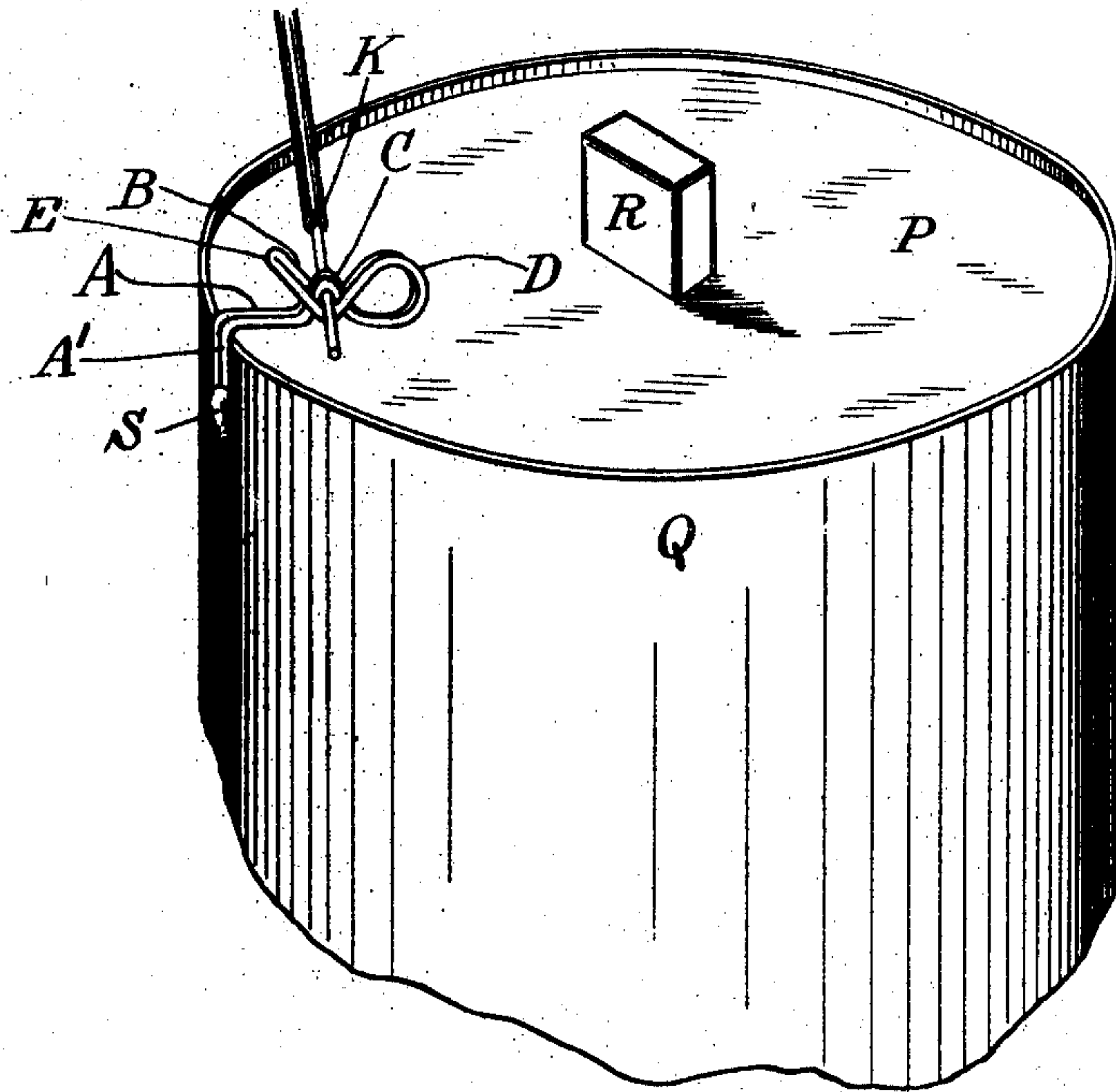


J. SCHADE, JR.
SPRING FASTENING DEVICE.
APPLICATION FILED AUG. 12, 1910.

985,288.

Patented Feb. 28, 1911.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN SCHADE, JR., OF NEW YORK, N. Y., ASSIGNOR TO FAHNESTOCK ELECTRIC COMPANY, A CORPORATION OF WEST VIRGINIA.

SPRING FASTENING DEVICE.

985,288.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Original application filed December 13, 1906, Serial No. 347,577. Divided and this application filed August 12, 1910. Serial No. 576,872.

