



US006295366B1

(12) **United States Patent**
Haller et al.

(10) **Patent No.:** **US 6,295,366 B1**
(45) **Date of Patent:** **Sep. 25, 2001**

(54) **AIRCRAFT HEADSET**

5,862,241 * 1/1999 Nelson 381/371
5,970,160 * 10/1999 Nilsson et al. 381/370

(75) Inventors: **Larry D. Haller**, Hillsboro; **Charles E. Inmon**, Lake Oswego; **Christopher J. Jensen**, Hillsboro; **James D. Pileggi**, Beaverton; **Brian Vanderploeg**, Lake Oswego; **Stevan L. Wittenbrock**, Portland, all of OR (US)

OTHER PUBLICATIONS

New Headphone For Every Head, Nov. 1980.*
Only Sony Offers the Most Advanced Headsets for Every Mindset, Nov. 1980.*

* cited by examiner

(73) Assignee: **Flightcom Corporation**, Portland, OR (US)

Primary Examiner—Curtis Kuntz
Assistant Examiner—Suhan Ni
(74) *Attorney, Agent, or Firm*—Robert D. Varitz, PC

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(57) **ABSTRACT**

An aircraft headset includes a headset band, including a head element and a pair of ear cup supports slidably received in the head element, ear cups pivotally attached at one end of each ear cup support; and a microphone boom pivotally attached to one of the ear cups; an improved ear cup tensioning mechanism including a tongue extending laterally from each end of the headset band and a conformal tongue receiver located adjacent the other end of each ear cup support; wherein the tongue receiver is conformal with the tongue, and wherein the tongue and the tongue receiver are constructed and arranged to provide near-constant lateral pressure between the ear cups and a wearer's head. An improved ear cup seal includes an outer seal covering formed of urethane-coated expanded vinyl; an inner flexible layer formed of scythed urethane foam; wherein the inner flexible layer has a memory which returns the ear seal to its original configuration when pressure is released therefrom, and wherein the ear cup seal has a variable configuration having its thickest region behind and below a wearer's ear, along the wearer's neck, and having its thinnest region adjacent the front of the wearer's ear along the jaw line. An improved microphone housing includes a hard outer shell having a cavity therein; and sound-absorbing material located inside the outer shell which enclose the microphone element.

(21) Appl. No.: **09/275,513**

(22) Filed: **Mar. 24, 1999**

(51) **Int. Cl.**⁷ **H04R 25/00**

(52) **U.S. Cl.** **381/374; 381/370; 381/371; 381/375; 381/376; 381/378; 381/379; 379/430**

(58) **Field of Search** 381/370, 371, 381/372, 375, 376, 377, 378, 379, FOR 149, FOR 150; 181/128, 129, 137; 379/430; 455/90

(56) **References Cited**

U.S. PATENT DOCUMENTS

D. 322,440	12/1991	Urella .	
D. 377,174	1/1997	Runquist .	
2,603,724	* 7/1952	Kettler	381/372
4,571,746	* 2/1986	Gorike	381/370
4,922,542	5/1990	Sapiejewski .	
4,975,966	12/1990	Sapiejewski .	
4,987,592	* 1/1991	Flagg	381/375
4,989,271	2/1991	Sapiejewski et al. .	
5,095,382	* 3/1992	Abe	381/378
5,185,807	* 2/1993	Bergin et al.	381/374
5,708,725	* 1/1998	Ito	381/370
5,793,878	* 8/1998	Chang	381/370

