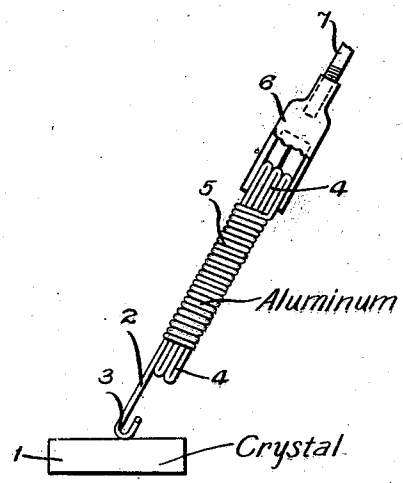
May 31, 1927. 1,630,383

E. J. HAVERSTICK

DETECTOR

Filed June 28, 1923



WITNESSES:

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UNITED STATES PATENT OFFICE.

EARL J. HAVERSTICK, OF OAKMONT, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

DETECTOR.

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My invention relates to rectifiers of the type in which a crystal coacts with a metallic element to constitute a rectifier and it has particular relation to detectors.

Regarded broadly, one object of my invention is the provision of materials for detectors that will produce improved results.

In another broad aspect, the invention has for its object to provide a support for the contacting metal which will enable its contact with the crystal to be maintained effectively even when the contacting metal is softer than those heretofore used.

More specifically stated, one object of my invention is to provide a metal of qualities superior to those of the metals heretofore used in detectors of the crystal contact type and a correlated object is to provide an arrangement wherein the necessary contact pressure may be secured with aluminum wire, which is so soft that unassisted it will bend when an attempt to produce the contacting pressure is made. If the wire bends, no effective pressure is produced between the metal and the crystal and so proper rectification will not be secured.

These and other objects of my invention will be made more apparent by reference to the accompanying drawings, wherein the single figure is a side elevational view of a detector embodying my invention. In the figure, the crystal 1 of any of the substances which are sensitive or have "sensitive spots" is contacted by a metallic element or "cat-whisker" 2. The crystal may be of galena, silicon, carborundum, or any substance of analogous properties.

The "cat-whisker" 2, which is of aluminum wire, is bent near the end of the wire into the form of a hook 3, the convex rounded face of which engages the crystal. This affords a different type of contact surface from the usual beveled or pointed end which has heretofore been used. I find that by avoiding sharpened or beveled ends that sensitive spots are more easily found and are less likely to have their sensitiveness destroyed by accidental subjection to heavy current.

I have found that better results are obtained with pure aluminum than with the various alloys of aluminum heretofore used. To take advantage of this superiority, I make the "cat-whisker" of aluminum wire, but such wire is soft and bends easily.

In order that the soft wire may sustain the necessary pressure between the hook 3 and the crystal 1, the wire has been reinforced throughout the greater portion of its length by bending it back and forth upon itself as shown at 4. The end of the wire is then wrapped around the bundle of lengths made by this bending, as shown at 5. This results in a sufficiently rigid, thickened part of the "cat-whisker", so that by the usual adjusting means, the end 3 can be made to press against the crystal 4 without such pressure having to be sustained by a long, slender soft wire. Such a wire would bend under the needed pressure and thus make an ineffective contact.

The "cat-whisker" may be mounted in any convenient manner. For the purpose of illustrating this construction, I have shown a clamp 6 of the split-socket type resiliently engaging one end of the bundle of lengths 4. A rod 7 which extends to the usual adjustable mounting is secured in any desired way to the clamp 6.

While I have shown but one embodiment of my invention it will be apparent to those skilled in the art that various changes and modifications may be made in the apparatus illustrated without departing from the spirit and scope of my invention, as set forth in the appended claims.

I claim as my invention:

1. In a detector, a wire bent upon itself to form a plurality of parallelly extending lengths and wound around said bent portions to additionally reinforce the same.

2. In a detector, a wire of the "cat-whisker" type bent upon itself to form a plurality of parallelly extending lengths and wound around said bent portions to additionally reinforce the same, one end of said wire extending beyond said lengths to constitute a contact member.

3. A rectifier comprising a sensitive crystal, an aluminum wire, the wire being bent upon itself whereby a portion thereof is reinforced, a clamp engaging one end of the reinforced portion, said wire having a bend beyond the other end of the reinforced portion, the rounded portion of said bend contacting the crystal,

4. In a detector of the contact type, a wire having insufficient stiffness for a single length thereof to sustain effective contact pressure, said wire being so bent as to form a plurality of mutually reenforcing lengths.

5. In a detector of the contact type, a wire having insufficient stiffness for a single length thereof to sustain effective contact pressure, said wire being so bent as to form a plurality of contacting and mutually reenforcing lengths.

6. In a detector of the contact type, a wire having insufficient stiffness for a single length thereof to sustain effective contact pressure, said wire being so bent as to form a plurality of contacting and mutually reenforcing lengths, and a contacting end integral with one of said lengths.

In testimony whereof, I have hereunto subscribed my name this 20th day of June 1923.

EARL J. HAVERSTICK.