

DECISION OF THE COMMISSIONER

OBVIOUS: In view of teaching of several citations.

Held that the experience shown by the citations is properly to be considered as teaching that thin-walled elliptic flexible tubing could meet the requirements of waveguides; and the process of fabrication is shown in the prior art. No consideration was given to product claims made in response to the Final Action.

FINAL ACTION: Affirmed.

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IN THE MATTER OF a request for a review by the Commissioner of Patents of the Examiner's Final Action under Section 46 of the Patent Rules.

AND

IN THE MATTER OF a patent application serial number 002,722 filed October 17, 1967 for an invention entitled:

ELLIPTIC WAVEGUIDE AND METHOD OF FABRICATING IT

Agent for Applicant

Messrs. Smart & Biggar,  
Ottawa, Ontario.

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This decision deals with a request for review by the Commissioner of Patents of the Examiner's Final Action dated October 19, 1970 on application 002,722. This application was filed in the name of Tsutomu Maeda and refers to "Elliptic Waveguide And Method of Fabricating It". The Patent Appeal Board conducted a hearing on September 14, 1971. Mr. R. Barrigar represented the applicant.

In the prosecution terminated by the Final Action the examiner refused the claims as failing to patentably distinguish over the patent to Sturm et al - 437,752, Nov. 5, 1946.

In the Final Action the examiner stated:

The rejection of the claims as failing to patentably distinguish over the patent to Sturm et al is maintained. In the said patent is disclosed a method of forming tubing of certain geometric shape from tubing

of another geometric shape including forming an elliptical-shaped tube from generally circular-shaped stock. The steps of forming the initial round tubular stock by extrusion and the corrugation of the extruded tube are held to be common knowledge.

There is no invention in making an elliptical-shaped tube from circular-shaped stock by using conventional methods of tube forming as exemplified by the cited patent. In the above letter applicant contends that two articles of substantially similar construction but each having a particularly useful and unobvious advantage with respect to their use are patentable. This may be so. But if such articles can be made by substantially the same method, then such methods of manufacture are not patentably distinguishable one from the other. It is maintained therefore that the preamble in the claims namely "a method of fabricating an elliptical waveguide for electrical apparatus", identifying the use of the end product, does not impart patentability to a conventional method of making elliptical tubing as disclosed in the cited patent.

In the response, dated April 13, 1971 the applicant stated:

Canadian Patent No. 773,254 cited as a reference of interest, discloses and claims a smooth elliptical shape waveguide which is asymmetrical about its major axis (see page 3 lines 21 and 22; page 3 lines 32 to page 4, line 1). The independent product claims 12 and 16 of the present application clearly recite that the walls of the waveguide are substantially symmetrical about both the major and minor axes of the cross-section of the waveguide. As a result, the applicant submits that the "product" claims of the present application are clearly distinguishable from Canadian Patent No. 773,254.

In contrast to the former method claims, new method claim 1 specifically recites a method of fabricating a jointless, seamless oval waveguide having continuously smooth interior and exterior walls. New method claim 7 recites, as a further step the winding of the oval waveguide on a drum for transporting the waveguide from the factory to the installation site. The method claim 8 recites the additional step of re-extruding the waveguide to remove any deformations in cross-sectional shape upon unwinding the waveguide from the transporting drum prior to installation. New method claims 1 to 8 inclusive, in a most exacting manner, claim the steps of fabrication used to make the new and

useful waveguide described in the text of the disclosure and claimed in claims 9 to 18 inclusive.

An argument has been made that the method of extruding tubing for waveguide is old for other tubular products and therefore unpatentable as applied to waveguide. The applicant admits that it is known to extrude tubing used for the transportation of water and gas and the like, but submits that this field of manufacture is totally removed from the field of manufacturing waveguide and cable used to transmit electro-magnetic radiation. (The relevant principles of law are discussed in applicant's response to the previous Official Action.) Enclosed is an affidavit by Professor Torahiki Sugiura of Osaka Institute of Technology. Professor Sugiura's affidavit differentiates the art of manufacturing devices including waveguides from the art of manufacturing common extruded tubing. His affidavit also recites methods of constructing waveguides previously available to manufacturers, and shows that the present methods are new and useful and produce an improved flexible seamless waveguide which can be fabricated in very long lengths, heretofore not possible in the art of waveguide manufacture.

After reviewing the grounds for rejection set forth by the examiner, as well as the argument both written and oral set forth by the applicant, I am satisfied that the rejection is well founded.

