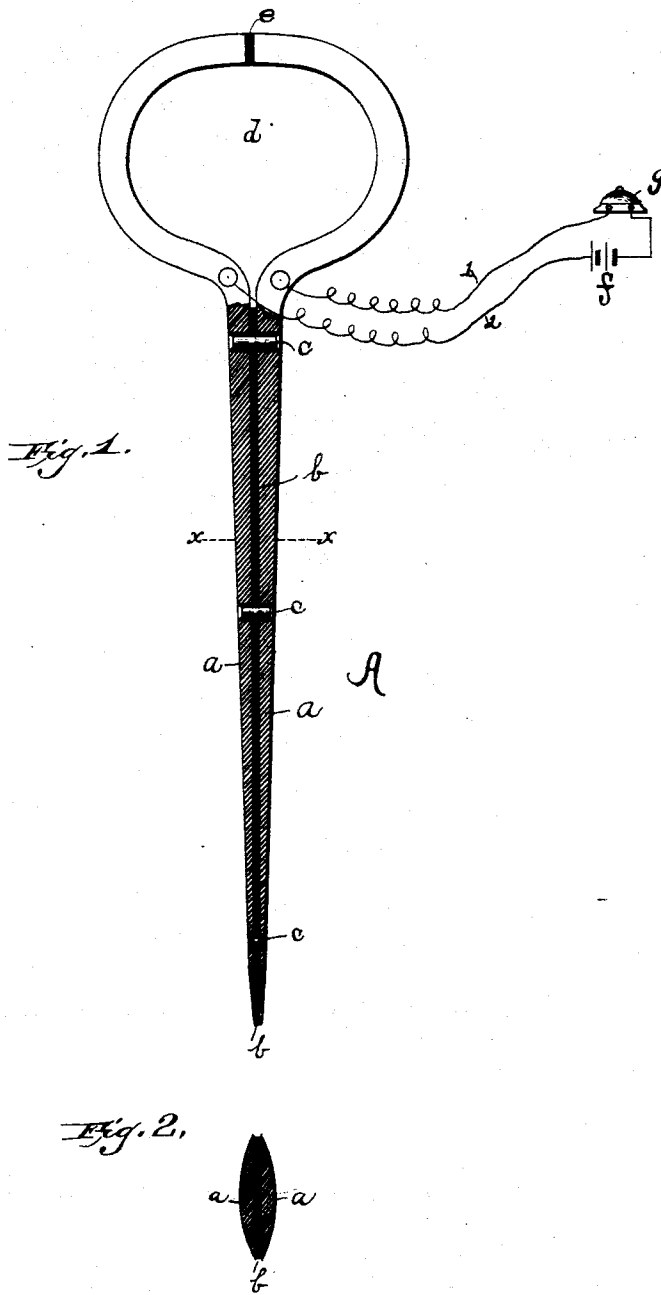


(No Model.)

J. F. KESTER.  
ELECTRICAL METAL DETECTOR.

No. 412,924.

Patented Oct. 15, 1889.



WITNESSES  
*Edwin I. Yewell.*  
*H. E. Peck.*

INVENTOR  
*J. F. Kester*  
*per O. E. Duff*  
Attorney

# UNITED STATES PATENT OFFICE.

JESSE F. KESTER, OF TERRE HAUTE, INDIANA, ASSIGNOR OF ONE-FOURTH TO OWEN E. DUFFY, OF WASHINGTON, DISTRICT OF COLUMBIA.

## ELECTRICAL METAL-DETECTOR.

SPECIFICATION forming part of Letters Patent No. 412,924, dated October 15, 1889.

Application filed January 29, 1889. Serial No. 297,957. (No model.)

*To all whom it may concern:*

Be it known that I, JESSE F. KESTER, of Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Electrical Metal-Detectors; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to a metal-finder for detecting the presence of metal—such as gold, silver, copper, &c.—and which can be used either for exploring the bottom of streams or for searching the earth, either at the surface or several feet below the same.

My invention consists in certain novel features of construction and combinations of parts, more fully described hereinafter, and particularly pointed out in the claim.

Referring to the accompanying drawings, Figure 1 is an elevation of the device, partly in section, showing the battery, indicator, and connections. Fig. 2 is a cross-section on line *x x*, Fig. 1.

In the drawings, the reference-letter *a* indicates two or more rigid conducting blades or contacts rigidly secured together and insulated from each other by non-conducting material *b*, and the bolts or rivets *c*, securing the blades and non-conducting material together, are insulated from the blades, as shown, to prevent the same from conveying electricity between the blades. The blades and insulating material are preferably so formed and constructed as to form a single rigid blade *A*, tapering downwardly to, or nearly to, a point, and provided at its upper end with a handle *d*, preferably, although not necessarily, formed integral with the separate conductors, communication between the blades *via* the handle being cut off by insulating-piece *e*.

Of course it is understood that the conducting-strips and insulating material are so secured together that the edges of the conducting material will project beyond the insulating material to allow metal or mineral

to come in contact with both edges, and thereby close a circuit between the same.

The separate blades are connected with opposite poles of a battery *f* by conductors *1 2*, and a bell or other suitable alarm or indicator *g* is included in the circuit, so that when the normally-open circuit is closed the alarm will be sounded.

It should be observed that the contacts or conducting portions of the blade *A* are so constructed that the moment the blade comes in contact with any metal the circuit will be closed through the conductors *aa*, said metal, wires *1 2*, the battery, and the bell sounding the same and notifying the operator that the finder is in contact with metal.

The device is more especially adapted for the use of prospectors and others searching for precious metals, the operator having simply to take hold of the handle and thrust the blade into the earth, and if it comes in contact with any metal, as before mentioned, the alarm will be sounded and the operator notified. The detector is exceedingly useful for searching the bottoms of streams and places hitherto inaccessible, and where the water contains such ingredients as to make it a good conductor a resistance can be placed in the circuit, so that the alarm or indicator will only be operated when the blade comes in contact with metal. It should also be stated that common fresh water is not a sufficiently good conductor to operate the alarm or indicator.

When the bottom of very deep waters are being explored, several of the devices can be placed in a group and suitably connected.

It is evident that various changes and modifications might be made in the form and arrangement of the parts described without departing from the spirit and scope of my invention; hence I do not wish to limit myself to the precise construction herein set forth, but consider myself entitled to all such changes.

What I claim is—

An electrical mineral-detector consisting of a solid elongated tapering blade composed of a pair of metal strips riveted securely together throughout their length and having their upper ends extended to form a handle,

said strips and extended ends being insulated from each other and the rivets insulated from the strips, the edges of the strips projecting beyond the insulating material, so that a circuit can be closed between the same, said strips adapted to form the terminals of a normally-open circuit, including an indicator, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JESSE F. KESTER.

Witnesses:

CHAS. M. WERLE,  
HUBERT EUGENE PECK.