Examiner

Sept. 19, 1939. K. NEKOLNY 2,173,560

INDICATING SYSTEM

Filed May 20, 1938

Fig. 1

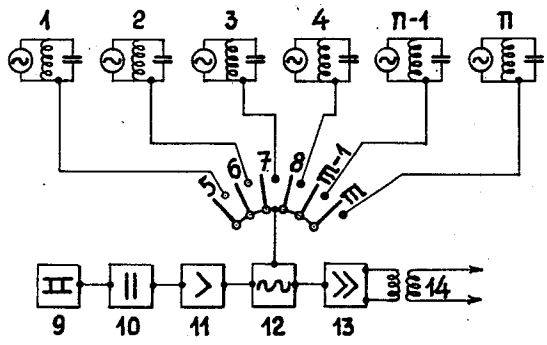


Fig. 2

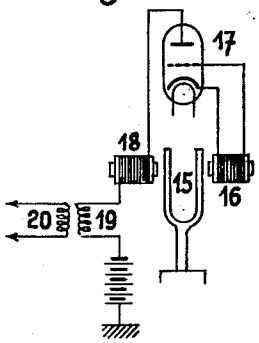
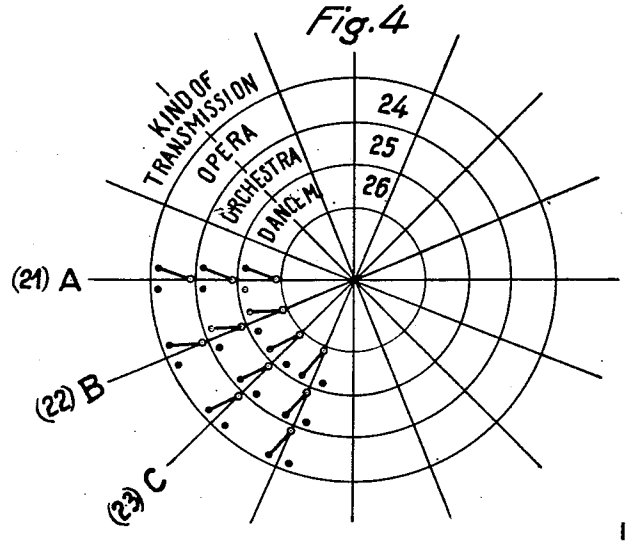


Fig. 3

KIND OF TRANSMISSION	Station A	Station B	Station C	Station D	.....	.....	....
OPERA							
ORCHESTRA							
DANCE MUS.							
LECTURES							
POL. SPEECH							
SPORT							

Fig. 4



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INDICATING SYSTEM

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In Hungary February 26, 1938

3 Claims. (Cl. 250—17)

At present the indication of the place of origin and of the particular kind of transmissions effected by means of electro-magnetic waves is usually made by oral announcement, a method of communication which is often inconvenient for the receiving stations.

The object of this invention is a new broadcasting system which transmits certain identification signals characterising the stations as well as the various types of their programs.

In my copending application No. 199,538, I have shown how these identification signals may be assembled in a manner which makes it possible to select from the variety of available programs, the program and the station desired.

The object of my invention is achieved by superposing upon the carrier wave of a station radiating transmissions, modulations of such a kind as are distinctively characteristic for each type of program emitted by the stations and for the station emitting said program.

In case it is desired to indicate the various particular types of programs emitted by a single broadcasting station only, this may be done by the superposition of such characteristic modulations on the carrier wave of the station, during intermissions, if there are any, in addition to the intermission sign, modulations, which, according to a predetermined code, are characteristic for each particular kind of program.

Such transmission of the signals may also be extended over the whole period of broadcasting, by employing as modulations, frequencies or frequency or rhythms respectively, of the inaudible range for instance and which thus will not disturb the normal program emission.

In case it is desired to transmit simultaneously signals characterising the particular types of programs of various stations, this may be done by superposing the corresponding modulations on the carrier wave of one of the stations, or of a separate station.

The method according to the invention is furthermore suitable for the transmission of secret communication or warnings to the receiving station according to a prearranged code.

The distinctive characteristic modulations employed may be simple or composite or intermittent.

The composite characteristic modulations may also be produced by means of superposition of the oscillations generated by the oscillators used.

