

# PAT FLANAGAN

## High Security Speech Scrambler

Pat Flanagan has developed a number of super-secret scramblers. The last patent applied for was placed under Top Secret Orders for several years, but has finally issued. Entitled, "Method and System for Simplifying Speech Waveforms," the patent describes a system of encoding speech into a digital form that could be used in many ways, including super-secret communications.

EMD:bmp



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APR 29 1968  
SEC. GROUP  
LICENSING & REVIEW

Serial No. 756,124 Filed Aug. 29, 1968  
Applicant Gillis P. Flanagan  
Title METHOD AND SYSTEM FOR SIMPLIFYING SPEECH WAVEFORMS

SECURITY ORDER

(Title 35, United States Code (1952), sections 181-188)

NOTICE: To the applicant above named, his heirs, and any and all his assignees, attorneys and agents, hereinafter designated principals.

You are hereby notified that your application as above identified has been found to contain subject matter, the unauthorized disclosure of which might be detrimental to the national security, and you are ordered in no wise to publish or disclose the invention or any material information with respect thereto, including hitherto unpublished details of the subject matter of said application, in any way to any person not cognizant of the invention prior to the date of the order, including any employee of the principals, but to keep the same secret except by written consent first obtained of the Commissioner of Patents, under the penalties of 35 U.S.C. (1952) 182, 186.

Any other application already filed or hereafter filed which contains any significant part of the subject matter of the above identified application falls within the scope of this order. If such other application does not stand under a secrecy order, it and the common subject matter should be brought to the attention of the Security Group, Licensing and Review, Patent Office.

If, prior to the issuance of the secrecy order, any significant part of the subject matter has been revealed to any person, the principals shall promptly inform such person of the secrecy order and the penalties for improper disclosure. However, if such part of the subject matter was disclosed to any person in a foreign country or foreign national in the U.S., the principals shall not inform such person of the secrecy order, but instead shall promptly furnish to the Commissioner of Patents the following information to the extent not already furnished: date of disclosure; name and address of the discloser; identification of such part; and any authorization by a U.S. Government agency to export such part. If the subject matter is included in any foreign patent application, or patent this should be identified. The principals shall comply with any related instructions of the Commissioner.

This order should not be construed in any way to mean that the Government has adopted or contemplates adoption of the alleged invention disclosed in this application; nor is it any indication of the value of such invention.

EDWIN L. REYNOLDS

First Assistant Commissioner



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B-1287.

Paper No. 8

Mailed

In Reply Please Refer To The Following:		
EXAMINER'S NAME J. G. Baxter		
222	Aug. 29, 1968	756,124
GR. ART UNIT	FILING DATE	SERIAL NO.
Gillis P. Flanagan		
APPLICANT		INVENTION
METHOD AND SYSTEM FOR SIMPLIFYING SPEECH WAVEFORMS		

RECEIVED

JAN 11 1971

Richards, Harris & Hubbard

Richards, Harris & Hubbard  
2420 Republic National Bank Tower  
Dallas, Texas 75201

This is a communication from the Examiner  
in charge of your application.

Commissioner of Patents

NOTICE OF ALLOWABILITY (FORM D-10)

This application is now in condition for allowance, and the prosecution is closed. However, in view of the secrecy order issued April 25, 1969, under 35 U.S.C. (1952) 181, this application will be withheld from issue during such period as the national interest requires.

The allowable claims are: 1-19.

Docket Card

Wrapper  Agenda

References

Copies to:

JGBaxter/cc  
Area Code 703  
557-2897

12-24-70

THIS CORRESPONDENCE IS UNCLASSIFIED  
THE APPLICATION CLASSIFICATION  
REMAINS UNCHANGED.

EXAMINER

RODNEY D. BENNETT, JR.

EMD: bmp



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This order should not be construed in any way to mean that the Government has adopted or contemplates adoption of the alleged invention disclosed in this application; nor is it any indication of the value of such invention.

