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WIRED RADIO CHANGE-OVER SYSTEM

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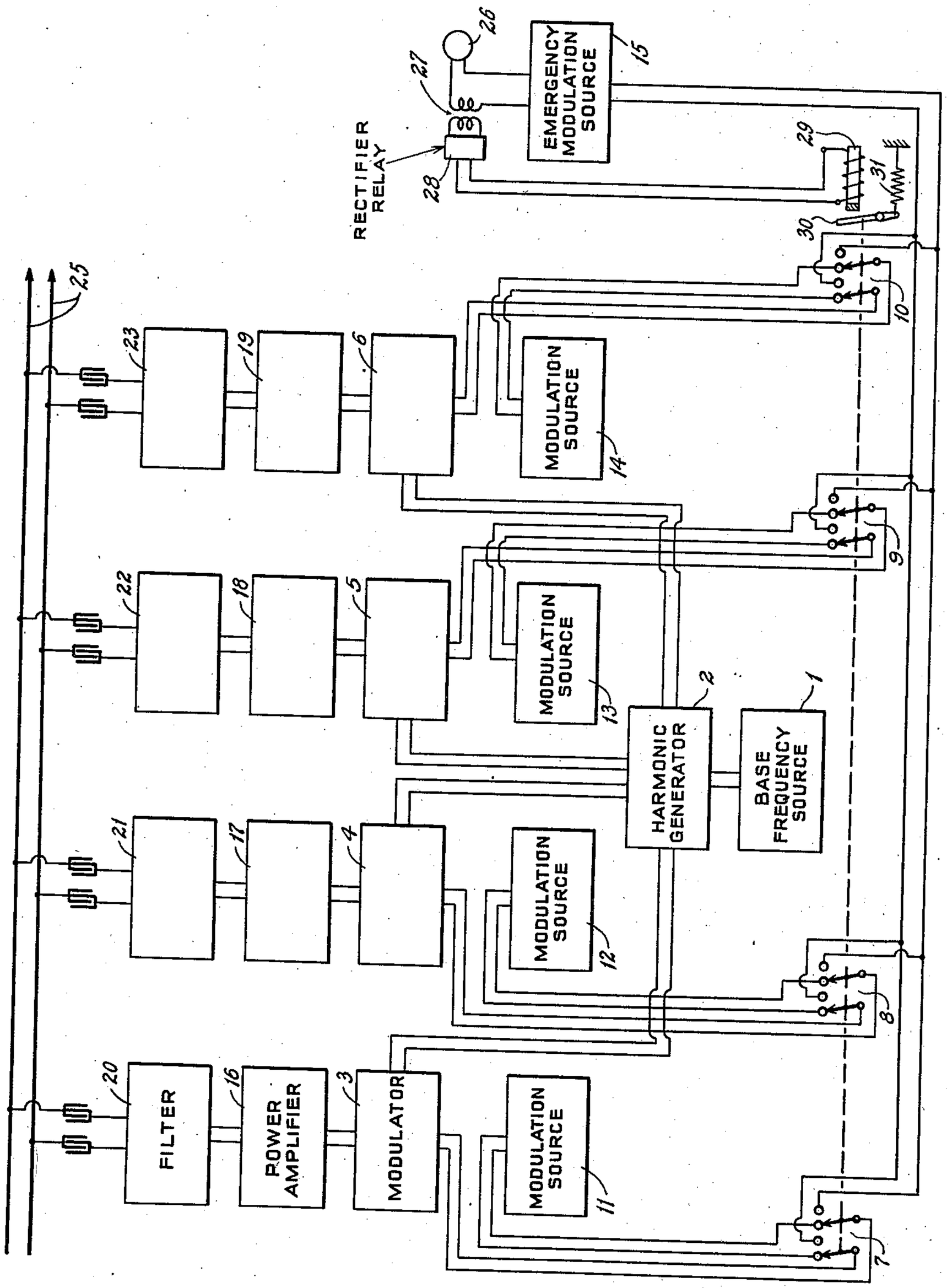


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## WIRED RADIO CHANGE-OVER SYSTEM

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6 Claims. (Cl. 179—15)

This invention relates in general to a signalling system and especially relates to an arrangement for interposing special signals on a multi-program transmission system.

The principal object of the invention consists in providing a system for normally transmitting programs with means for interposing on said system a special signal, such as an alarm, instructions, or the like, in cases of emergency or necessity.

A further object of the invention comprises providing a multi-channel program system for transmitting programs at a plurality of different frequencies to selective receivers with means for interposing a special signal on all of said program channels so that a receiver tuned to any one of the program channels will receive a special signal.

These and other objects will be apparent from the following, reference being had to the accompanying drawing which represents one embodiment of the system of the invention.

The invention will be described in connection with a wired radio system, although it will be apparent that other forms of signalling systems can equally well adopt the concept of the invention.