8 Claims, 5 Drawing Sheets

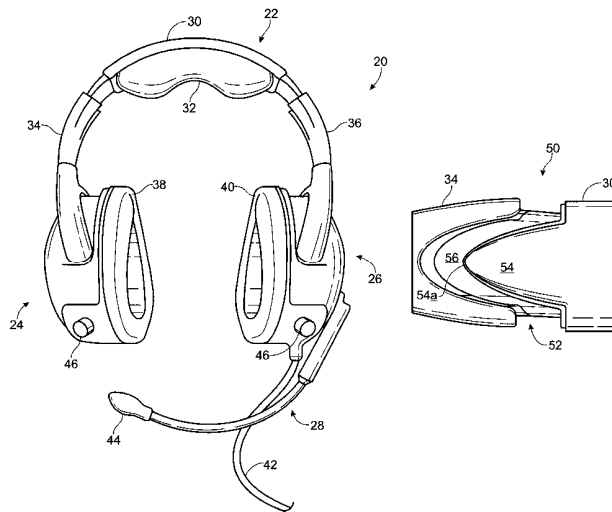


Fig. 1

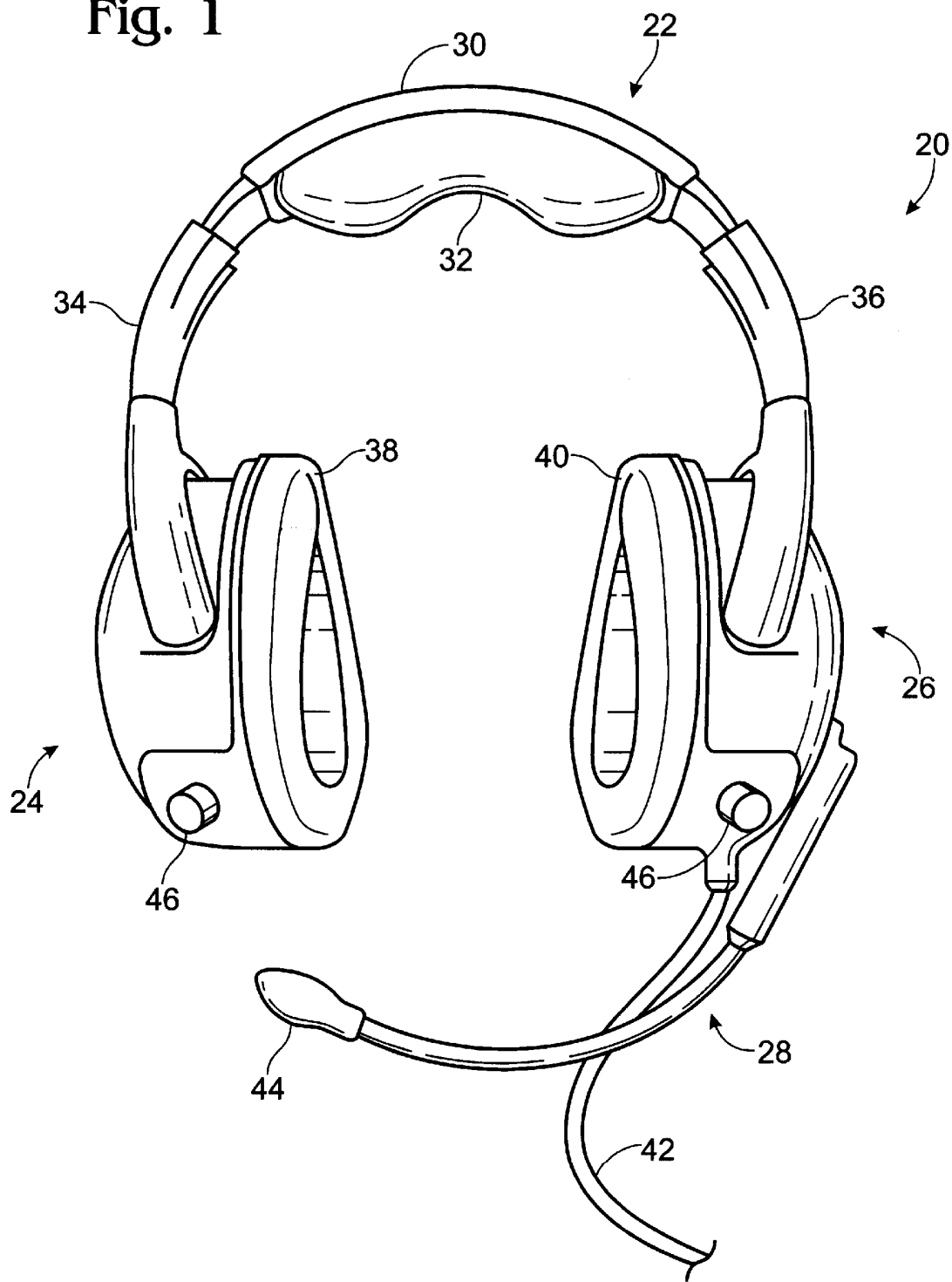


Fig. 2

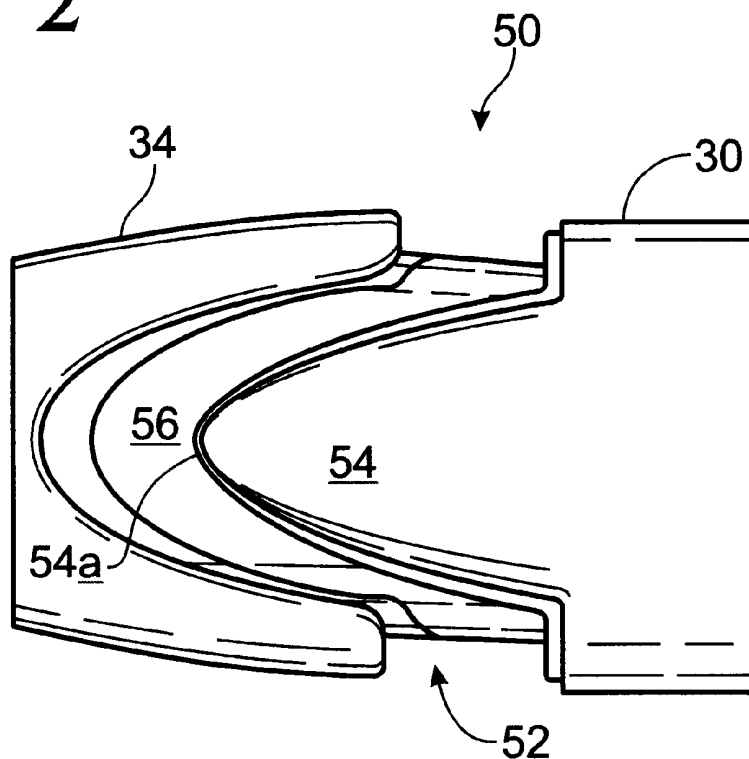


Fig. 3

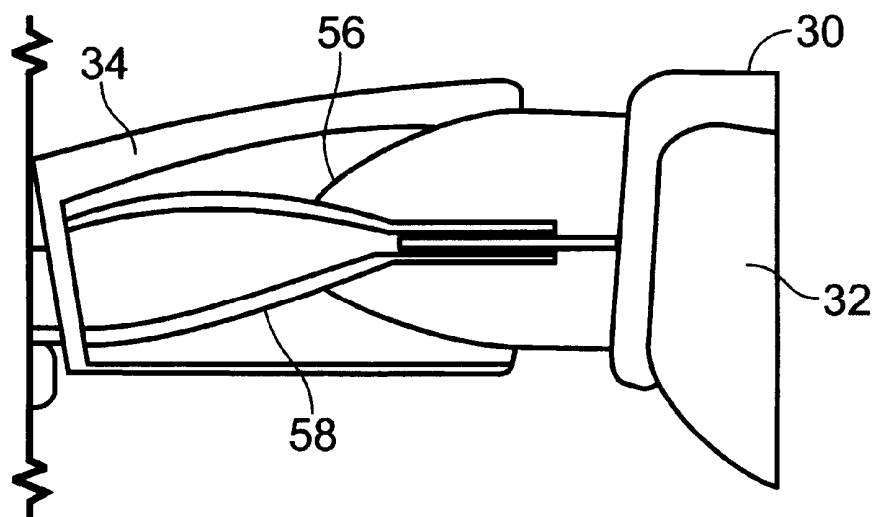


Fig. 4

