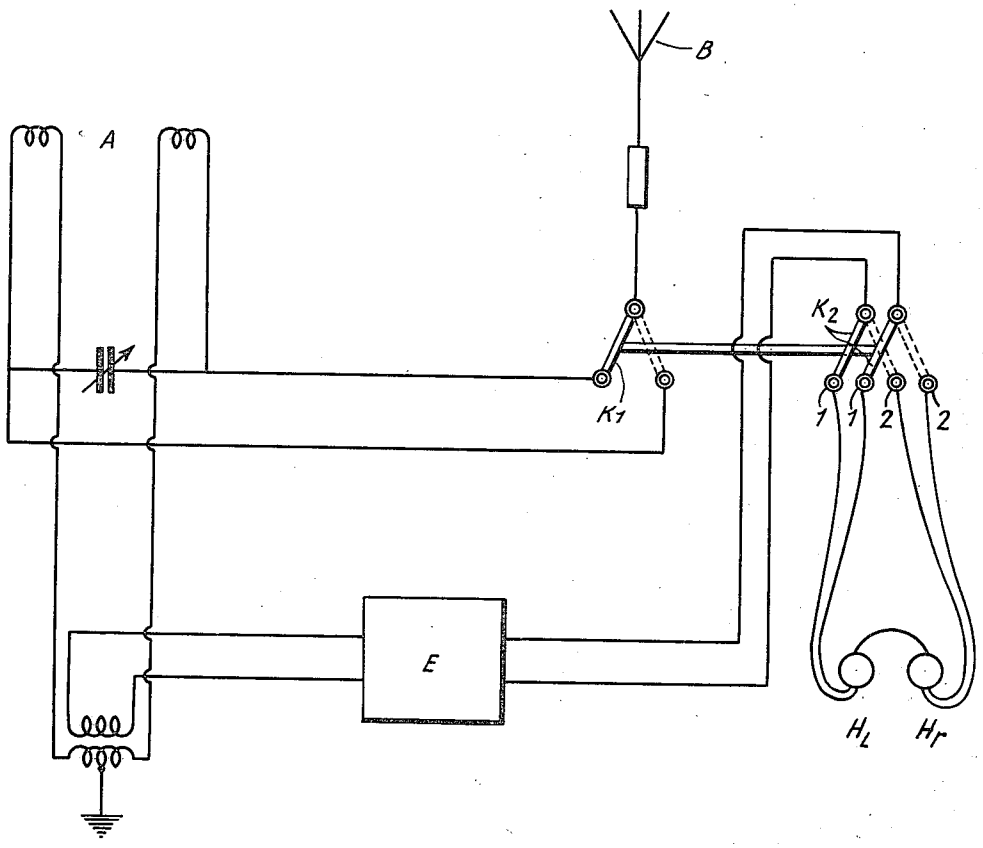
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DIRECTION FINDER

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INVENTOR
AUGUST LEIB

BY H. G. Groves

ATTORNEY

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DIRECTION FINDER

August Leib, Berlin, Germany, assignor to Telefunken Gesellschaft für Drahtlose Telegraphie m. b. H., Berlin, Germany, a corporation of Germany

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This invention relates to a direction-finding receiver arrangement comprising a rhythmically changed-over antenna.

It has been suggested in the prior art of receivers with rhythmically changed-over antennæ to make the two connections distinguishable from each other by different acoustic identification marks or signs produced in the receiver outfit, say, two acoustic signals being different from and complementary in reference to each other, and to contrast the volume of the two in such a way that like volumes (in case of complementary signals a continuous and invariable tone) indicate the proper adjustment of the direction-finder in reference to the incoming beam, and dissimilar volumes a deviation to the right or the left-hand side. If one of the distinctive marks or signals is louder than the other, then a deviation to the right has happened, and vice versa. But this does not preclude the chance of an error, for a mental effort must always be made to recall as to which signal, when louder, corresponds to a departure to the right, and which to a deviation to the left.

