J. J. GHEGAN.

HOLDER FOR CRYSTAL DETECTORS.

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1,162,765

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Fig. 1.

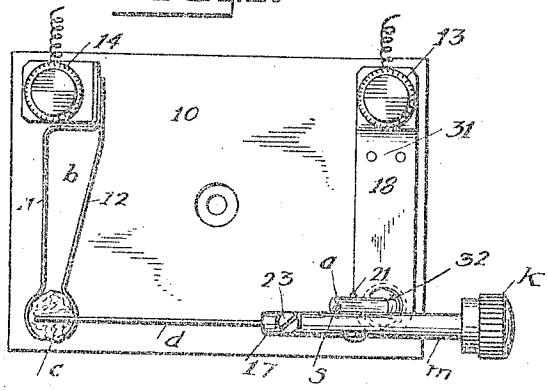


Fig. 2.

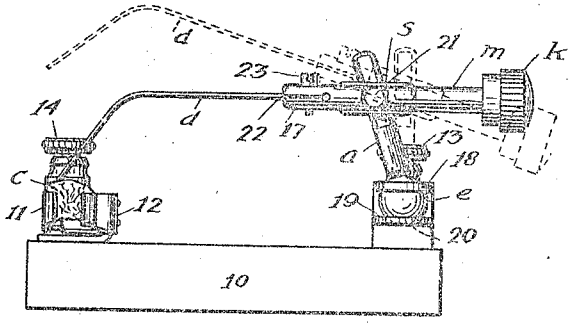


Fig. 3.

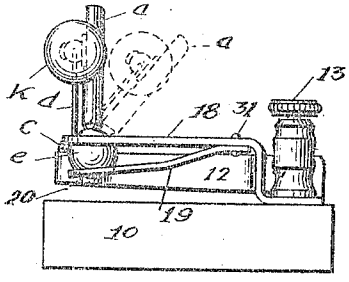
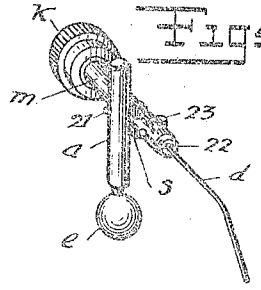


Fig. 4.



Inventor

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UNITED STATES PATENT OFFICE.

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HOLDER FOR CRYSTAL DETECTORS.

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To all whom it may concern:

Be it known that I, JOHN J. GHEGAN, a citizen of the United States, residing in East Orange, in the county of Essex and State of New Jersey, have made certain new and useful Improvements in Holders for Crystal Detectors, of which the following is a specification.

This invention relates to receiving apparatus employed in radio or wireless telegraphy, and involves the use of a crystal, including in that term cerusite, carborundum, silicon and any and all of the general class of minerals and other substances used for detectors in wireless receiving apparatus employed in rendering oscillations audible.

The object of the invention is to provide a detector with its complementary contact, usually a point which is spring-actuated and whose point of engagement with the crystal may and must be varied occasionally.

The improvement consists in providing a holder having a universal joint, like a ball and socket joint, operated under frictional pressure, by which means it is retained in any set position, and combining with this a pivoted lever and a frictional retaining device for the lever. The combination of the two forms of joints in the support for the complementary contact greatly facilitates the easy movement of the contact from one contact position to another, while retaining any contact position uninterruptedly. For the purpose of supporting the crystal, I provide a clip, the jaws of which are spring pressed toward each other; this facilitates the substitution of one crystal for another, and permits the shifting of the surface presented for engagement with the complementary contact.

The accompanying drawing illustrates the invention.

Figure 1 is a top plan view of the complete holder. Fig. 2 is a side elevation. Fig. 3 is an end elevation and Fig. 4 shows the two arms and the contact in detail.

There is a base of insulating material 10. On this base is supported two springs constituting a spring clip *b*. The two springs constituting the clip are shown at 11 and 12 and are fastened to the base 10 through the medium of the binding post 14; the free ends of clip *b* formed of the springs 11, 12, are curved to receive the crystal *c* which may be carborundum; there is a complementary contact *d*, preferably bent or curved as shown in Fig. 2, and supported in a pivoted arm *m*; at the terminal 17 of arm *m*, there is a saw cut and the wire *d* is introduced in this cut and retained by a set-screw 23. Arm *m* is pivoted to an arm *a* at 21, and the hinge joint thus formed is under frictional restraint by means of a plate spring *s*, see Fig. 4, located between the two arms at the hinged junction; on the free terminal of arm *m* is a knob *k* of insulating material for the convenient movement of the support. The arm *a* is on a universal joint, like a ball and socket joint. The ball is shown at *e*. There are two springs 18 and 19 united at 31; spring 18 is bent at right angles and perforated; it is supported through the medium of the screw post 13 which fastens it to the base 10. The ball *e* engages a perforation 32 in spring 18 on one side and a perforation 20 in spring 19 on its under side. Springs 18 and 19 are pressed toward each other and apply friction to ball *e*, so that in whatever position the arm *a* may be placed, it is retained. In Fig. 2, the dotted lines show arm *m* tilted, so as to elevate the wire *d*, and in Fig. 3 arm *a* is shown in a tilted position, as represented in full outline in Fig. 2.

In operation, the hand is applied to the knob *k* and the contact point of wire *d* is easily applied to and retained in any position of contact with respect to the exposed surface of the crystal *c*.

What I claim is:

1. In a detector, the combination of an electrode, a holder therefor, a complementary contact, a support therefor consisting of a universal joint, and two members hinged together, one of said members directly connected to said complementary contact, the other to said joint.

2. In a detector, the combination of an electrode, a holder therefor, a complementary contact, a support therefor consisting of a universal joint, two members hinged together, one of said members directly connected to said complementary contact, the other to said joint, and means for frictionally restraining the movement of either member.

3. In a detector, the combination of a solid member, a holder therefor, a resilient complementary contact, a universal joint, means for retaining it in set position and a support therefor consisting of two members hinged together, one of said members

directly connected to said universal joint, the other member directly connected to said complementary contact.

4. In a detector, the combination of an electrode, a holder therefor in the form of a spring clip, a complementary contact, a universal joint supporting said contact, a member connected to said contact at one end and a hinge connecting said member and said joint.

5. In a detector, the combination of an electrode and a complementary contact, a universal joint to which said contact is connected, and a hinge connection between said contact and joint.

JOHN J. GHEGAN.

Witnesses:
WILLIAM MARSHALL,
GEO. HELLER.