

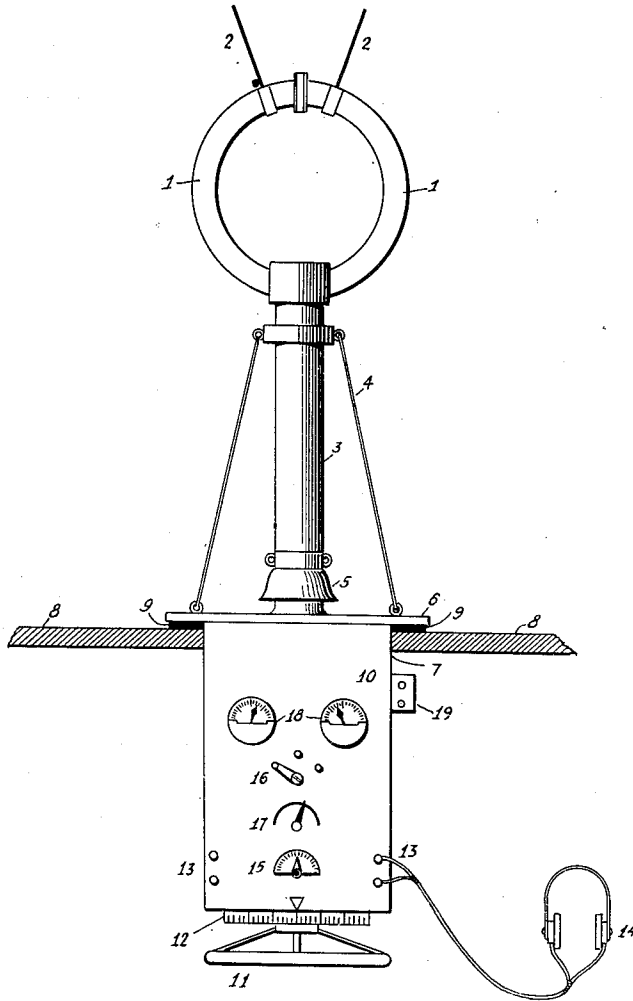
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RADIO DIRECTION FINDER APPARATUS

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RADIO DIRECTION FINDER APPARATUS

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2 Claims. (Cl. 250—11)

A direction-finding outfit, as is well known in the prior art, consists of a directional loop or coil antenna, a non-directional auxiliary antenna adapted to eliminate disturbances (masking) of the point of minimum signal strength, and for clearly indicating the sense of the waves to be received, the tuning means for the selective circuits, the amplifiers for radio frequency and audio frequency, the detector or audion tube comprising regenerative means, coupling between goniometer coil and auxiliary antenna, sources of current for the filament and for the plate, or else choke-coil filters and resistances to derive this energy from a supply network, and, optionally, charging apparatus for the sources.

Direction-finders as heretofore built comprise a great number of constituent parts. The mounting of such outfits requires a relatively large space and was attended with great expense. In some forms of construction, the direction-finder outfit was combined in one unit or assembly, the main part of the equipment being mounted on the floor of the direction-finder room, while the directional antenna and the auxiliary antenna had to be brought in through the ceiling separately. These unitary forms of construction therefore required a certain amount of floor space, and separate boxes for the sources and the charging devices were needed. Hence, they did not yet measure up to the highest demands as regards simplicity of building and minimum space requirements.

The object of the present invention is to provide apparatus so constructed and positioned as to overcome the above disadvantages.

These drawbacks are obviated according to the present invention by that the complete direction-finder outfit including directional and auxiliary antennae are assembled in one block or unit adapted to be inserted in the ceiling of the direction-finder room.

Other objects and advantages will become apparent from the specification and therefrom when read in connection with the accompanying drawing in which the single figure shows, for purposes of illustration, apparatus constructed in accordance with the present invention.

Referring to the drawing, 1 denotes a metallic protection envelope for the directional antenna or loop accommodated therein. The weather-proof envelope serves at the same time as the auxiliary antenna. In order to enlarge its effectiveness as an auxiliary antenna, extension rods 2 could be fitted thereto, if desired.

3 is the loop shaft which is stayed by the sup-

porter construction 4. Inside 3 are laid all of the leads brought to the receiver apparatus. 5 is a rain protector attached to the shaft to shed the water.

6 is a foundation plate for the securing of the entire outfit. The latter is fitted into a large hole 7 in ceiling 8 of the direction-finder room or house, and is packed by interposition of rubber rings or washers 9 or rings made from similar material.

10 is an outfit box which is attached to the foundation or base plate 6 and inside which all receiver amplifiers and accessories pertaining to the direction-finder are accommodated.

In the drawing are visible upon the anterior wall and underneath the bottom of the box:

Hand-wheel 11 for turning the directional loop.

Dial 12 for goniometer readings.

Sockets 13 for connecting the telephone 14. Wave tuning knob 15.

Switch 16 for changing from direction-finding to determination of the line of direction.

Coupling 17 for setting sharp goniometer reading.

Instruments 18 for testing batteries and tubes, and

19, the connection with the supply line of the vessel from which either the working energy or charging energy for the sources is derived.

In the interior of the outfit are accommodated:

The amplifier tubes, the transformer and couplers, the tuning coils and the tuning condensers, the batteries for the filament and the plate, or the series resistance and choke-coil networks for deriving current from the ship's supply line as well as such other auxiliaries as may be provided to facilitate operations.

The novel outfit has the following merits so far as its mounting is concerned:

The entire outfit can be built and assembled in the factory ready for use and be there tested for tightness, and it can thereupon be secured in a very simple manner by fitting the finished direction-finder unit into the ceiling of the room where it is to be used. All that has to be done furthermore is to attach the terminals 19. The direction-finder unit here disclosed offers best chances for favorable space utilization. For instance, it may be fitted in the chart house above the chart desk, for the surface for laying down the charts is not encumbered. It is also possible to mount the outfit in the interior of the pilot house. For instance, it could be fitted in a space

above the compass since no floor space is required.

Hence, a direction-finder outfit as here disclosed makes it possible to accommodate the same even on board the smallest vessels with a minimum expenditure of time and money.

I claim:

1. A compact directional receiver comprising a base member, a support rigidly fastened to one side of said base member, a cylindrical member rotatably mounted in said support, said cylindrical member terminating in a frame aerial shield enclosing a frame aerial system, a pair of linear absorption members symmetrically supported by said shield, said absorption members taken with said shield constituting a vertical aerial, receiving means fixed to the other side of said base member, said receiving means being

adapted to derive energy from said aerial systems, and means adjacent said receiver for rotating said support and said aerial systems.

2. A directional receiver comprising a base member adapted for mounting, a support rigidly fastened to said base member, a complete electrostatic shield, said shield being rotatable with said frame aerial, and upwardly extending vertical absorbing means electrically symmetrical supported by said shield, said vertical absorbing means cooperating with said shield to constitute a vertical aerial, receiving means fixed to the other side of said base member, said receiving means being adapted to derive energy from said aerial, and means adjacent to said receiver for rotating said support and said aerial systems.

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