

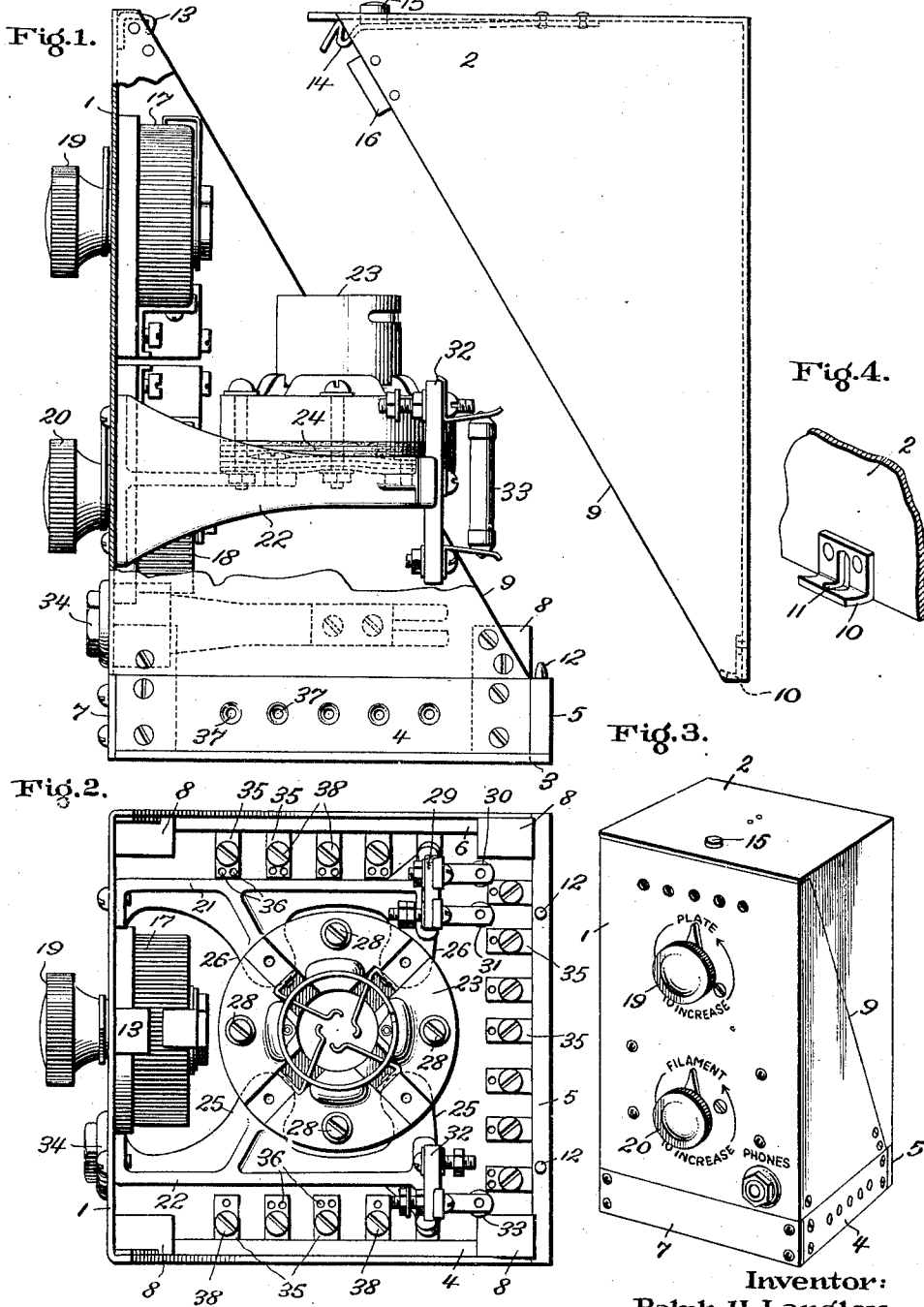
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RADIO SIGNALING APPARATUS

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## UNITED STATES PATENT OFFICE.

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## RADIO SIGNALING APPARATUS.

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My present invention relates to radio signaling apparatus and more particularly to apparatus made up in the form of separate units which may be connected together, each unit being adapted to perform one particular function in a radio signaling system.

One of the objects of my invention is to provide a cabinet for radio signaling apparatus which will be of simple and rigid construction and which will readily permit of convenient access to all of the elements within the cabinet.

A further object of my invention is to provide means for conveniently connecting one unit to another unit which is adapted to perform either a similar function or a different function. Still another object of my invention is to provide a simple and effective means for mounting easily broken apparatus such as a vacuum tube within a cabinet.

The novel features which I believe to be characteristic of my invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and method of operation, together with further objects and advantages thereof, will best be understood by reference to the following description taken in connection with the accompanying drawing in which Fig. 1 is an elevation of a cabinet with the cover removed and with one side broken away to show the mounting of the apparatus; Fig. 2 is a plan view of the cabinet with the cover removed; Fig. 3 is a perspective view of the cabinet with the cover on and Fig. 4 is a detail view of the hinge for the cover.

