

US008401219B2

(12) United States Patent

Hankey et al.

(54) HEADSET CONNECTOR

- (75) Inventors: M. Evans Hankey, San Francisco, CA (US); Emery Sanford, San Francisco, CA (US); Christopher D Prest, Mountain View, CA (US); Way Chet Lim, San Jose, CA (US)
- (73) Assignee: Apple Inc., Cupertino, CA (US)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1455 days.
- (21) Appl. No.: 11/824,444
- (22) Filed: Jun. 28, 2007

(65) **Prior Publication Data**

US 2008/0165982 A1 Jul. 10, 2008

Related U.S. Application Data

- (60) Provisional application No. 60/879,177, filed on Jan. 6, 2007, provisional application No. 60/879,195, filed on Jan. 6, 2007.
- (51) Int. Cl.
- *H04R 25/00* (2006.01)
- 381/74, 370–371, 374, 376, 378–380, 382, 381/384

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,464,509	B1	10/2002	Emberty et al.
7,094,086	B2	8/2006	Teicher
7,311,526	B2	12/2007	Rohrbach et al.
7,351,066	B2	4/2008	DiFonzo et al.
7,496,671	B2	2/2009	Engel et al.
7,517,222	B2	4/2009	Rohrbach et al.

(10) Patent No.: US 8,401,219 B2

(45) **Date of Patent:** Mar. 19, 2013

7,589,536	B2	9/2009	Terlizzi et al.
7,641,477	B2	1/2010	DiFonzo et al.
7,645,143	B2	1/2010	Rohrbach et al.
2004/0023560	A1	2/2004	Swoboda
2004/0209489	A1	10/2004	Clapper
2005/0239261	A1	10/2005	Tai et al.
2008/0024470	A1	1/2008	Andre et al.
2008/0084404	A1	4/2008	Andre et al.
2008/0163663	A1	7/2008	Hankey et al.
2008/0164770	A1	7/2008	Terlizzi
2008/0164825	A1	7/2008	Terlizzi et al.
2008/0164934	A1	7/2008	Hankey et al.
2008/0166001	A1	7/2008	Hankey et al.
2008/0166004	A1	7/2008	Sanford et al.
2008/0166005	A1	7/2008	Terlizzi et al.
2008/0166006	A1	7/2008	Hankey et al.
2008/0166007	A1	7/2008	Hankey et al.
2008/0166907	A1	7/2008	Sanford et al.
2008/0166968	A1	7/2008	Tang et al.
2008/0167088	A1	7/2008	Rabu et al.
2008/0319562	A1	12/2008	Forstall
2009/0267613	A1	10/2009	Terlizzi et al.

FOREIGN PATENT DOCUMENTS

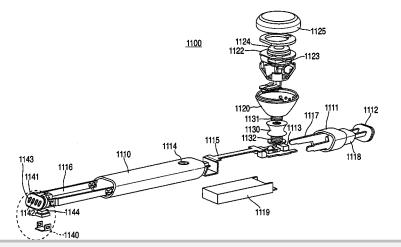
DE	10333403 A1	9/2004
DE	202004012084 U1	11/2004
WO	03090321 A1	10/2003
WO	2006126881 A2	11/2006

Primary Examiner — Hoa B Trinh (74) Attorney, Agent, or Firm — Dorsey & Whitney LLP

(57) ABSTRACT

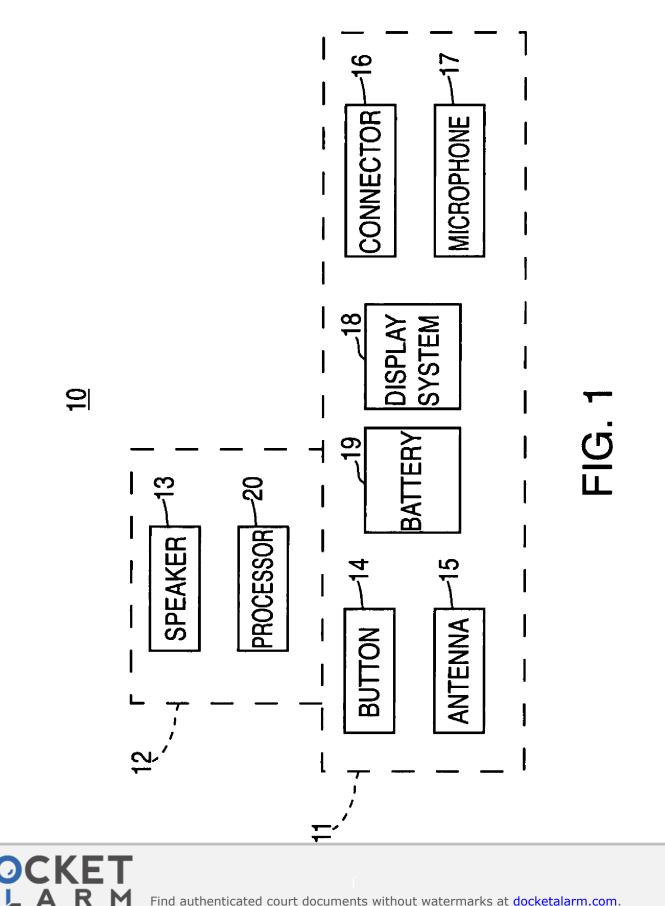
Headset assemblies and headset connectors are provided. Headset connectors can include a magnetic mating face and a plurality of electrical contacts disposed within the mating face. Engaging assemblies and engaging connectors are also provided. The engaging connectors can include a housing having a mating side, a magnetic array structure, and a plurality of spring biased contact members. The magnetic array structure can be fixed within the housing and house a plurality of spring biased contact members. The spring biased contact members can include tips that extend out of the mating side. The tips can electrically couple with electrical contacts in a headset connector.

