

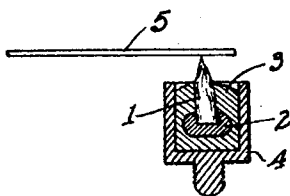
Oct. 18, 1927.

1,645,523

H. M. DOWSETT

CRYSTAL DETECTOR OF ELECTRIC CURRENTS

Filed Dec. 18, 1920



By

Attorney

Inventor

HARRY M. DOWSETT

Draft Adams

UNITED STATES PATENT OFFICE.

HARRY MELVILLE DOWSETT, OF COLCHESTER, ENGLAND, ASSIGNOR TO RADIO CORPORATION OF AMERICA, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

CRYSTAL DETECTOR OF ELECTRIC CURRENTS.

Application filed December 18, 1920, Serial No. 431,800, and in Great Britain February 14, 1920.

The typical crystal detector consists of a small portion of some mineral, such as carborundum, zincite, molybdenum, etc., to which an electric connection is made over a wide surface on one part of it, usually by means of solder, and a second electrical connection is made at a point on another part by means of a steel pin, a plate resting on a point of the crystal, a metal wire, or the point of another crystal.

The object of this invention is to provide an improved connection of wide area.

According to this invention I make the surface connection by directly welding to the crystal steel, tungsten, brass, copper or some other suitable metal, whereby the conductivity of the detector, its rectification and stability of adjustment under the action of high voltage, are all very much improved.

In the case of carborundum a welded steel or tungsten contact gives better results than one of brass or copper, and it appears that the metal employed should preferably have a melting point equal to or greater than the temperature at which the crystal changes either its physical or chemical nature.

My invention is illustrated by the accom-

panying drawing which is a section through a crystal detector. A carborundum crystal 1 has welded to one end of it a piece of steel 2 and is set in solder 3 in a brass cup 4 by which it can be mounted as desired. The point connection is made between the point of the crystal and a steel plate 5. The piece of steel 2 is preferably formed on the crystal by dipping the latter into molten or semi-molten metal.

It is found that the solder can be made to cover any depth of the crystal up to a very small distance from the point contact without affecting the characteristic given by the unmounted steel-tipped crystal.

Having now particularly described the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A crystal detector comprising in combination a crystal embedded in steel, substantially as described.

2. In combination a detector comprising a crystal of carborundum embedded in steel, substantially as described.

HARRY MELVILLE DOWSETT.