

Patent Abstracts

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4,546,334

Oct. 8, 1985 4,547,754

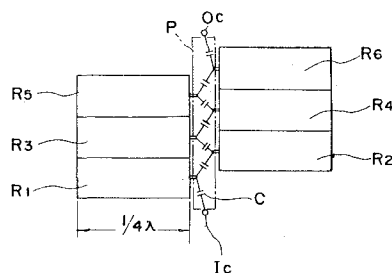
Oct. 15, 1985

Electrical Filter Device

Inventors: Toshio Nishikawa, Youhei Ishikawa, and Tadahiro Yorita.
Assignee: Murata Manufacturing Co., Ltd.
Filed: Apr. 21, 1983.

Abstract—An improved electrical filter device in which cutoff spaces required in a casing of the electrical filter device are still further reduced than in conventional arrangements, and which is free from unnecessary coupling and capable of being constructed entirely by capacitor coupling for compact size.

8 Claims, 26 Drawing Figures



4,547,753

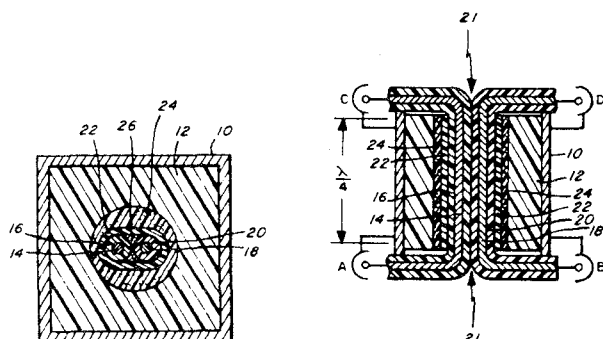
Oct. 15, 1985

Microwave Coupler

Inventor: Harry F. Chapell.
Assignee: Sage Laboratories, Inc.
Filed: Nov. 14, 1983.

Abstract—A microwave coupled line device constructed to equalize even and odd mode delay and comprising an outer conductor and first and second inner conductors at least one of which has insulation bonded thereto and separated by the thickness of said insulation therebetween. There is also provided an insulating sleeve disposed in the outer conductor and adapted to accommodate the first and second inner conductors. Means are provided for filling the void between the insulating sleeve and the outer conductor with an insulating material.

15 Claims, 4 Drawing Figures

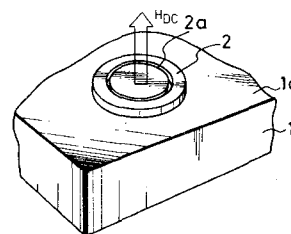


Ferromagnetic Resonator

Inventors: Yoshikazu Murakami and Hiromi Yamada.
Assignee: Sony Corporation.
Filed: Dec. 5, 1983.

Abstract—A ferromagnetic resonator employing a disk of ferrimagnetic material is disclosed. The ferromagnetic resonator comprises a disk of ferrimagnetic material such as yttrium iron garnet (YIG) and a magnet applying dc magnetic field perpendicularly to a surface of the disk, and microstrip line applying RF magnetic field to the disk. The disk of ferrimagnetic material is processed to have a groove at a predetermined position on one surface of the disk, or to have a predetermined area in a central portion of the disk with a thickness smaller than that of peripheral portion of the disk, so that spurious response caused by magnetostatic mode other than the uniform mode is suppressed.

8 Claims, 23 Drawing Figures



4,547,755

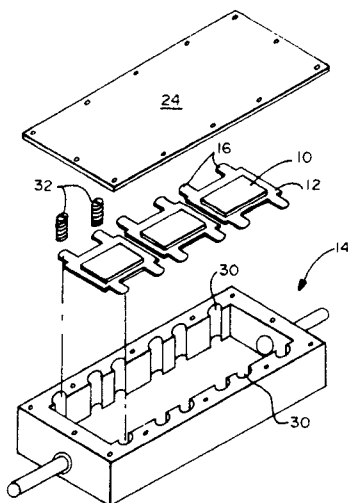
Oct. 15, 1985

Microwave Circuit Structure and Method of Mounting

Inventor: John E. Roberts.
Assignee: Watkins Johnson Company.
Filed: Mar. 27, 1984.