As indicated in the drawing, one of my improved cabinets comprises a box, preferably of metal, made up of two substantially equal parts 1 and 2. The part 1 forms the front of the cabinet and the part 2 serves as a cover for the apparatus which is mounted on the front. The front part of the box is secured to a base made up of a bottom part 3 and side members 4, 5, 6 and 7, the bottom and side members being secured to corner posts 8 which project above the members 4, 5, 6 and 7 so that the front part of the box may be conveniently secured to posts 8 and hence to the base.

The dividing lines between the two parts of the box are located at the top front edge, the lower rear edge and along lines which are substantially the diagonals 9 of the two

sides between these edges. By dividing the box in this way two important advantages are obtained; the portions of the two sides which are attached to the front of the box serve as supports therefor so that the box may be made of comparatively thin material and yet be rigid enough so that all of the apparatus desired may be mounted on the front and when the rear portion of the box or cover is removed all of the apparatus within the box will be readily accessible for repair or renewal.

The rear portion or cover of the box may be secured to the front by means of two hinge members 10 which are secured to the back of the box. These hinge members have slots 11 which form guides for the pins 12, which project upwardly from the rear side member 5 of the base. The cover is then held in place by means of the catch members 13 and 14 secured to the front portion and cover respectively. By pressing downwardly upon the button 15 the catch member 14 may be released from engagement with member 13 and the cover removed. The hinge construction at the rear lower edge of the cabinet permits the cover to be swung back to inspect the apparatus within the cabinet or its complete removal if adjustments or repairs are needed. Stops 16 which are secured to the two sides of the cover prevent any sidewise or vertical movement of the cover after it has been secured to the front of the cabinet.

A cabinet such as I have described and illustrated may be used for mounting any signaling apparatus desired for performing a definite function as for example, ordinary tuning apparatus for receiving radio signals, vacuum tube detectors or vacuum tube amplifiers. In the present case I have illustrated one manner in which suitable apparatus to make up a vacuum tube detector may be mounted in the cabinet. The apparatus illustrated comprises a plate battery potentiometer 17 and a filament rheostat 18 which are mounted on the inside of the front of the cabinet with their operating handles 19 and 20 outside the cabinet. Two brackets 21 and 22 which are secured to the front of the cabinet serve as supports for a socket 23 for a vacuum tube. A flexible connection between the vacuum tube socket and the bracket is furnished by a plurality of superimposed washers 24 of flexible elastic mate-

rial, such for example, as felt. The lower of these washers only are attached to the four arms 25, 26, on the brackets 21 and 22, while all of the washers are secured to the socket 23 by means of the four screw bolts 28 which are located at points around the circumference of the washers 45 degrees removed from the points where the lower washers are attached to the brackets.

The bracket 21 also carries at its end a base member 29 on which may be mounted a grid condenser 30 and a grid leak resistance 31. Similarly, the bracket 22 carries at its end a base member 32 upon which the phone bridging condenser 33 may be mounted. A telephone jack 34 is mounted on the front of the cabinet for connecting the receiving telephones to the detector circuit.

To permit the convenient connection of other apparatus to the unit described and the convenient connection of a unit such as described to other units which are enclosed in similar cabinets, I have provided a plurality of similar terminals 35 which are set into the side members 4, 5 and 6 of the base, these members preferably being made of insulating material. These terminals are provided with holes 36 into which the conductors making up the circuit connections may be inserted and soldered. These terminals are also provided with openings 37 for receiving a conductor for connecting the unit to other apparatus, these conductors being clamped by means of the screws 38 which are inside the cabinet but are easily accessible when the cover is removed. The terminals on the rear may be employed for making battery connections and for connecting extra telephones to the unit and the terminals on the sides for connecting the unit to other units.

The construction which I have described permits of great flexibility in making up a complete radio receiving system allowing any single unit to be employed in combination with as many other units as desired. For example, if a receiving system is desired made up of a tuner, detector and one stage of audio amplification, a unit containing the

tuning apparatus may be connected to the left of the detector unit described by simply connecting the terminals 35 by short pieces of wire with the corresponding terminals on the right hand side of the tuning unit. An amplifier unit may then be connected in a similar manner to the right of the detector unit. The batteries for operating the detector and amplifier units may all be connected to the rear terminals of either of these units and the battery connections carried through from one unit to the other by means of the side terminals. As many stages of radio or audio amplification as may be desired may be connected together in this way to build up a receiving set.

While I have shown and described a unit which is adapted to serve a single function the same style of cabinet may be employed for units adapted to serve two or more functions and in turn such a unit may be connected in the same manner to other units adapted to perform additional functions.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. A vacuum tube mounting comprising a support, a plurality of superimposed washers of resilient material, means for securing a portion only of said washers to said support, a vacuum tube socket and means for securing all of said washers to said socket.

2. A vacuum tube mounting comprising a support, a plurality of superimposed washers of resilient material, and a vacuum tube socket, a portion only of said washers being secured to said support and the remaining portion of said washers being secured only to said socket.

3. A vacuum tube mounting comprising a support, a plurality of superimposed washers of resilient material, a vacuum tube socket having a base portion, the diameter of said base portion and the diameter of said washers being substantially equal, and means for securing said washers to said base portion and to said support.

In witness whereof, I have hereunto set my hand this 6th day of January, 1922.

RALPH H. LANGLEY.