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Choi et al

(34) PERSONAL HYDRATION SYSTEM WITH
COMPONENT CONNECTIVITY

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patent is extended or adjusted under 35
U.S.C. 154(b) by 217 days.

(21) Appl. No.: 10/617,879

(22) Filed: Jul. 9, 2003

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Related U.S. Application Data

(63) Continuation-in-part of application No. 10/267,036,
filed on Oct. 7, 2002, now Pat. No. 6,908,015.

(60) Provisional application No. 60/328,260, filed on Oct.
9, 2001.

(51) Int. Cl.
B67D 5/064 (2006.01)

(52) U.S. Cl. 222/175; 222/105; 222/192;
128/202.5; 141/379; 220/714; 224/148.2

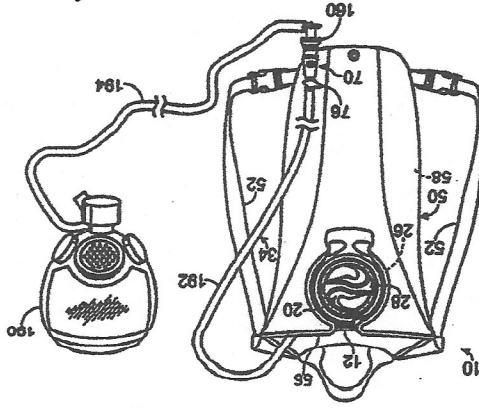
(58) Field of Classification Search 222/92;
222/105, 167, 175, 386.5, 501, 527, 529;
222/531, 537, 548, 610, 192; 128/203.21;
128/202.5; 141/379; 224/148.2; 220/714

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See application file for complete search history.

U.S. PATENT DOCUMENTS

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28 Claims, 13 Drawing Sheets



Quick-connect assemblies and hydration systems incorpo-
rating the same. The hydration system includes a fluid
reservoir and may be housed within a pack. Drink fluid is
drawn from the reservoir through a drink tube to a mouth-
piece. In some embodiments, the drink tube is connected to
the reservoir at an exit port, the hydration system includes a
manually actuated on/off valve, a filter, a pump, and/or a
bite-actuated mouthpiece. The quick-connect assembly flu-
idly interconnects components of the hydration system and
is configured to quickly release, and permit reattachment of,
the detached components or replacement components. In
some embodiments, the replacement components enable
different performance from the detached components. In
some embodiments, the quick-connect assembly is adapted
to selectively couple a bite-actuated mouthpiece and a gas
mask adapter to the drink tube. In some embodiments, at
least a portion, if not the entire, hydration system is formed
from a chemically resistant material.

ABSTRACT

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(Continued)

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MASARIE Natick helps Lighthouse

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These search terms have been highlighted: defense supply center hydration systems

Horizons

Winter 2004

Product Spotlight: Alpha Hydration System

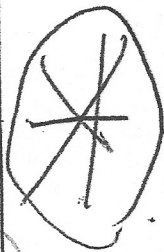


Building upon our longstanding production of canteens for the military, the Seattle Lighthouse for the Blind has recently developed a new line of hydration systems. These products feature 100 and 120 oz. water reservoirs carried backpack style, equipped with bite valves and drinking tubes allowing soldiers to stay hydrated while on the march. The Alpha hydration system stands out as the most popular item in this line. "What makes the Alpha unique is being rigid enough to keep its shape, but flexible enough to mold to a person's back," says Norm Slader, director of engineering services.

According to Norm, hydration systems have come a long way since the first prototypes, IV bags in socks with tubes attached. Commercial hydration systems have become big business with hikers, bikers and the military. The Lighthouse team felt they could improve on the commercial hydration lines already being purchased by the armed forces.

During conversations with the Natick Research, Development and Engineering Center (NRDEC), the Lighthouse engineering team proposed developing a new hydration system design. Norm credits Roger Masadi of NRDEC with helping to spearhead the project.

"They were aware there were some problems associated with commercial systems," Norm reveals. "People would fall on the packs and they would break." The commercial systems are also difficult to dry out. "After a while you start to get mildew," he adds.



This is
Canteen's Army
Start

Norm and his team had three primary objectives in creating the Alpha hydration system. The product must be strong and durable, easily cleaned and hygienic. Initial testing proved that the systems met the primary design objectives and the Alpha went up for sale in the military base store market.

The Lighthouse currently supplies hydration systems to military base service centers in around the country. Initial sales figures indicate strong demand for hydration systems in general and the Alpha unit in particular. Norm reports that of 9700 hydration systems sold in the fiscal year ending September 2003, 6100 were the Alpha model.

The Lighthouse is now working hard to make a Lighthouse hydration system the standard military issue item under the Javits Wagner O'Day Act (JWOD). The JWOD Program creates jobs and training opportunities for people who are blind or have other severe disabilities, mainly through requiring federal agencies to purchase specific products from nonprofit agencies employing disabled individuals. Approximately 100 Lighthouse employees who are blind, Deaf-Blind and blind with developmental disabilities work directly in producing quality products for federal agencies under JWOD. Five of these individuals are employed on the Alpha hydration line.