Abstract—A microwave circuit and housing in which the housing cavity is reduced in size by providing threaded slots in side walls of the housing which receive tabs extending from the microwave circuit carriers. Pillars are inserted in the slots for maintaining the carriers in position on the bottom surface of the housing and for filling the slots. Reduced weight, height, and width is achieved with a reduced number of piece parts.

7 Claims, 4 Drawing Figures



4,549,781

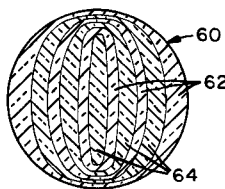
Oct. 29, 1985

Polarization-Retaining Single-Mode Optical Waveguide

Inventors: Venkata A. Bhagavatula and Daniel A. Nolan.
 Assignee: Corning Glass Works.
 Filed: June 1, 1983.

Abstract—Disclosed is an optical fiber for operating single polarization, single-mode at wavelength λ . The fiber core is surrounded by cladding having the refractive index lower than the average refractive index of the core. The core is characterized in that it comprises a plurality of transparent laminae, each having a refractive index different from that of the adjacent laminae. The thickness of each laminae is equal to or less than wavelength λ .

4 Claims, 13 Drawing Figures



4,550,296

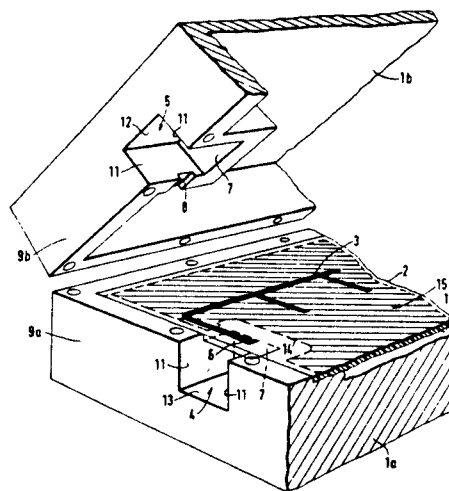
Oct. 29, 1985

Waveguide-Microstrip Transition Arrangement

Inventors: Wolfgang Ehrlinger, Gerhard Hirsch, and Michael Alberty.
 Assignee: ANT Nachrichtentechnik GmbH.
 Filed: May 12, 1983.

Abstract—A waveguide-microstrip transition arrangement including, a waveguide section and a microstrip portion, for coupling waveguide modes between the waveguide section and the microstrip portion. The waveguide section has waveguide walls defining waveguide wall surfaces including a short-circuited end wall surface and side wall surfaces. A channel passes through one of the side walls and presents an opening at the associated wall surface. The microstrip portion includes a substrate having opposite sides with a ground plane disposed on one side of the substrate and a microstrip conductor disposed on the other side of the substrate. The substrate passes through the waveguide section, entering the waveguide section at a location where the wall currents of the waveguide section flowing transversely to the substrate are at a minimum. A portion of the microstrip conductor is disposed on the substrate to pass through the channel into the waveguide section free of contact with the waveguide walls. The substrate has no ground plane in the regions of the interior of the waveguide section and of the plane of separation of the waveguide wall where the substrate is disposed. The ground plane extends into and terminates within the channel.

3 Claims, 1 Drawing Figure



4,550,974

Nov. 5, 1985

Low-Loss Fused Biconical Taper Optic Coupler

Inventor: Kent A. Murphy.
 Assignee: International Telephone and Telegraph Corporation.
 Filed: Apr. 4, 1985.

Abstract—An improved low-loss fused biconical taper fiber optic coupler has a biconical taper region where the fibers are fused together and have a deformed zone at their minimum taper region. The deformation of the fibers is in the shape of a ball.

