SUB-SECTION GB BUZZER TESTERS.

BUZZER TESTER G21 PAGE GB2

BUZZER TESTER G21

Date of design:- 1926

Where fitted:- D/F ~~Model~~ Outfit SD (See Sub-Section LA).

G21 is a buzzer tester for D/F and was introduced to meet the need for an instrument which could be made to influence each loop aerial to exactly the same extent. If the two loops are identical (as in a shore D/F Station) and are equally energised the zero will be found to be at green 45°. In a ship where the fore and aft aerial is usually smaller than the beam aerial the zero will be found to be nearer the bow at about green 30°.

Having once found the correct position of the zeros the accuracy of the loops and instruments can be checked at any moment by means of the G21. It must be noted that this check will not reveal any error due to distortion of incoming wave but only those due to changes in positions or constants of the aerials or instruments.

In the G21 the position of the lead from one of the aerials is semi adjustable in order that the buzzer tester may be made to influence the two aerials exactly similarly. This adjustment is made at the Signal School before issue to sea.

The tester is extremely simple in construction consisting of a coil (3) wound in the form of a toroid (see Admiralty Handbook of W/T (1931) paragraph 377) with two 40 jar condensers (4) (5) connected across the windings, this circuit being tuned to 310 kc/s. The circuit is energised by a buzzer (6) and acts as a buzzer transmitter (See Admiralty Handbook of W/T (1931) paragraph 440). The mechanical frequency of the buzzer controls the spark train frequency and therefore the note frequency. The buzzer is shunted by a 100 ohm resistance (7) which is incorporated in the box. One leg of each aerial is coupled by a single turn (1) (2) to the toroidal coil (3) which is air cored.

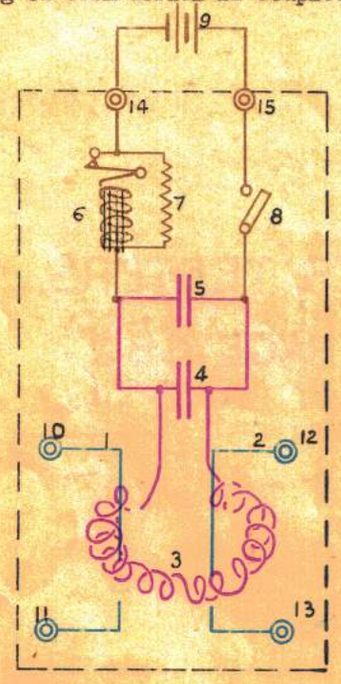

FIG. a.

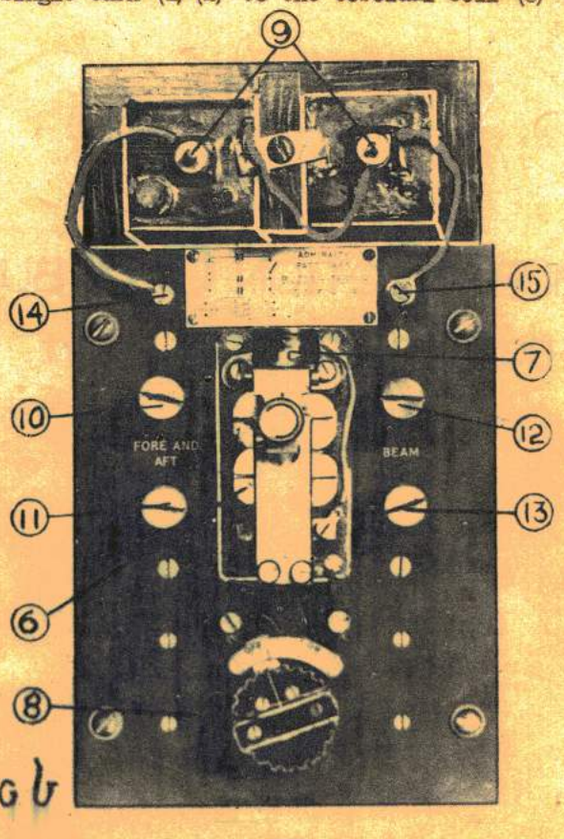

FIG b

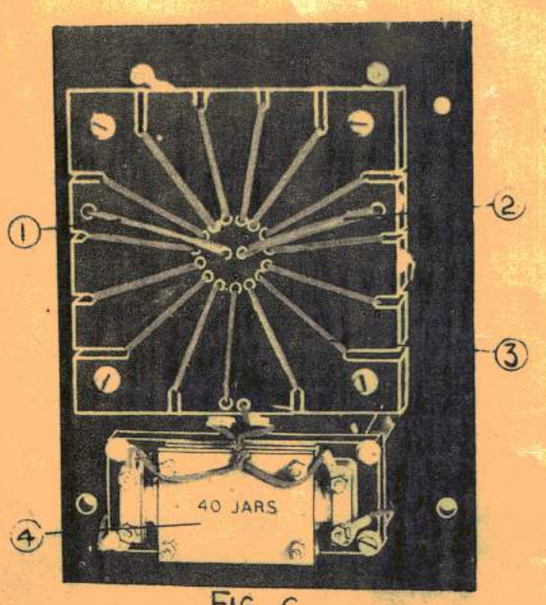

FIG. c

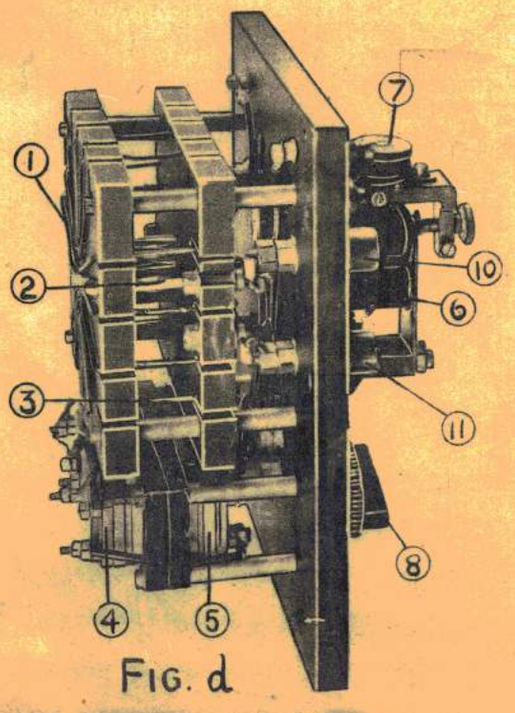

FIG. d