The development of the Alpha hydration system helped establish the Lighthouse as a credible, capable development partner with NRDEC. This is key to our efforts to supply hydration systems designed expressly for the military. "What we want to do, ultimately, is supply hydration systems to the Department of Defense the same way we supply them with canteens," Norm says. The Lighthouse already supplies the military with all of its one and two quart hard canteens under JWOD. As sales of hydration systems grow, the Lighthouse will create additional job opportunities for blind individuals

The Lighthouse team is proud to have developed this innovative hydration system. The Alpha is "an item with features that other commercial systems don't have. It's easy to fill, easy to clean, easy to dry out and easy to take care of," Norm concludes.

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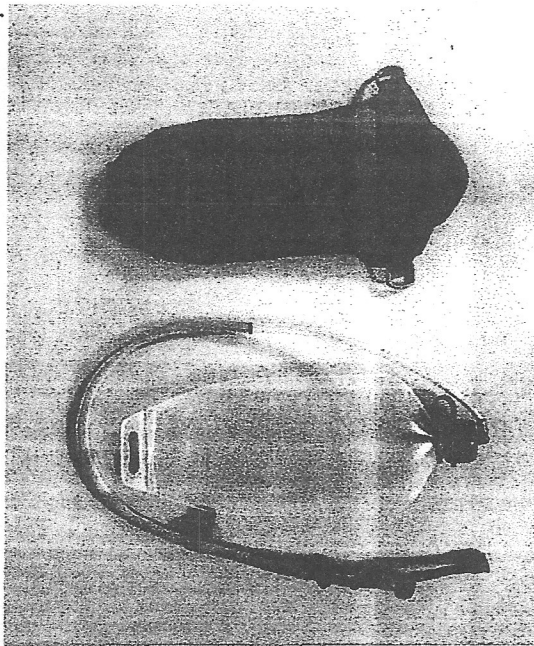
2501 South Plum Street, Seattle WA 98144 or PO Box 14959, Seattle WA 98114 • (206) 322-4200

Light House
→ David Grant Patton & Nick Kill

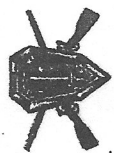
On-the-Move Hydration



- Chem / Bio Resistant bladder assembly
 - CB testing scheduled at Dugway Apr 06
- Blow molded bladder, 70 oz. capacity
 - Holds its shape, yet collapses as water is removed
 - Easy to insert and remove from carrier
 - EVA material, 30 mil minimum thickness
- Hang to dry with no creases for water residue and bacterial growth
 - Meets FDA and NSF standards
- Low projected production cost: \$21.50 bladder assembly



2006 Army's In-House Design provided by General Dynamics



CAMELBAK

CamelBak CERTIFICATE OF COMPLIANCE

PRODUCT: CamelBak MOLLE Hydration System
SPECIFICATION: 100oz. Reservoir with extended neck screw cap closure in Olive Drab
IDENTIFICATION: CamelBak carrier with 1 1/2" webbing for shoulder strap and handle
100oz. Reservoir with exterior fill cap, smoke Grey tubing with low
reflective surface and Black Big Blue valve.

PURCHASE ORDER: 0000380
QUANTITY: 1600 units

VENDOR: CamelBak
LOT NUMBER: N/A

I certify that the above component(s) presented for acceptance under the terms of contract number: **DAAK68-97-D-9302** complies with the applicable specification(s) and/or contract requirements.

Cindy Prodis

Cindy Prodis
Military Inside Sales Manager
CamelBak

October 7, 2002

John Omar - Vendor POC

4/28/98 - In John Kirk
CMT# DAAK02-98-P8575
@ KATK

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CamelBak - Stormy

ILC DOVER, INC.

December 17, 1986

Sole Designer and Manufacturer of
Apollo, Skylab and Shuttle Space Suits

Westleyan Company Inc.
1030 N. State St.
Suite 50F
Chicago, IL 60610

ATTN: Mr. Wesley Schneider

Thank you for promptly returning my call. Since November 1985 ILC Dover Inc. has been working for CRDEC, Edgewood, under a multi task contract DAAA15-85-D-0023 "Mask of the 90's".

A recent task "Speech and Drink Improvements" has been authorized. Mr. Corey Grove is the liaison between ILC and CRDEC. He works for John Scavnicky and Dave English.

The basis of this task was Battle Report "Food/Drink/Speech systems for Respiratory Protection" dated June 11, 1985.

ILC Dover, since contract inception, has submitted a dual Hose Concept with working models which will be manufactured and submitted to HEL Aberdeen, next year for evaluation.

I received the enclosed statement of need from Corey Grove yesterday which referenced your company. He also gave me your phone number.

The Government can of course buy from you directly but it may be expeditious (if directed by Corey) for ILC Dover to buy from you and incorporate your equipment into our drink evaluations at HEL next year.

I need a brief description of your system and prices for 1 to 5 units which you propose to submit for evaluation. It is not unreasonable to assume that both the dual Hose Concept and your Hand Pump Concept may find a market in the US Army overall requirements.

If you elect to submit descriptive material to ILC please identify the patents or proprietary aspects of your system.

I visualize that our cooperation may be beneficial to your company. Thanks again for promptly returning my call.

Sincerely,

William J. Nissley
Senior Project Engineer

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JA 919