4 Claims, 6 Drawing Figures



4,551,692

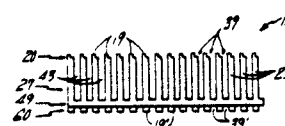
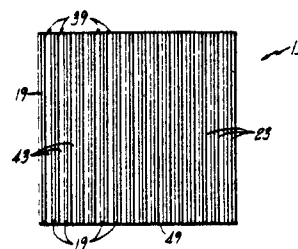
Nov. 5, 1985

Monolithic Polarizer Grating

Inventor: Peter W. Smith.
 Assignee: United Technologies Corporation.
 Filed: Mar. 28, 1984.

Abstract—A dielectric substrate machined into a monolithic polarizer grating including structural support and matching regions, effective for transforming linearly to circularly polarized states of microwave radiation.

3 Claims, 8 Drawing Figures



4,551,693

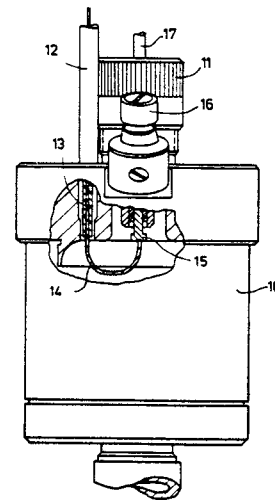
Nov. 5, 1985

Coaxial Microwave Load Isolator of the Three-Plate-Type Including Such a Load and Use of Such an Isolator

Inventor: Jacques Guidevaux.
Assignee: Thomson CSF.
Filed: Nov. 16, 1983.

Abstract—A coaxial microwave load for a ferrite isolator formed by a three-plate three-port-type junction circulator comprising an assembly including by a body of conductive material, a rod of insulating material which is covered with a layer of resistive material, and a washer of insulating material. The assembly is placed in a mounting block of conductive material having an axial bore to receive the assembly and the mounting block is covered with a layer of insulating material whereby the load is electrically insulated.

13 Claims, 4 Drawing Figures



4,551,696

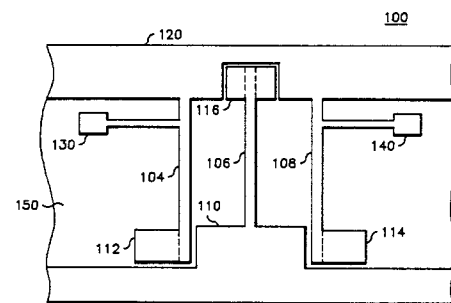
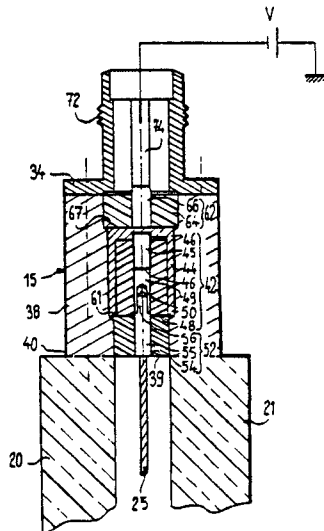
Nov. 5, 1985

Narrow-Bandwidth Microstrip Filter

Inventors: Michael F. Moutrie, Raymond L. Sokola, and Charles Choi.
Assignee: Motorola, Inc.
Filed: Dec. 16, 1983.

Abstract—An interdigital microstrip transmission-line filter (100) includes three electrically conductive strips (104, 106 and 108) each coupled to grounded portions (110 and 120) on one end and coupled to respective capacitive loading pads (112, 116 and 114) on the other end. Input and output pads (130 and 140) may be coupled to signals from other circuitry located off or on the same substrate (150). Grounded portion (110) extends between capacitive loading pads (112 and 114) for minimizing undesired coupling between nonadjacent strips (104 and 108). As a result, the unique microstrip filter (100) has a frequency response that is substantially devoid of passband transmission zeros.

