Antenna with Shaped Dielectric Loading

Presented by
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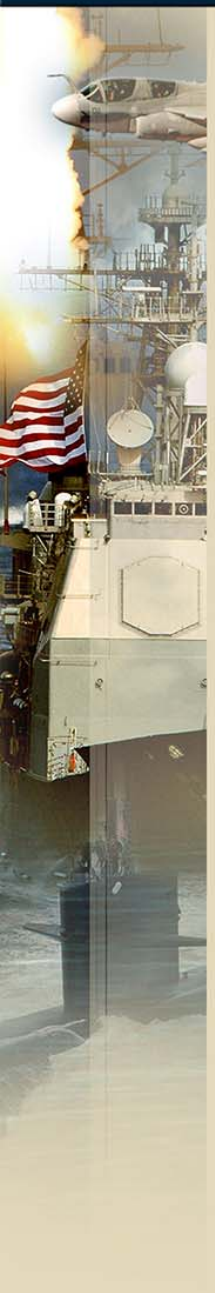
Inventors: Jeff Snow

US Patent Application No. 11/821,475

Technology Description



- **What is it:**

  A structure or portions of antenna structures used to shape emitted electromagnetic wave patterns. Invention includes the methods of manufacturing and use.

- **Status:**

  Technology concept formulated, principles observed, practical applications can be invented relatively easily.

- **What makes it special?**

  - Addresses range and direction of transmission in reference to high frequency transmission.

  - Modeling suggests an increase of twice the power (3dB) at higher frequencies

Technology Description

- **Why did you invent it?**

  There is a need to increase control and minimize frequency interference while used for military applications.