In order to relieve the memory entirely, the distinguishing signals of the two antenna leads, according to this invention, are produced in a way preclusive of all chances of error or confusion by operating the left ear- and right ear-phones of the headset independently of each other, and by alternately connecting the phones with the receiver at the rhythm with which the change-over of the aerial occurs. In other words, in one antenna connection, one hears only with the right ear, and in the other antenna connection only with the left ear. Then, if the reception perceivable with the right ear is stronger in volume, a deviation to the right from the course occurs, and vice versa. If the two intensities are alike, then the direction-finder is exactly set for the beacon.

One exemplified embodiment of the basic idea of the invention is shown in the drawing schematically, the same covering the particular case where, by the aid of a coil antenna A and a linear antenna B, a directional cardioidal receiving characteristic is obtained. The change from one cardioidal receiving characteristic to the other being symmetric is effected by the change of the relative sense of connection of the two antennæ. The change-over of the antennæ is effected, for instance, by the aid of a mechanical commutator or switch K1. According to the invention, the left telephone H1 and the right telephone Hr are connected with the contacts 1, 1, and 2, 2, respectively of a commutator or throw-over switch K2 synchronized with the antenna throw-over switch K1 so that the left and the right phone are united with the output end of the receiver E in unison with the antenna changes.

In addition to this method of insuring distinction, the various switching operations can be differentiated furthermore by additional acoustic identifications, such as dissimilar complementary acoustic signals.

I claim:

1. A receiver switching arrangement for a direction finder, comprising a plurality of switch blades and switch contacts, a linear antenna connected to one of said switch blades, a coil antenna having coupling means for coupling said coil antenna to a radio receiver, said coil antenna connected to contacts associated with one of the switch blades that is connected to said linear antenna, a radio receiver connected to two of the other switch blades, a head set comprising telephone receivers for use with the right and left hand ear, said telephone receivers having separate electrical connections connected to the contacts of said radio receiver switch blades, and means for simultaneously operating the radio receiver switch blades with said antenna switch blades so that the telephone receiver for the left hand ear and one for the right hand ear are changed over in synchronism with the changes in connection of said antenna.

2. A receiver switching arrangement for a direction finder, comprising a plurality of switch blades and switch contacts, a linear antenna connected to one of said switch blades, a coil antenna having a coupling transformer for coupling said coil antenna to a radio receiver, said coil antenna connected to the contacts of one of said switch blades that is connected to said linear antenna, said radio receiver connected to two of the other switch blades, a head set comprising telephone receivers for use with the right and left hand ear, said telephone receivers having separate electrical connections connected to the contacts of said radio receiver switch blades, and means for simultaneously operating the radio receiver switch blades with said antenna switch blades so that the telephone receiver for the left hand ear and one for the right hand ear are changed over in synchronism with the changes in connection of said antenna.

3. A receiver switching arrangement for a direction finder, comprising a plurality of switch blades and switch contacts, a linear antenna connected to one of said switch blades, a coil antenna

having a plurality of coils, one of said coils being grounded at the center point thereof and being adapted for coupling said coil antenna to a radio receiver, said coil antenna being connected to the contacts of that one of said switch blades which is connected to said linear antenna, said radio receiver being connected to two others of said switch blades, a head set comprising telephone receivers for use with the right and left ear, said telephone receivers having separate electrical connections connected to the contacts of said radio receiver switch blades, and means for simultaneously operating the radio receiver switch blades with said antenna switch blades so that the telephone receiver for the left ear and one for the right ear are changed over in synchronism with the changes in connection of said antenna.

4. A receiver switching arrangement for a direction finder comprising two groups of switching means, each group comprising fixed and movable members, a linear antenna connected to a movable element of the first group of said switching means, a coil antenna having coupling means for coupling said coil antenna to a radio receiver, said coil antenna connected to one of the fixed members of said first group of switching means, said radio receiver connected to two movable members of said second group of switching means, a head set comprising telephone receivers for use with a right and lefthand ear, said telephone receivers having separate electrical connections connected to the fixed members of said second group of switching means, and means for simultaneously operating the movable members of said second group of switching means with the movable members of said first group of switching means so that the telephone receiver for the lefthand ear and the receiver for the righthand ear are changed over in synchronism with the changes in connection of said antenna.

AUGUST LEIB.