12 Claims, 2 Drawing Figures



4,551,694

Nov. 5, 1985

Coupling Arrangement for a Cavity Resonator

Inventors: Reinhard Biehl, Dieter Schmalbein, and Günther Laukien.
Assignee: Bruker Analytische Messtechnik GmbH.
Filed: Jan. 6, 1984.

Abstract—A coupling arrangement for a cavity resonator (10), in particular for measuring the magnetic resonance of a sample (17) located within the cavity resonator (10) comprises a loop (14) for supplying a radio frequency signal to the cavity resonator (10) and exciting in the latter a specific mode of oscillation. For optimizing the coupling of the radio frequency signal, mechanical means are provided, preferably in the form of an axially adjustable screw (16), which permit the surface of the loop (14) to be varied mechanically, and the loop (14) is capacitively coupled with the resonator housing.

11 Claims, 3 Drawing Figures

4,553,112

Nov. 12, 1985

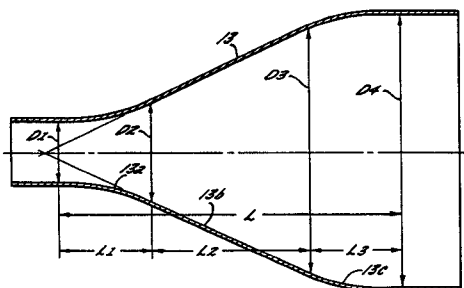
Overmoded Tapered Waveguide Transition Having Phase Shifted Higher Order Mode Cancellation

Inventors: Saad S. Saad and Charles M. Knop.
Assignee: Andrew Corporation.
Filed: May 31, 1983.

Abstract—A phased-overmoded, tapered waveguide transition has a central section which is tapered linearly in the longitudinal direction and two end sections which are tapered curvilinearly in the longitudinal direction. One of

the end sections and at least a portion of the other end section are overmoded and, therefore, give rise to higher order modes of the desired microwave signals propagated therethrough. The linearly tapered central section shifts the phase of higher order modes generated at one end of the transition so that at least a major portion of such higher order modes is cancelled by higher order modes generated at the other end of the transition.

18 Claims, 5 Drawing Figures



4,553,113

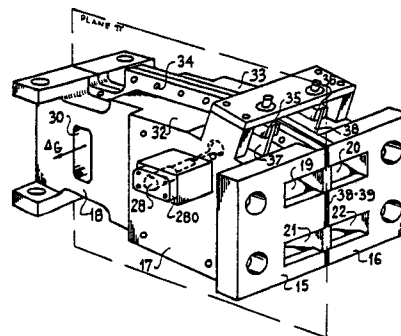
Nov. 12, 1985

Compact Differential Coupler for Monopulse Radar

Inventor: Pierre Blanchard.
Assignee: Thomson CSF.
Filed: Apr. 5, 1982.

Abstract—A compact differential coupler for a monopulse tracking radar constituted by four magic T's and comprising two metal members, which are symmetrical with respect to a plane π and machined in such a way that their assembly by a set of screws constitutes the four T's, two of which are bent branch T's, a third a coaxial load T, and the fourth a fork-type T.

8 Claims, 5 Drawing Figures



4,553,114

Nov. 12, 1985

Encapsulated Printed Circuit Board Filter

Inventors: James M. English, Nicholas L. Gurreri, and John P. Kling.
Assignee: AMP Incorporated.
Filed: Aug. 29, 1983.

Abstract—A RF-EMI filter for circuit boards is formed by a through pin terminal having a filter sleeve mounted thereon and a ground pin with an eyelet portion formed about the filter sleeve with a leg depending normal to the axis of the sleeve. The ends of the through pin are formed parallel to each other and to the ground pin leg. The filter sleeve, and its immediate environment, are encapsulated in an insulative material. The thus-formed three legged filter can be applied to a circuit board along with the other components to be fixed thereto.

8 Claims, 6 Drawing Figures

