March 29, 1927. 1,622,459

B. H. LUNDQUIST

RADIO DETECTOR

Filed Feb. 29, 1924

Fig. 1.

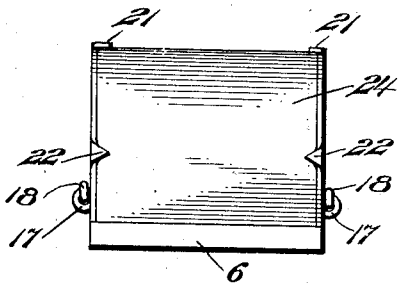


Fig. 2.

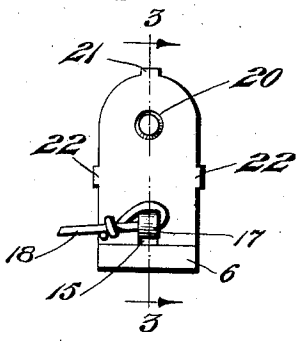


Fig. 3.

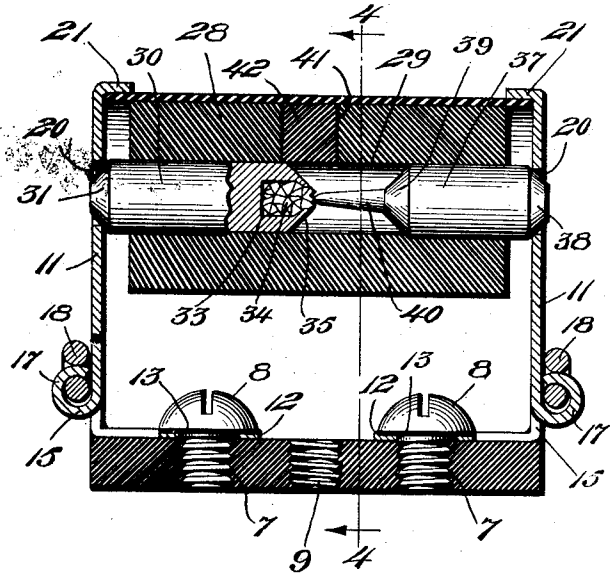
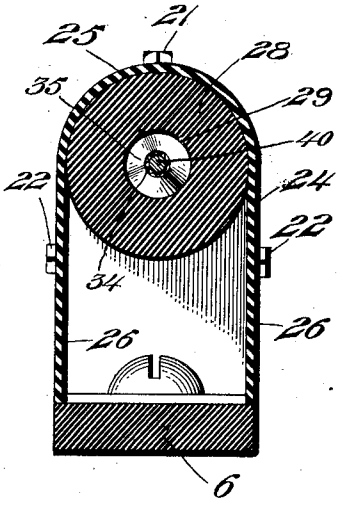


Fig. 4.



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UNITED STATES PATENT OFFICE.

BERNARD H. LUNDQUIST, OF PROVIDENCE, RHODE ISLAND.

RADIODETECTOR.

Application filed February 29, 1924. Serial No. 695,925.

My invention relates to detectors for use in radio sets.

The essential objects of my invention are immovability of the mineral member relatively to the contacting element; protection against derangement or fracture of the parts; effective insulation; improvement in the circuit wire attaching means; and the attainment of these ends in a simple and inexpensive structure.

To the above ends essentially my invention consists in such parts and in such combinations of parts as fall within the scope of the appended claims.

In the accompanying drawings which form a part of this specification—

Figures 1 and 2 are a side elevation and end elevation respectively of my novel detector,

Figure 3, a longitudinal section of the same on line 3—3 of Figure 2, and

Figure 4, a transverse section taken on line 4—4 of Figure 3.

Like reference characters indicate like parts throughout the views.

In the form of my invention herein shown an oblong base 6 of insulating material has threaded perforations 7 for the reception of attaching screws 8, and an intermediate similar perforation 9 adapted to receive a panel attaching screw. Thin metallic end plates 11 have upon their lower ends inturned lugs 12 resting on the base provided near their inner ends with holes 13 to admit the attaching screws 8. The material of the lower portions of the plates and the portions of the lugs adjacent thereto is cut to form L shaped slots 15, and the material thus cut is formed into circular rings 17 upon the exterior of the supporting plates adapted to have threaded therein and attached thereto the circuit wires 18. The hook or ring clamping members 17 have sufficient resiliency to accommodate themselves to wires of varying sizes and are more convenient and less expensive than binding screws. Centrally of the upper portions of the supporting plates are openings 20, and upon their top and sides inturned prongs 21 and 22 respectively overlapping and retaining a housing member 24 of paper, fiber, or other electrically nonconducting material, comprising an arched top portion 25 and vertical side portions 26, the lower edges of which abut against the base 6. This housing not only serves as an auxiliary insulating means but protects the enclosed parts from accidental dislocation.

A cylindrical block 28 of hard rubber or other insulating material has a central bore or opening 29. Into one end of this bore is partially driven and rigidly held a cylindrical metallic rod or holder 30 with the extremity of its projecting portion 31 of reduced diameter. Its opposite or inner end is provided with a central cavity 33 in which is seated the mineral or crystal 34 which is held in place by clamping down upon its peripheral margin a terminal tapering or reduced portion 35 of the rod, leaving a central portion of the mineral exposed.

A cylindrical metallic rod 37 is also driven a portion of its length into the bore 29 and has upon its outer end a reduced portion 38 registering in the openings 20 of the second plate 11. The rod 37 has integral with or fast to its tapered inner end 39 a metallic contact needle 40 whose point is in contact with the mineral element 34.

In order to insure against any possible movement of the members 30 or 37 relatively to the block or to each other the bore 29 is preferably one or two thousandths smaller than the rods 30 and 37, so that the driven rods are slightly embedded in the block 28. As will be seen from Figure 3, the rods form a closure for the ends of the bore of the block 28, and also the sole support for said block. Since the needle and mineral are nonadjustable relatively to each other it is convenient, prior to the driving operation, that the block 28 originally have a radial sight opening 41 extending from the periphery to the bore of the block in transverse alignment with the mineral element which, after the driving operation, is filled by a plug 42 of like material as the block 28.

The passage of the electrical current is through the circuit wires, the supports 11, rods 30 and 37, needle 40 and element 34.

I claim:—

1. In a radiodetector, an insulating base, metallic supporting plates upon the base, an insulating block provided with a longitudinal bore, rods embedded in the block in the bore engaging the plates, a mineral element in the inner end of one rod, a needle carried by the inner end of the other rod engaging the mineral element, said block being pro-

vided with a transverse opening extending to the bore in alignment with the mineral element, and a plug in the opening.

2. In a radiodetector, an insulating base, metallic supporting plates upon the base, an insulating block provided with a longitudinal bore, rods engaging the supports mounted in opposite ends of the bore, a mineral element on one rod, a needle on the other rod engaging the mineral element, and an insulating housing member engaging the supporting plates and enclosing the insulating block.

3. In a radiodetector, an insulating base, metallic supporting plates fast to the base, laterally extending curved tongues integral with the plates adapted to engage circuit wires, an insulating block provided with a longitudinal bore, rods in opposite ends of the bore engaging the plates, a mineral element carried by one rod, and a needle carried by the other rod in contact with the mineral element.

In testimony whereof I have affixed my signature.

BERNARD H. LUNDQUIST.