EDWIN L. REYNOLDS

First Assistant Commissioner

# United States Patent

Flanagan

[15] 3,647,970

[45] Mar. 7, 1972

[54] **METHOD AND SYSTEM FOR SIMPLIFYING SPEECH WAVEFORMS**

[72] Inventor: Gillis P. Flanagan, 5207 Mimosa, Bellaire, Tex. 77401

[22] Filed: Aug. 29, 1968

[21] Appl. No.: 756,124

[52] U.S. Cl. ....179/1.5, 179/1.5 M, 179/1.5 E, 325/32, 328/31

[51] Int. Cl. ....H04k 1/00

[58] Field of Search .....179/1.5 MS, 1.5 E, 15.55, 1 AS; 340/15.5 FC; 328/31; 307/237

[56] **References Cited**

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2,979,611 4/1961 Halina .....179/15.55

Primary Examiner—Rodney D. Bennett, Jr.

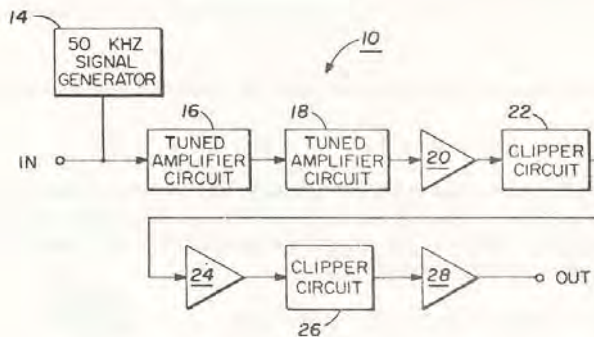
Assistant Examiner—H. A. Birmiel

Attorney—Richards, Harris & Hubbard

[57] **ABSTRACT**

A speech waveform is converted to a constant amplitude square wave in which the transitions between the amplitude extremes are spaced so as to carry the speech information. The system includes a pair of tuned amplifier circuits which act as high-pass filters having a 6 decibel per octave slope from 0 to 15,000 cycles followed by two stages, each comprised of an amplifier and clipper circuit, for converting the filtered waveform to a square wave. A radio transmitter and receiver having a plurality of separate channels within a conventional single side band transmitter bandwidth and a system for transmitting secure speech information are also disclosed.

19 Claims, 4 Drawing Figures



CONFIDENTIAL DISCLOSURE OF INVENTION

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SQUARE WAVE SPEECH DIGITIZER

This invention is a digitizing technique which while retaining full speech intelligibility, removes from the spoken message all amplitude variations, resulting in an on/off code.

This code is so remarkable, that although when viewed on an oscilloscope, it appears to be a series of square waves, it remains fully intelligible without any further processing... i. e., it may be transmitted to any number of mechanical transducing systems normally used for speech, and it retains its full intelligibility. *EF*

This system then simplifies speech itself, the simplified speech can perform very simply many many tasks normally requiring very complex equipment... a few examples are: 95% efficient amplifiers, radio transmitter modulators, underwater communications systems, 100% efficient laser modulators, very narrow band radio systems, and speech controlled machinery.

The potential uses for such a system are endless, and cannot be included in this disclosure and therefore must be included in disclosures of their own.

Many of the uses mentioned above cannot be performed through any other system.

Technically, the simplified speech digitizer consists of a high pass filter, with a slope of 12 db per octave to the upper limit of hearing, following this filter, is an extremely efficient zero crossing detector, and an electronic switch.

A diagram of this system is shown in Figure 1. *EF*

Also indicated in the figure, in dotted lines is a noise masking generator. The generator is not necessary to the operation of the system, but is found useful in some cases, as will be further described in the text to follow.

In figure one, the purpose of the 12db per octave filter is to accentuate the slight timing variations in the speech waveform. (1)

The intelligent information is carried in the timing of the changes in the waveform, therefore, this filter accentuates the rate of change of the waveform.

Following the speech waveform through the circuit shows slight variations in the signal greatly amplified at this point... at this time, all major variations actually cross the zero averaging line at this point. *EF*