(No Model.)

R. VARLEY, Jr.

ELECTRIC CONTACT PROTECTOR.

No. 473,717. Patented Apr. 26, 1892.

Fig. 1.

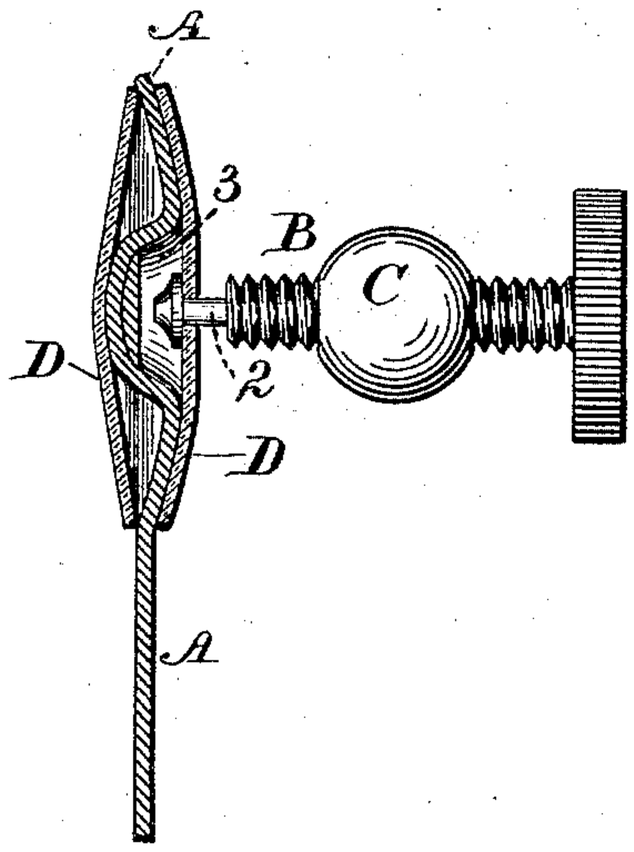


Fig. 2.

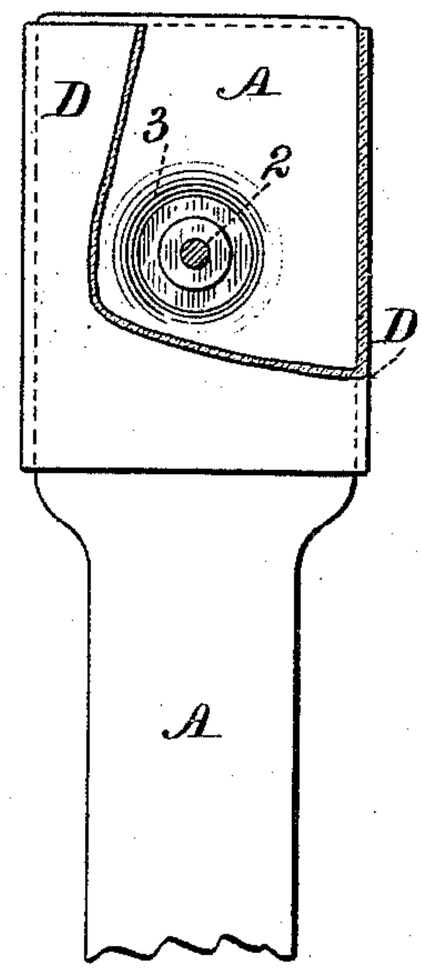
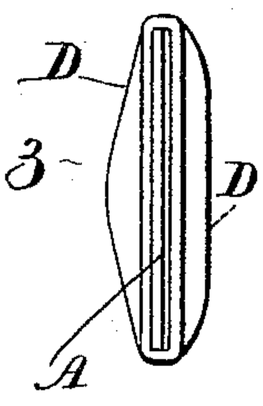


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

RICHARD VARLEY, JR., OF ENGLEWOOD, NEW JERSEY.

ELECTRIC-CONTACT PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 473,717, dated April 26, 1892.

Application filed July 7, 1891. Serial No. 398,667. (No model.)

To all whom it may concern:

Be it known that I, RICHARD VARLEY, Jr., a citizen of the United States, residing in Englewood, in the county of Bergen and State of New Jersey, have invented an Improvement in Electric-Contact Protectors, of which the following is a specification.