The apparatus for carrying into effect the transmission of the programs is provided with a number of oscillators equal to the product of the number of stations and the number of the general types of program which are to be distinguished from each other. Switches, methodically arranged in groups, are used by means of which the characteristic modulations generated by the oscillators are fed, when required, to the modulator stage of the transmitter.

Mechanically oscillating members or electric oscillating circuits, may be employed both of which are per se known.

The oscillators may be operated in any conventional manner.

The switches allotted to the various characteristic modulations are preferably grouped in such a manner that each group belongs to a certain particular kind of program, whilst each of the individual units of the various groups belongs to one broadcast station, or vice-versa.

The various groups may be arranged in concentric circles or in rows, whilst the individual units may be arranged along radial lines or below each other, or alongside, each other. It is, however, also possible to arrange the various groups in the manner of a map, in accordance with the station scale usual on receiving sets, according to wave lengths or according to an alphabetical order of sequence.

The accompanying drawing shows, by way of example, more particularly one of the embodiments of the object of the invention.

Fig. 1 is a diagrammatic of an installation according to the invention,

Fig. 2 shows a lay-out of a mechanically oscillating member,

Fig. 3 shows a possible arrangement of the switches allotted to the various transmitting stations and kind of transmissions, in form of a board,

Fig. 4 shows the switches allotted to the various stations arranged in concentric circles.

In Fig. 1, 1, 2, 3, 4, . . . (n—1), n, represent electric circuits, each of them generating a certain characteristic modulation; 5, 6, 7, 8, . . . (m—1), m, represent the switches allotted to the above mentioned frequency generators, whilst 9, 10, 11, 12, 13 mean the stages of the transmitter, particularly 9 the master-oscillator, 10 the buffer-stage, 11 an amplifier-stage, 12 the modulator-stage and 13 the power-amplifier-stage; 12 is connected with the switches 5, 6, 7, 8, . . . (m—1), m—14 is the output of the transmitter.

In Fig. 2 representing a mechanically oscillating circuit, 15 is the oscillating member in form of a tuning fork, 16 is an induction coil influencing the grid of the radio tube 17, and 18 is a coil

of an electromagnet generating the oscillations of the fork, 19 is an induction coil and 20 the secondary output of the anode-circuit of the tube.

In Fig. 3 the various switches are arranged in columns and rows. The vertical columns correspond to different radio or broadcast transmitting stations, such as station A, B, C, whilst the horizontal rows correspond to the various kind of transmissions, such as opera, orchestra, dance music, lectures, political speeches, sport, etc.

In Fig. 4 the radii 21, 22, 23, along which the various switches are arranged, correspond to the different transmitting stations, and the circles 24, 25, 26 correspond to the various kind of transmissions, such as opera, orchestra, dance-music, etc.

The system is operated as follows: A station, A for instance, is broadcasting dance music. The operator who controls the signal service closes the third switch of the row A, Fig. 3 or Fig. 4 respectively, corresponding to one of the switches 5 to *m*, thus starting the transmission of the modulation produced by the appertaining generator, which modulation is characteristic concomitantly of the station A and the type of its program, namely dance music. Suppose, station B is broadcasting a lecture, the operator will then close the fourth switch of the row, so that the transmitter will at the same time emit the modulation characteristic concomitantly of station B and of its type of programs; and so on. These and other modulations, according to the switches which have been closed, will then be utilized in a receiving set as disclosed in my United States Patent No. 2,164,161, issued June 27, 1939, so as to indicate that the station A is transmitting dance music, the station B a lecture, etc.

What I claim is:

1. A broadcasting system for transmitting signals alloted concomitantly to operating broadcast stations and the various types of their programs, said system including a transmitter, a modulator stage associated with said transmitter, a set of modulation generators of a number corresponding to the number of said broadcast stations and said types of programs, each of said modulation generators allotted to one station and one kind of its programs, and switches for connecting arbitrarily said modulation generators to said modulator stage.

2. A device as set forth in claim 1, said switches set up in groups of coordinate relationship, the one kind of coordinate representing the various stations, the other kind of coordinates representing the nature of their programs.

3. A device as set forth in claim 1, said switches set up in coordinate systems of concentric circles and radii, the one kind of coordinates representing the various stations, the other kind of coordinates representing the nature of their programs.

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