38 Claims, 60 Drawing Sheets



R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

Α



М Find authenticated court documents without watermarks at docketalarm.com.

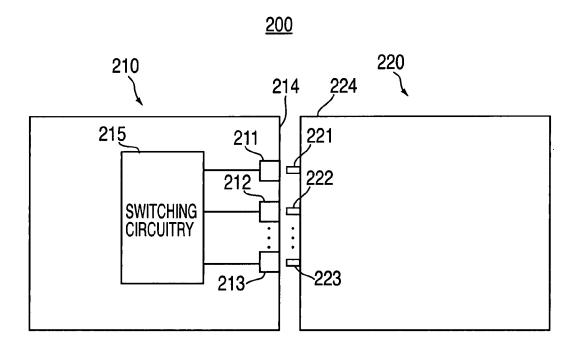


FIG. 2

DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

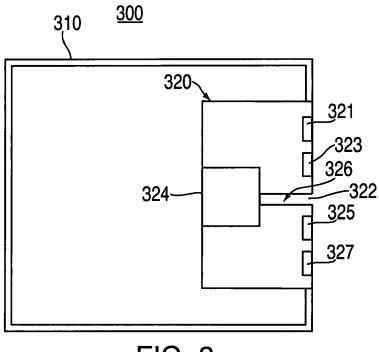
DOCKET

A

R

M

Α





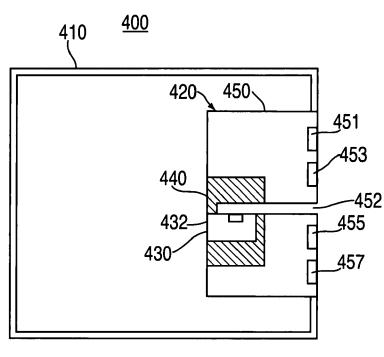
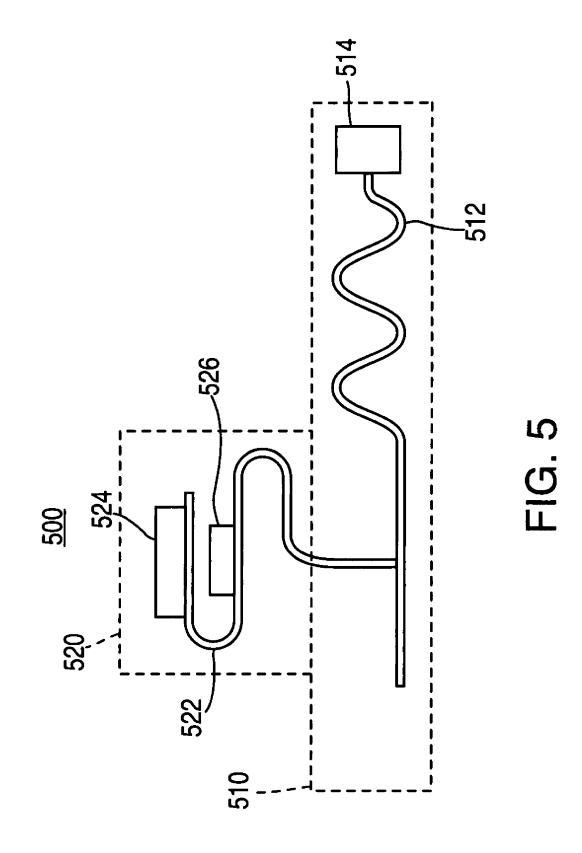


FIG. 4

Find authenticated court documents without watermarks at docketalarm.com.



DOCKET A L A R M



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.