According to the invention, a base frequency source 1, such as an electron tube oscillator, supplies a sustained high frequency wave of a base frequency such as, for example, 13 kilocycles. This wave is fed to a harmonic generator 2 which develops a plurality of harmonic waves of different frequencies from the base frequency wave. These frequencies, such as 26, 39, 52, and 65 kilocycles, are respectively supplied to modulators 3—6. The modulators 3—6 comprise electron circuit means known in the art for modulating high frequency waves with signals. The modulators 3—6 have their input circuits connected to double pole switch arms 7—10. These switch arms are shown contacting terminals connected with modulation sources 11—14 respectively. The switches may be moved commonly to engage other terminals connected in parallel with an emergency modulation source 15. Accordingly, it will be seen that the modulators 3—6 may be connected either with the modulation sources 11—14 respectively, or in common with the emergency modulation source 15.

The output circuits of modulators 3—6 are directed through power amplifiers 16—19 and thence through filters 20—23. The filters 20—23 restrict the respective outputs to discrete frequency bands impressed through capacitive couplings upon the transmission medium 25. The transmission medium 25 here shown is a commercial power distribution network connected with receivers having selective filter circuits and receiving any one of the program channels transmitted through the various filters. The modulation sources 11—14 comprise different program sources for supplying various program signals to the different modulators.

The emergency modulation source 15 supplies emergency or predetermined signals. It may be provided with a phonograph for supplying predetermined signals at predetermined times, as controlled by a clock driven switch, or may be provided with a microphone such as microphone 26, under control of an emergency operator. The emergency operator might be the captain of a ship, the superintendent of a building, or the chief of police or fire chief of a township, who makes an announcement of vital importance to the receivers connected with the transmission medium 25.

As shown in the drawing, the microphone circuit includes a transformer connection 27 to a rectifier-relay 28 which, upon being energized by signals in the transformer 27, operates a power relay to operate a slow-to-release electromagnet 29 controlling an armature 30 mechanically connected with switch arms 7—10. When the electromagnet 29 is energized, the switches 7—10 are pulled against tensioning spring 31 so as to engage contacts connected with emergency modulation source 15 and thereby connect all of modulators 3—6 in common with the emergency modulation source so that the emergency signals are transmitted over the transmission medium. Thus, no matter to what program signal the receivers are tuned, they will receive the emergency signals. The electromagnet 29 will not release the switch arms 7—10 until a predetermined time has lapsed after energization of transformer 27 by the emergency signals.

Although a preferred form of system has been disclosed, it will be recognized that various changes and modifications can be made by those skilled in the art without departing from the intended scope of the invention. Therefore, no limitation is intended except as pointed out in the appended claims.

What is claimed as new and original to be secured by Letters Patent of the United States is:

1. A signalling system comprising, a common transmission medium, transmission means for transmitting a plurality of different programs at discrete frequencies over said transmission medium, an emergency modulation source, and control means for interrupting said program transmission and connecting said emergency modula-

tion source with said transmission means to simultaneously transmit the single emergency signal modulation at all of said frequencies, said emergency modulation source comprising means responsive to the emergency modulations for actuating said control means.

2. A signalling system in accordance with claim 1 in which said transmission means includes a plurality of modulators and a plurality of modulation sources respectively connected to said modulators in normal operation, and in which said control means is adapted to disconnect all said modulation sources from said modulators and connect said emergency modulation source in common with all of said modulators.

3. A signalling system in accordance with claim 1 in which said transmission means includes means for generating a plurality of harmonically related discrete carrier frequencies, a plurality of different modulation sources, a plurality of modulators for respectively modulating said different carrier frequencies with the modulation signals from said different sources, and in which said control means includes switches for connecting the input of said modulators either with said modulation sources or in common with said emergency modulation source.

4. A signalling system comprising, means for generating a plurality of discrete carrier frequencies, a plurality of modulators adapted to respectively modulate said different discrete frequencies, a plurality of program modulation sources, an emergency modulation source, switches respectively connected in the input circuits of said modulators, connections to said switches for connecting said program modulation sources respectively with said modulators or for connecting said emergency modulation source in common with all of said modulators for transmitting an emergency modulation signal at all of said discrete carrier frequencies, and means responsive to the emergency modulations for operating said switches to effect immediately said common connection and return to said respective connections a predetermined period after cessation of the emergency modulations.

5. A signalling system in accordance with claim 4 including electromagnetic means for controlling said switches, and circuits extending from said emergency modulation source to said electromagnetic means for controlling the same to tie-in said emergency modulation source with all of said modulators.

6. In a system for transmitting a plurality of carriers over a wire network to a multiplicity of receivers, each carrier being modulated by a separate program source in normal operation, a cut-in device comprising, a source of special modulations, a relay actuated by said modulations, and a switch operative in response to said relay for disconnecting all said program modulation sources and connecting said special modulation source to all said carriers immediately upon the occurrence of special modulation, said switch being adapted to hold the latter connection for a predetermined time after cessation of said relay actuation.

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