GROOVE GUIDE AND H-GUIDE: SUPPLEMENTARY INFORMATION

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Received March 2, 1984

Interest in groove guide and H-guide for application at millimeter waves is considerable at present. Hitherto unpublished material dealing with these waveguides is presented. The early history, patent applications, drawings and prototypes are described.

Key words: Millimeter waves, waveguides, groove guide, H-guide.

Introduction

Groove guide and H-guide have recently attracted considerable attention as means for the guided transmission of millimeter waves. In some applications they have advantageous properties in comparison with other waveguiding media such as rectangular guide, stripline, slotline and dielectric guide. It is regrettable that the general knowledge is often incomplete and in some respect incorrect.

Misunderstandings occasionally arise concerning the origin of ideas, the original source of discoveries in physics and other natural sciences and similarly with regard to inventions in engineering. It is not uncommon to find for
instance that a fundamental discovery in physics is ascribed to a particular person and, if formulated as a law, named after him while actually the man who made it first was somebody else. Reasons for such misunderstandings are many. An example is the following situation: One person makes a basic observation but omits publicizing this event. Somebody else makes the same observation later but discloses it to his associates and others by writing an article about it in a professional journal. Obviously the second person will be designated, though wrongly, as the original discoverer.

In engineering assigning credit for inventions is clearly established by patents which give the inventors the sole rights of financially exploiting their disclosed ideas. The fact that patents are frequently contested in courts, however, indicates that also under the well-formulated procedures of patent law the determination of the originator of an idea may be subject to error.

It is interesting that our publication system and its customs actually contribute to the aforementioned misunderstandings. This is caused by the practice of including in the references of articles primarily those papers which are published in professional journals and official conference record. Other kinds of disclosures such as unrecorded presentations at conferences, internal progress reports of corporations and academic organizations, professional diaries, letters, patent applications, shop drawings, etc. are very rarely found in the bibliographies of our professional literature. The reason for this omission is that they are the kind of papers that are difficult for readers to obtain.

**Groove and H-Guide**

A case which illustrates the above-mentioned situation was the invention and early development of the groove guide, a waveguide well-suited for application at millimeter wavelength.