In Letters Patent No. 449,302, granted to me March 31, 1891, an elastic shield is placed over the electric contacts in such a manner as to exclude air and dust from such contacts, and thereby lessen the risk of the same becoming inoperative by the presence of oxide or of foreign substances. In devices made under this patent difficulty has been experienced in putting the parts together with sufficient facility and rapidity not to interfere with the cost of the electric alarm-bell or other structure, to the contact-points of which the improvement was applied.

My present invention is an improvement upon the aforesaid device, and relates to the combination, with one contact-point passing through the elastic shield, of a second contact over which a rubber band or septum is drawn, the second contact being in a recess, so that there is room for the head of the other electrode in the recess; but the rubber band or septum remains air-tight, or nearly so, around the contacts.

In the drawings, Figure 1 is an elevation of one of the electric contacts and a section of the rubber shield and of the other contact. Fig. 2 is a face view of one of the contacts with the rubber shield partially removed and with the other contact in section at its neck, and Fig. 3 is a plan view of the plate-contact.

It is to be understood that this improvement is available for the exclusion of atmosphere from the electric contacts upon finger-keys and many other electric instruments; but it is especially available upon the back-stop in electric alarm-bells, and these contacts are usually made between a plate or spring A and an adjusting-screw B, the latter passing through any suitable standard C, and the spring is generally upon or receives its motion from the armature of the bell.

The screw B is of any desired size; but there is a neck 2 turned or formed in the screw near the end thereof, and the rubber shield or septum D is perforated, so that the small button-shaped end of the screw B can be pressed through the elastic shield or septum, and such elastic material will contract around the neck 2.

The plate or spring A is recessed for the reception of the electrode, which is preferably in the form of a small platina plate introduced into such recess 3 and soldered to place, and it is advantageous to have the surface of the plate A convex or provided with ribs, in order that the surface of the rubber shield or septum, which is in contact with such plate or spring A, may set closely against such convex surface or projecting ribs and remain air-tight.

The elastic shield or septum is to be drawn sufficiently tight against the surface of the plate or spring A to be air-tight against the same, and any suitable device may be made use of in holding this rubber septum firmly against the surface of the plate or spring A. I prefer and find it convenient and cheap to make this shield or septum in the form of a thin flat rubber band of sufficient width, so that such band may pass around the end of the plate or spring A, the elastic material being stretched sufficiently as it is applied to the plate or spring to cause the said elastic shield to contract firmly against the face of the plate or spring. Hence in putting the parts together it is only necessary to draw back the screw B sufficiently for applying the elastic shield or septum around the end of the plate or spring A, with the small hole therein opposite the platina end of the screw B, and by a small fork or similar instrument between the septum and the plate or spring A the rubber can be forced over the button end of the adjusting-screw B, and then it will contract and become substantially air-tight against the face of the plate or spring A when such tool or fork has been withdrawn from behind the rubber.

It is advantageous to make the recess 3 sufficiently deep for the reception of the button head or end of the screw B, in order that the rubber septum may not be under strain in its normal position. Hence the electrodes can

be separated or brought into contact without the rubber septum exerting any obstructive force to the movement of the parts.

The button-head is generally preferably at the end of the one electrode; but the elastic septum contracts with sufficient force to prevent the separation of the parts under the small movement usual in electric instruments, even when the head is dispensed with.

I am aware that a ball of rubber has been used having within it separate conductor-plates, to which are affixed the conductors, and the circuit has been closed by a movable plate, also within the ball. Hence my invention does not relate, broadly, to the circuit-closing devices protected by a rubber envelope.

I claim as my invention—

1. Two electrodes, one of which is recessed in line with the other electrode, in combination with an elastic septum through which one electrode passes and which septum sets tightly against the raised surface of the other electrode, substantially as specified.

2. The combination, with an elastic septum in the form of a band, of an electrode made as a plate introduced into the elastic band and the opposite electrode having a neck, the elastic septum surrounding the neck and lying close upon the surface of the electrode-plate, substantially as set forth.

3. An electrode plate or spring having a recess and a plate of platina or similar metal secured in the base of the recess, in combination with an elastic septum secured to the face of the plate, and an adjusting-screw having a neck near the end and passed through the elastic septum into the cavity of the plate, substantially as set forth.

4. An electrode formed of a plate of metal recessed and having a convex or projecting surface around the recess, in combination with an elastic band passing around such plate and drawn tightly upon the convex surface to form an air-tight septum and perforated in line with the recess, and an electrode having a neck and a head within the recess and the elastic material surrounding the neck, substantially as set forth.

Signed by me this 1st day of July, 1891.

R. VARLEY, JR.

Witnesses:
GEO. T. PINCKNEY,
WILLIAM G. MOTT.