

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* PHILLIP M. ADAMS

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Appeal 2007-0871  
Application 10/967,816  
Technology Center 3600

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Decided: March 29, 2007

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Before EDWARD C. KIMLIN, CHARLES F. WARREN, and LINDA M. GAUDETTE, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-30. Claim 1 is illustrative:

1. A method of underwater propulsion comprising:

equipping a user with a buoyancy compensator comprising a controller, tank containing at least one gas, and an expander, the tank being operably connected to deliver the at least one gas to the expander under the control of the controller;

providing a hydrofoil;

connecting the hydrofoil to the user;

positioning the user and hydrofoil underwater at a selected depth; and

operating the controller to alternate the overall buoyancy of the user and hydrofoil between levels above and below neutral buoyancy, the controller releasing the at least one gas into the ambient water to decrease the overall buoyancy.

The Examiner relies upon the following references as evidence of obviousness:

Schuler	US 3,898,705	Aug. 12, 1975
McLane	US 3,947,906	Apr. 6, 1976

Appellant's claimed invention is directed to a method of underwater propulsion of an individual using a buoyancy compensator that comprises a controller, a tank containing at least one gas, and an expander. The tank is operably connected to deliver the gas to the expander to alter the overall buoyancy of the individual in the water. Gas is released to the ambient water to decrease the overall buoyancy.

Appealed claims 1-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over McLane in view of Schuler.

Appellant has not set forth separate arguments for any particular claim on appeal. Accordingly, all of the appealed claims stand or fall together with claim 1.

We have thoroughly reviewed each of Appellant's arguments for patentability. However, we are in complete agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the Examiner's rejection for essentially those reasons expressed in the Answer, and we add the following for emphasis only.

Appellant does not dispute the Examiner's factual determination that McLane, like Appellant, discloses a method of underwater propulsion which comprises equipping a user with a buoyancy compensator comprising a controller, a tank containing at least one gas, and an expander wherein the tank is operably connected to deliver the gas to the expander under the control of the controller, and, also, providing a hydrofoil that is connected to the user. As appreciated by the Examiner, McLane does not teach that the controller operates to release the gas into the ambient water to decrease the overall buoyancy. Rather, McLane teaches a closed system wherein a pump is used to transfer air from the tank to the expander, or bladder, and vice versa (*see col. 3, ll. 1-4*).

We fully concur with the Examiner, however, that Schuler evidences the obviousness of modifying the system of McLane such that buoyancy is decreased by expelling gas to the ambient water. Manifestly, if the gas is expelled to the ambient water, as claimed, the storage tank of the gas must be larger compared to McLane's tank for use over a comparable period of time. We agree with the Examiner that the motivation to modify the system of McLane in accordance with the claimed invention would have been to

utilize a simplified one-way valve between the tank and the expander. In our view, it would have been a matter of obviousness for one of ordinary skill in the art to balance the advantage of simplicity of discharging the gas to the ambient water while using a one-way valve between the tank and the expander, and the disadvantage of requiring a larger storage tank for the gas. As evidenced by the applied prior art, it was known in the art of personal buoyancy systems to employ either a closed system comprising the storage tank and the expander or an open system which expels gas from the expander to the ambient water.

We are not persuaded by Appellant's argument that "modifying the closed system of McLane to incorporate the open system of Schuler would have fundamentally changed McLane's principle of operation" (page 5 of principal Br., penultimate para.). We concur with the Examiner that the essential principal of McLane's operation, disclosed at column 2, lines 32-58, is controlling the amount of gas in the bladder in order to control the level of submersion of the swimmer which, in conjunction with the taper of the fin members, provides for forward propulsion of the swimmer. We do not subscribe to Appellant's argument that the basic principal underlying the McLane system is specifically associated with a closed system. As explained above, it is our view that one of ordinary skill in the art would have found it obvious to employ, as alternatives, an open or closed system. We also do not find merit in Appellant's argument that a closed system is more associated with a system for untrained swimmers than experienced ones.

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As a final point, we note that Appellant bases no argument upon objective evidence of nonobviousness, such as unexpected results, which would serve to rebut the inference of obviousness established by the Examiner.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(iv)(effective Sept. 13, 2004).

AFFIRMED

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