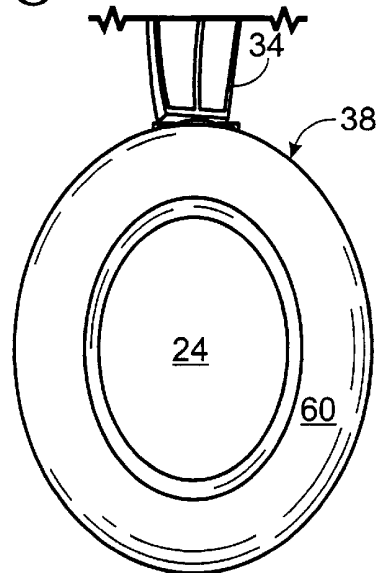


Fig. 5

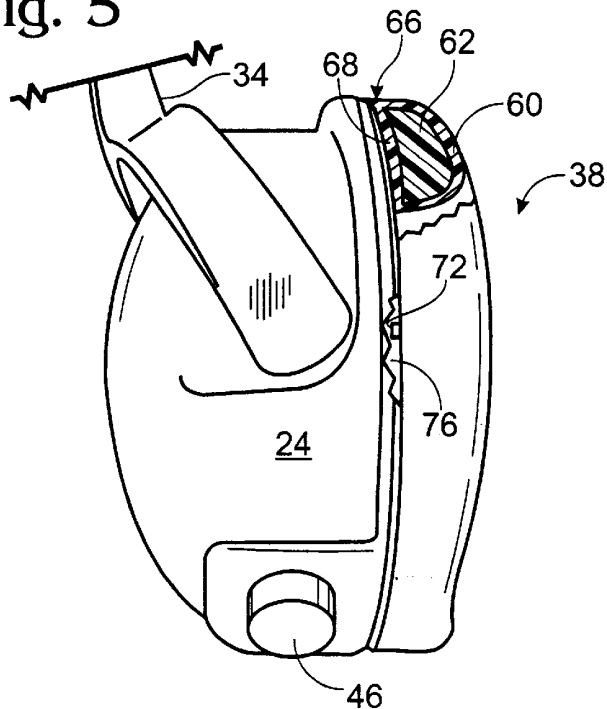


Fig. 6

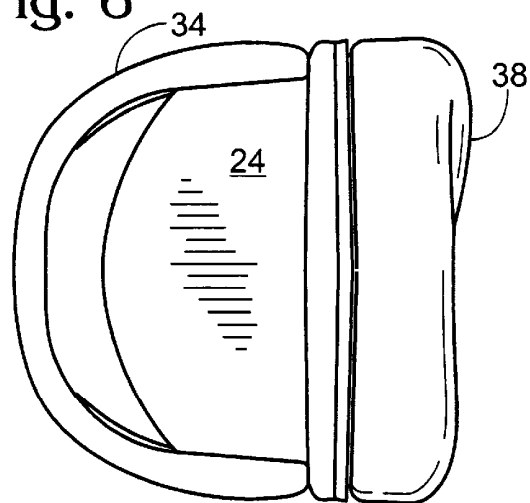


Fig. 7

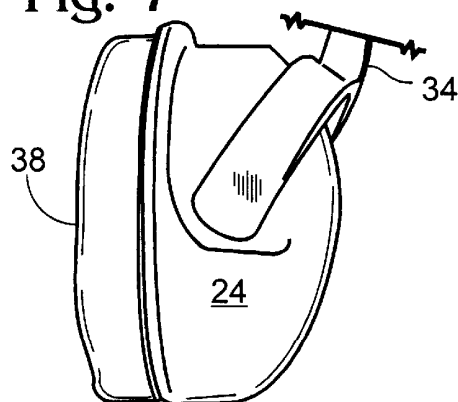


Fig. 8

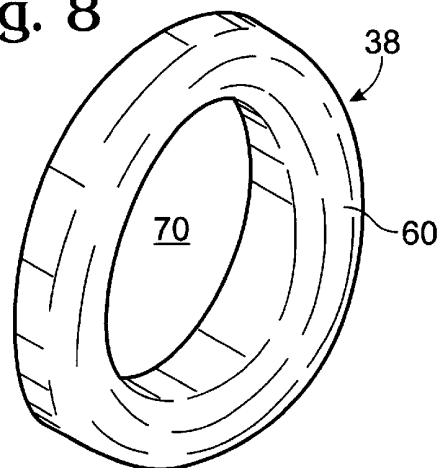


Fig. 10