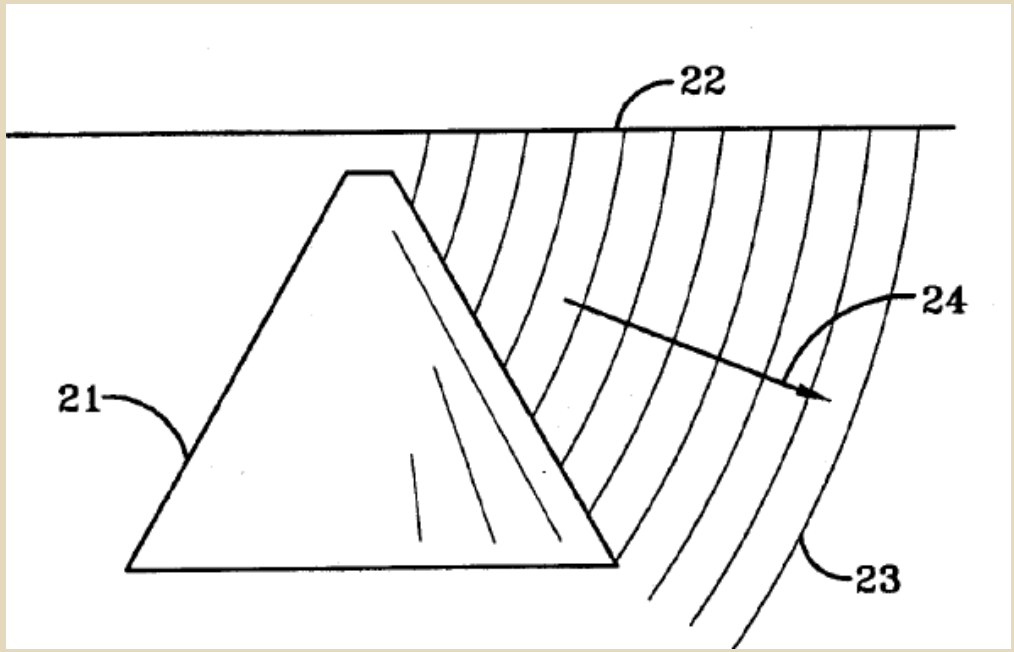
- **What are its limitations?**

  Greater weight due to dielectric

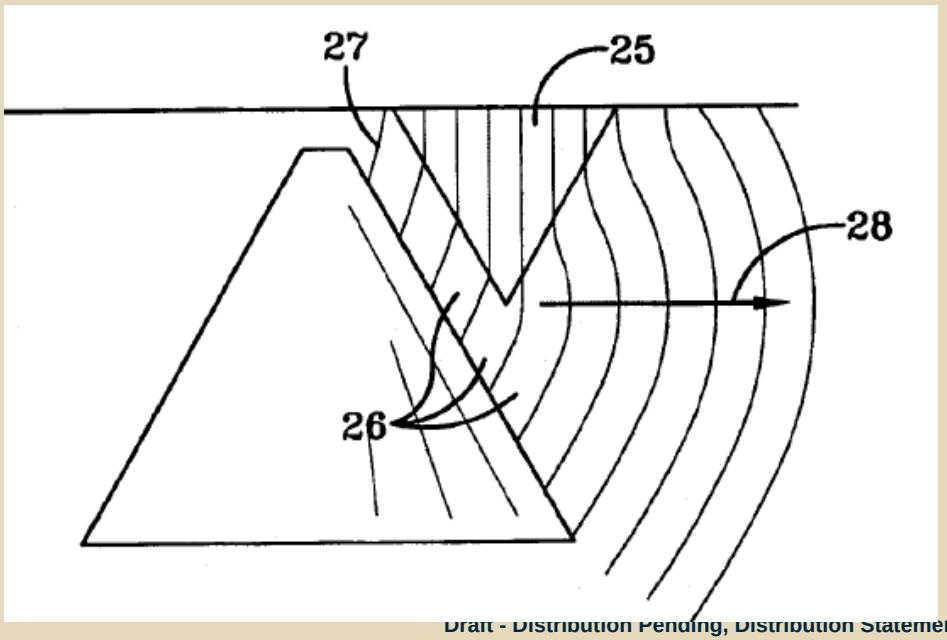
- **What are the main components?**

  Passive structure that are applied to existing antennas.

How It Works

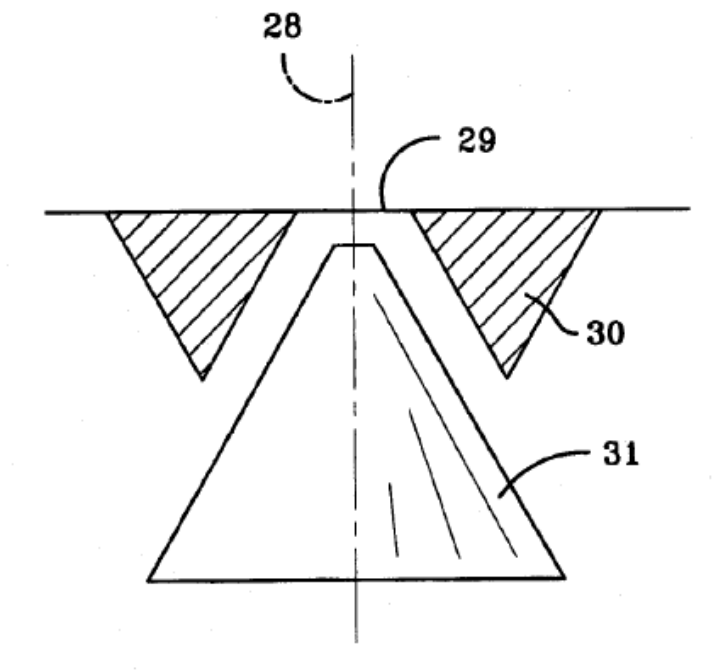


Without dielectric loading

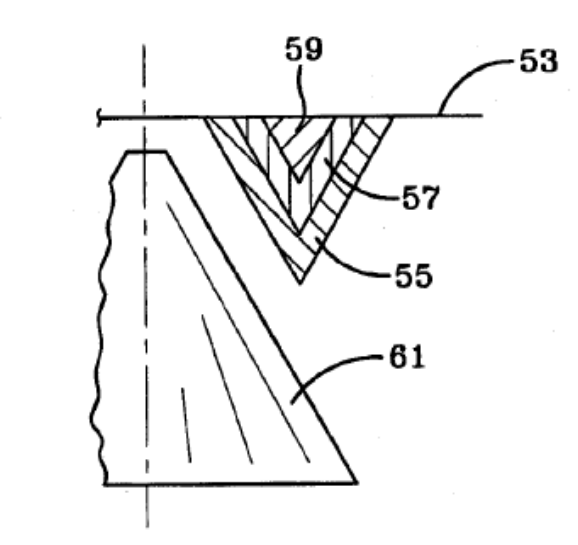


With dielectric loading

Drawings

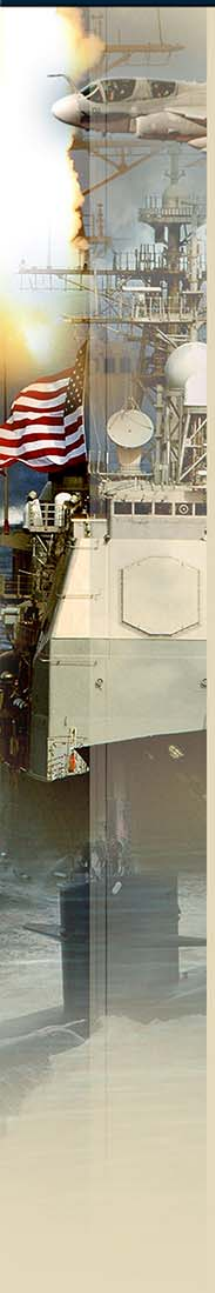


Disc-cone with dielectric



Disc-cone with different dielectrics

COMMERCIAL APPLICATIONS



- **Who would use it?**

  Communication, networking and defense markets; potential targets:

  - Wi-Fi data communication

  - Microwave Radio relay towers

  - Surveillance/Scanning: 1st responders, Homeland Security, other government agencies, and private use

- **Why would they want it?**

  Inexpensive way to increase the quality of transmission while using existing technologies (antennas).