

L. L. DUERDEN.
Electrical Circuit-Closer.

No. 163,753.

Patented May 25, 1875.

Fig. 1.

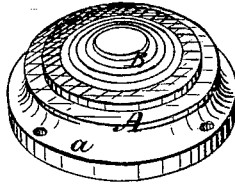
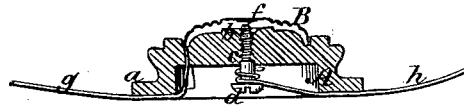


Fig. 2.



Witnesses:

E. W. Asick
W. B. Chaffin

Inventor:

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UNITED STATES PATENT OFFICE

LAWRENCE L. DUERDEN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN ELECTRICAL CIRCUIT-CLOSERS.

Specification forming part of Letters Patent No. **163,753**, dated May 25, 1875; application filed May 8, 1875.

To all whom it may concern:

Be it known that I, LAWRENCE LOUIS DUERDEN, of the city of Brooklyn, State of New York, have invented certain new and useful Improvements in Keys for Telegraphic and other Electrical Instruments, of which the following is a specification:

My invention consists of a telegraph-key of a novel structure. The moving part of the key, or that part by the movement of which contact is made and broken, consists of an elastic and flexible disk or diaphragm secured at its edges, and so formed that when pressed in one direction by the hand or other power, it will, by its own elasticity, when relieved of that pressure, recoil and resume its normal position. This disk is mounted on a non-conducting base, preferably of hard rubber or of some composition easily molded. The base is formed on top with an annular groove or recess, and the disk is secured at its edges to the body of the base, its edges entering the annular recess, and the joint being sealed with varnish or otherwise, thus constituting, with the base, the walls of a hermetically-sealed or air-tight chamber, in which are placed the contact points. These points are in this way sealed and protected against any chemical or mechanical action of the atmosphere, rain, moisture, or dust, and thus preserve unimpaired their efficiency as circuit-closers.

The elastic disk is preferably made of metal, and may, in itself, when brought in contact with the contact-point in the base, form part of the circuit; or it may be made of other suitable material, and provided with a contact-point having suitable connections to complete the circuit when the disk is depressed.

The nature of my invention and the manner in which the same is or may be carried into effect will be understood by reference to the accompanying drawing, in which I have represented one form of my improved key.

Figure 1 is a perspective view of the key. Fig. 2 is a vertical central section of the same.

A is the base formed with a flange, *a*, by which it may be secured to the operating-table, and with a recess or annular depression, *b*, in its top. It also has a recess, *c*, in its

bottom to receive the screw *d*, which is inserted centrally in the base, and extends up therethrough into the recess *b*. Over the base A is placed the elastic and flexible metallic disk or diaphragm B, secured by its edges to the walls of the recess *b*, and provided on its under face with a central contact-point, *f*, which comes directly opposite the contact-point on the end of screw *d*. This screw can be set nearer to farther from the disk, as described, in order to set the contact-points at the proper distance apart. One terminal wire, *g*, connects with the disk, the other, *h*, with the screw. When the disk B is depressed the contact-points will meet, and the circuit will be completed through the disk and screw. When, on the other hand, the disk is relieved from pressure, it will, by its own elasticity, recoil and resume its normal position.

Under the arrangement shown it will be noted that the contact-points are inclosed in a hermetically-sealed chamber, with the resulting advantages above indicated.

Having described my invention and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. A telegraph-key, the moving part of which (for making and breaking contact) consists of a flexible and elastic diaphragm or disk, secured at its edges to a suitable base, and operating substantially as herein shown and described.

2. The combination of the flexible and elastic metallic diaphragm or disk, the recessed base, to which said diaphragm is secured at its edges, and the contact-points, inclosed in a chamber formed by and between the disk and base, substantially as set forth.

3. A telegraph-key, in which the contact-points are contained in a chamber hermetically sealed, or practically so, to the atmosphere, substantially as set forth.

In testimony whereof I have hereunto signed my name this 30th day of April, A. D. 1875.

L. L. DUERDEN.

Witnesses:

JAMES F. ABRAMS,
GEORGE W. ASTON.