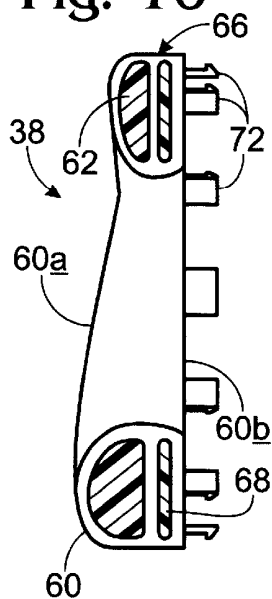


Fig. 9

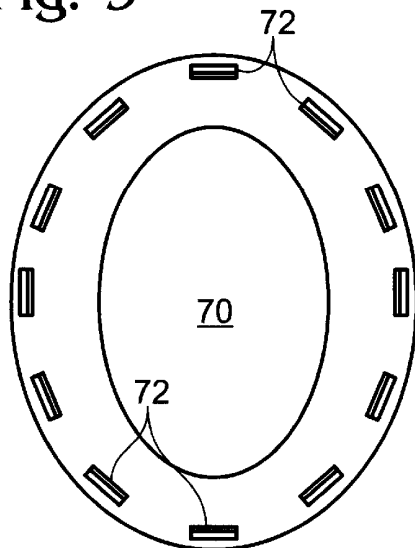


Fig. 11

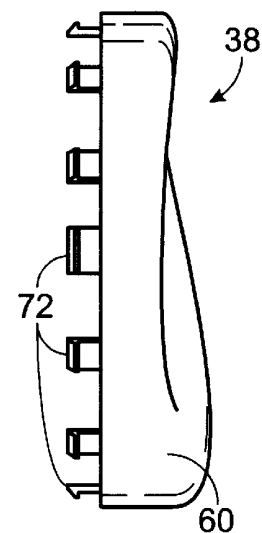
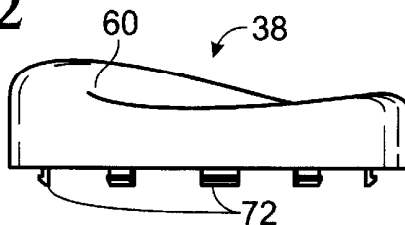


Fig. 12



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.