated **38,** will be made relatively flat as best viewed in FIG. **2.** As will be recognized, this surface of the tube will frequently be in abutment with the user's face and by reason of the fabrication of the curved portion **18** of soft material and the provision of the flat surface **38,** the pressure of the snorkel against facial bones of the wearer will be spread out over a substantial surface and partially be absorbed by the soft material of which the curved tube portion **18** is formed. Thus, the invention also eliminates annoying point pressure contact with facial bones during use.

From the foregoing, it will be appreciated that a snorkel made according to the invention can easily be retained in the mouth of the wearer without resort to the exertion of jaw pressure which can produce annoying fatigue. Moreover, problems of annoying contact with facial bones are minimized by reason of the flat surface and soft material employed in fabricating the curved tube portion **18.**

I claim:

1. In a snorkel breathing tube including a tubular member having a relatively straight section terminating in an end adapted to be located above the surface of a body of water and a curved portion including a flexible mouthpiece opening in fluid communication with the interior of the tube, the improvement in said mouthpiece wherein said mouthpiece comprises a curved flap having a relatively smooth concave surface an arc length in the range of 3½ to 4¼ inches, a radius of approximately 2 inches and extends to both sides of said tube at the point of connection thereto a distance in the range of 1 ⅛ – 1 ¼ inches whereby said mouthpiece may be easily retained in the mouth of a diver without requiring the diver to grip the same with his teeth.

2. A snorkel according to claim **1** wherein said arc length is approximately 3⅞ inches.

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