Perikon Detectors

Al Klase – N3FRQ

24 Mar 2022

6 Nov 2026

SkyWaves Crystal Radios

Greenleaf Whittier Pickard

1877-1956

(John Greenleaf Whittier's grand nephew)

Silicon Detector patent files 30 Aug 1906
Sorted through thousands of minerals.
Carborundum Detector – 1909
Catswisker – 1911
Wireless Specialty Apparatus Co, - 1907



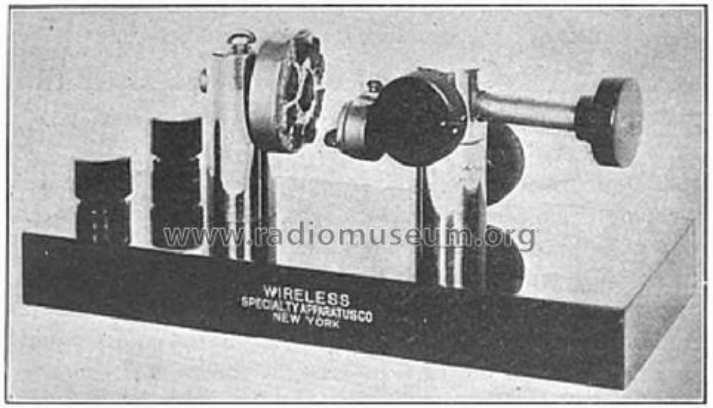
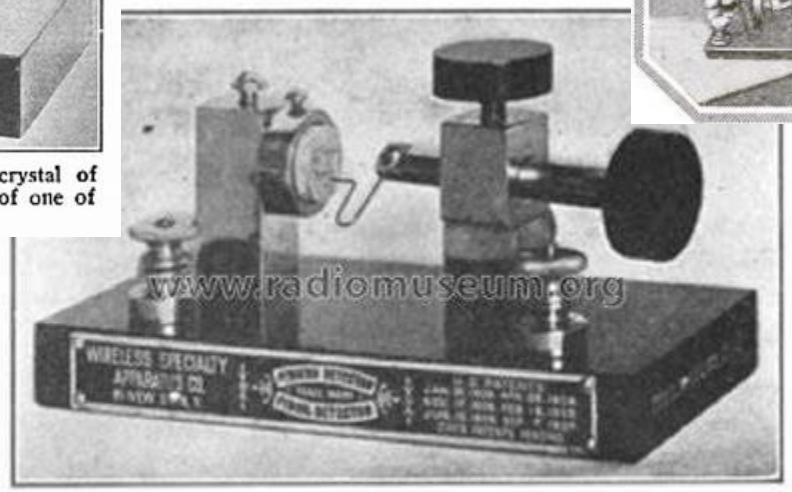


FIG. 67.—A new type of silicon detector in which a crystal of *arsenic* may be brought to bear against the surface of one of several *silicon* crystals.



69.—Pyron detector in which a fine wire is brought to b

Crystal-to-crystal detectors
(Wikipedia)

- Another category was detectors which used two different crystals with their surfaces touching, forming a crystal-to-crystal contact. The "Perikon" detector, invented 1908 by Pickard was the most common. Perikon stood for "PERfect pIcKard cONtact". It consisted of two crystals in metal holders, mounted face to face. One crystal was zincite (zinc oxide, ZnO), the other was a copper iron sulfide, either bornite (Cu5FeS4) or chalcopyrite (CuFeS2).
- Such detectors are very easy to adjust and hold there adjustment quite well unlike galena with a cat's whisker.



Wireless Specialty Apparatus Co. - Type 1 P-34

Homebrew Detectors at N3FRQ

- I've messed with crystal sets for a long time. Back in the '90's I obtained a collection of minerals from a collector's estate. None of these were any better than galena, with maybe the exception of iron pyrite that seemed to work better for shortwave.
- I also mounted an expedition to the Sterling-Mine area of Northern New Jersey, I came back with a sample from a rock shop containing some zincite. (The big attraction to rocks from that site is that many fluoresce under UV light.)



The zincite (dark red) is mixed in with other minerals such as calcite and willemite.

N3FRQ - Perikon #1

In the late 1990's I found myself involved in a crystal-set DX contest where there was a 10% points premium for stations logged with a mineral detector. Now, steel galena can work almost as well as a germanium diode, but it's a complete P.I.T.A.

I arrange my detector box so I could easily switch between the diode and this perikon detector. It held adjustment for the entire week of the contest, and worked for 90% of the logged stations.

The fixed mineral is chalcopyrite from the French Creek Mine in S.E. Pennsylvania.



Aeriola Junior

Back in 2009 I restored this set for our museum. The detector minerals were completely absent.
See it here: https://www.youtube.com/watch?v=N3hZU3e4-zg



In this case the fixed element is bornite. It's mounted in a large acorn nut with a washer to keep it from moving. All the mounts are ordinary solder, That's never proved to be a problem. READ THIS

Aeriola Junior Details

