Feb. 2, 1926. 1,571,907

T. G. McCLANAHAN

DETECTOR

Filed March 29, 1924

Fig. 1

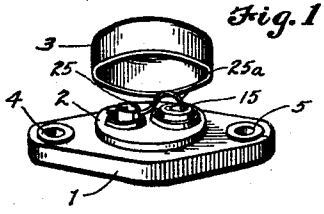
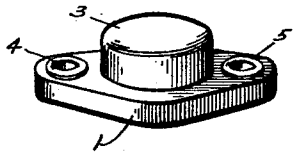


Fig. 2



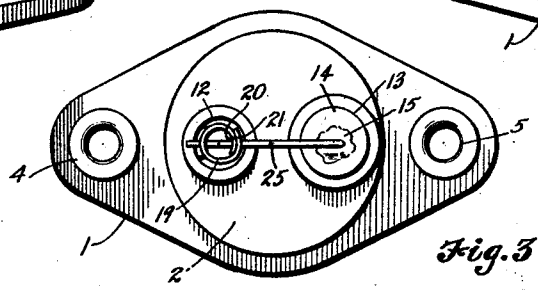


Fig. 3

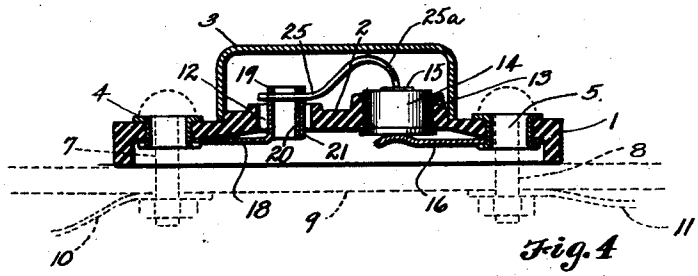


Fig. 4

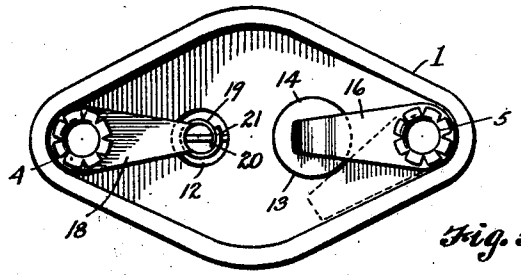


Fig. 5

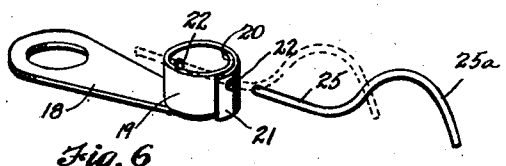


Fig. 6

INVENTOR

Thomas G. McClanahan

Patented Feb. 2, 1926. 1,571,907

UNITED STATES PATENT OFFICE.

THOMAS G. McCLANAHAN, OF SEATTLE, WASHINGTON.

DETECTOR.

Application filed March 29, 1924. Serial No. 702,756.

To all whom it may concern:

Be it known that I, THOMAS G. McCLANAHAN, a citizen of the United States, and a resident of the city of Seattle, county of King, State of Washington, have invented certain new and useful Improvements in Detectors, of which the following is a specification.

This invention relates to improvements in detectors for use in connection with radio receiving equipment, more particularly to detectors adapted for use with radio receiving sets of the crystal type; the principal object of the invention being to provide a detector of novel construction and design, which is compact in arrangment, easily adjusted and which is equipped with a cap or cover whereby the crystal and contact member are so protected as to preclude any possible displacement, accidental or otherwise, of the contact member or "cat whisker" after it has once been properly adjusted with respect to the crystal.

More specifically stated, the invention resides in the provision of a detector of the above character comprising an insulated base member wherein a crystal may be adjustably and removably held and to which is attached a yieldable member wherein a contact or "cat whisker" is mounted for adjustment to any position necessary to bring and retain it in proper touch with a sensitive spot on the crystal.

Other objects of the invention reside in the details of construction of the contact mounting members and the contact and in the arrangement of the parts making up the device.

In accomplishing these and other objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein—

Fig. 1 is a perspective view of a crystal detector constructed in accordance with the present invention, showing the cap or cover member in raised position.