At the hearing the Patent Agent reviewed the stand of the applicant and stressed the point that in his opinion the subject matter as claimed was in fact an improvement in the art and therefore a patent should be granted.

The application is directed to an improved method of continuously fabricating a waveguide. Claim 1 reads as follows:

A method of fabricating an elliptical or approximate elliptical waveguide for electrical apparatus comprising the steps continuously extruding metal tubing having a generally round cross-section and of a selected inner circumferential length and then continuously drawing said extruded tube through an elliptical or approximate elliptical die to form a completed waveguide having elliptical or approximate elliptical configuration.

It is obvious that the method of changing the shape of a metal tube of generally round cross-section to an ellipse-like cross-section is taught by the reference to Sturm which shows a forming die adapted to progressively change the cross-section from one geometric shape to another, such as, changing

a round tube to an ellipse or an ellipse-like shape. It is obviously jointless, seamless, may well be smooth walled and flexible according to the requirements depending on the form of the original tube; the nature of the materials of which it is made and might well be a waveguide tubing.

The reference to Krank, patent 772,283 with a priority date of 1963, on page 1 states that: "It is known to use waveguides with differing cross-sectional shapes ...", and that: "Smooth waveguides of oval cross-section are also known." (words added).

Another reference to Krank, patent 696,089 dated October 13, 1964 on page 1 states that: "The use of elliptical waveguides for electromagnetic waves is well known ...", and that: "It is also known that elliptical waveguides with slightly smooth walls and too slight an eccentricity ... approach the behaviour of a circular waveguide."

Applicant submits that: "This invention is based upon a discovery that a waveguide having an elliptic cross-section has an advantage, on the contrary to commonly used rectangular and circular waveguides ...". The Krank references teach that waveguides having an elliptical cross-section with smooth walls are known.

Applicant also maintains that the field of manufacturing waveguides is totally removed from the field of extruded tubing, cable sheathing etc. However, page 1 of the Krank patent (696,089) states that: "Experience gained with corrugated tubes and bellows-type tubes as cable sheaths, leads to the expectation that a corrugated tube or bellows-type tube of elliptical cross-section would meet the mechanical requirements of a waveguide, at least under certain conditions." Here, the inventor obviously considered the teachings of the cable sheath art had something in common with the waveguide art. With this in mind I note that the reference to Williamson discloses a method for the manufacture of cable sheath: a jointless, seamless, thin walled tubing of very long length, which may be wound on a drum and reshaped at the work site. I find that the experience disclosed in the above citations are properly to be considered as teachings in the use of thin walled flexible tubing with the expectation that it could meet the requirements of a waveguide.

Applicant has advanced the argument that a new product produced by a conventional method imparts patentability to the method. First it has not been established that the product is new and furthermore I find such a generalization is not in accord with the statutory requirements of novelty. It is well established that a patent cannot be granted for a new use of an old process unless there be some novelty or invention in

the adaptation of the old process to the new use, or the overcoming of some difficulty which lay in the way of such application. I am satisfied that the mere reference to a waveguide in the claim does not impart novelty to the process, as the process, with the same ingredients, does exactly what it has done before in the forming of tubing.

The inclusion of product claims in response to the "Final Action" under Rule 46 cannot be accepted since these claims are not related to the matter under rejection by the examiner, being in part new claims which have not been examined. The revised method claims, which merely add additional characteristics to the end product of the process, do not introduce novelty to the process for the reason set forth.

I note that the affidavit of Professor Sugiura differentiates the art of manufacturing devices including waveguides from the art of manufacturing common extruded tubing. However, as noted above, the Krank reference used the experience gained from the manufacture of tubing to lead to the expectation of what would meet the mechanical requirement of a waveguide.

I am satisfied that the particular idea may be meritorious, but I fail to see that it merits the distinction of invention or claim to a patent monopoly. Therefore, I recommend that the decision of the examiner, to refuse the claims as failing to patentably distinguish over the cited references, be upheld. Also, that the revised method claims be refused on the same grounds as the claims under rejection and, as indicated above, no consideration was given to the product claims for the reasons set forth.

R. E. Thomas,  
Chairman, Patent Appeal Board.

I concur with the findings of the Patent Appeal Board and refuse all the method claims. The applicant has six months to appeal this decision in accordance with Section 44 of the Patent Act.

Decision accordingly,

A. M. Laidlaw,  
Commissioner of Patents.

Dated at Ottawa, Ontario,  
this 27th day of November, 1971.