Fig. 2 is a similar view with the cap in place and enclosing the crystal and contact.

Fig. 3 is an enlarged plan with the cap removed.

Fig. 4 is an enlarged, central section of the device particularly illustrating the means for and manner of mounting the crystal and contact.

Fig. 5 is an under side view of the detector.

Fig. 6 is an enlarged perspective view of the contact and its yieldable supporting member.

Referring more in detail to the several views of the drawings—

1 designates a base member of insulating material such as bakelite, fibre or hard rubber which, in the present design is substantially of diamond shape, rounded at the corners and provided centrally with a circular, raised portion 2 over which a cap 3 is adapted to be removably fitted to protect the crystal and contact member as presently described. At opposite sides of the raised portion are openings through which metal eyelets 4 and 5 are extended and clinched and which are adapted to receive bolts 7 and 8 therein, as indicated in dotted lines in Figure 4, for the purpose of fastening the device to a panel 9 and which further serve as the means of electrically connecting the eyelets with circuit wires designated at 10 and 11.

Formed in the base member within the raised portion 2 thereof are two openings 12 and 13; the latter being somewhat greater in diameter than the former and has a crystal mounting 14 removably fitted therein. The mounting carries the sensitive crystal 15 that is exposed at the upper surface of the mounting. The mounting is held removably and adjustably in position by engagement therewith of the free end of a spring finger 16 supported by the eyelet 5; the spring being provided at the mounting end with an opening through which the lower end of the eyelet is extended and clinched thereby holding the spring securely in place yet permitting a rotative movement to one side, as indicated in dotted lines in Fig. 5, to permit the removal or placing of the crystal mounting in the opening 13.

Supported from the lower end of the eyelet 4 is a spring finger 18 which, at its free end, has an integral cylindrically formed portion 19 projecting upwardly through the opening 12. This cylindrical portion is split

vertically along the side adjacent the crystal mounting and the edge portions 20 and 21 thereof, as shown best in Figures 5 and 6, and due to the resiliency of the metal, there is a normal tendency of the two overlapped parts to spread apart. Provided in the back portion of the cylindrical member and in the two overlapped portions thereof at the same horizontal level are perforations 22, see Figure 6, through which the mounting end portion of a contact wire or "cat whisker" 25 is slidably and adjustably held. This contact wire has a portion 25^a curved upwardly and then downwardly to engage at its end with the crystal 15. The mounting end of the contact may be slipped longitudinally within the perforations 22 to bring the end of the part 25^a into proper relation with the crystal and it will be held at any position of adjustment by the pressure in opposite directions thereagainst of the two overlapped portions of the mounting member 19.

The finger or spring 18 has a normal tendency to spring downward and this holds the end of the contact wire firmly in place against the end of the crystal. Should it be desired to re-adjust the contact, the spring is pressed upwardly so as to free the end of the contact from the crystal and the wire adjusted in the mounting 19.

In using the device, the crystal is first placed in position then the contact wire is adjusted into contact with a sensitive spot on the crystal. After this adjustment has been made, the cap 3 is placed in position where it is held by a friction tight fit and serves to protect the parts against displacement and damage from dust or moisture settling thereon.

What I claim as new and desire to secure by Letters Patent is:

1. A detector comprising a base block of insulating material having openings therethrough one of which is adapted for seating a crystal therein, a spring arm fixed to the block and adapted to retain the crystal adjustably and removably in said opening, a second spring arm fixed to the block and having a contact supporting means at one end extending through another of the said openings, a contact wire supported adjustably in said means for contact with the crystal and means whereby the spring arms may be connected electrically in a circuit.

2. A device of the class described comprising a base block of insulating material with a pair of openings therein, a crystal mounting fitted adjustably and removably in one of the openings to expose the crystal at the top of the block, a pair of spring arms mounted on the under side of the block, one of which may be moved to a position to retain the crystal in position and the other of which has an upwardly turned end portion extending upwardly and through the other opening in the block, a contact wire adjustably mounted in said upturned portion and adapted to be held yieldingly thereby in contact with the crystal and means through which circuit connections may be made with the said spring arms.

Signed at Seattle, King County, Washington, March, 1924.

THOMAS G. McCLANAHAN.