To all whom it may concern:

Be it known that I, JOHN SCHADE, Jr., a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Spring Fastening Devices, of which the following is a specification accompanied by drawings.

10 This invention relates to an improved form of spring fastening device for electrical conductors, particularly adapted for application to a dry battery, although the device may be used in any connection in which it is found applicable.

15 This application is a division of my co-pending application Serial No. 347,577, filed December 13, 1906, for spring fastening device.

20 The type of fastening device which I have designed for a dry battery, in addition to its other advantages in combination with the dry battery, enables a conductor to be firmly gripped and clamped in defined position, 25 permits the ready insertion and removal of the conductor, and insures good electrical contact at all times between the conductor and the fastening device.

30 The zinc containing shell of a dry battery also forms one of the elements or electrodes and it is necessary to attach the binding post or fastening device directly to said element. If an ordinary binding post is merely fastened to a dry battery, the post will project 35 outwardly from the side of the battery and when a number of cells are used in conjunction, the binding post of one cell is liable to contact with that of another and ruin the batteries. The projecting posts are also apt 40 to be broken off in packing and in shipment.

One of the objects of my construction is to prevent any part of the fastening device from projecting outside of the outer periphery of the cell. The liability of short circuits between binding posts on different cells is thus reduced to a minimum and the posts are not liable to be broken off in use. It is also much easier to manipulate the fastening device in my construction since the pressure 50 exerted to open the fastening device is downward instead of sidewise.

Further objects of the invention will hereinafter appear and to these ends the invention consists of means for carrying out the

above objects embodying the features of construction, combinations of elements and arrangement of parts having the general mode of operation substantially as hereinafter fully described and claimed in this specification and shown in the accompanying 60 drawing which is a perspective view of a device embodying the invention.

My improved fastening device is preferably made from a single piece of resilient material, as for instance, metallic wire, 65 although I am not to be understood as limiting my invention to this particular form of material, for other forms of resilient metal may be found suitable for carrying out the invention. Obviously the device 70 may be made out of a single piece of material, or it may be made out of several pieces, if desired, and I am not to be understood as limiting the invention to a fastening device comprised of a single piece of wire. 75

The fastening device comprises broadly two opposing normally separated members, and a retaining resistant portion of suitable shape projecting toward the opposite member and adapted to co-act therewith to firmly 80 clamp a conductor in defined position when said members are forced into operative relationship.

In order to construct two opposing normally separated members, the piece of wire, 85 if the device is made from one piece, is bent upon itself to bring one member opposite the other and the two legs A may be termed the body member. The body member is adapted to be fixed in stationary position, 90 while the opposing member, comprising the legs B is adapted to be forced out of its normal position toward the body member, from which it tends to separate under the retractive force of the spring, thus enabling 95 a conductor K to be firmly gripped and clamped in defined position between the spring member B and the stationary resistant or retaining portion comprising the bent portions C of the legs A or body 100 member.

The retaining portion C of the body members forms a stationary resistant member, so constructed and shaped that a conductor is held therein and firmly gripped in defined 105 position in such manner that it cannot easily be withdrawn in a transverse direction while under the influence of the pressure of the

spring. I have found that a substantially V-shaped retaining portion C, forming the resistant member fulfils the objects sought when combined with the other cooperating elements of my improved fastening device. I mean by a V-shaped portion, a part having diverging sides and having the general conformation of a V so that a conductor of suitable size when inserted in the angle of the V will make contact at at least two tangential points in the V.

The wire, as shown, is looped on itself to form a spring at D and one end E of the spring member is bent in the reverse direction to the loop D to form with the bend of the loop an angular retaining portion. Preferably the angles at the bends of the retaining portions for the wire are less than a right angle or approach as nearly as possible to an acute angle.

As shown, the apex of the angle of the resistant member V projects upward from the body member A toward the spring member and is adapted to co-act with said spring member to clamp a conductor in defined position therein when said members are forced into operative relationship.

The fastening device in accordance with this invention is intended to be secured directly to the outer shell of the battery. A dry battery is represented at P, having the outer and inner electrodes Q and R. In accordance with this invention both legs A of the body member of the fastening device are bent at an angle to the general direction of the body member and adapted to be secured directly to one electrode Q as for instance by means of solder S. Any other suitable means may be used for securing the legs A to the shell Q of the battery. The zinc shell Q contains the composite parts of the battery and forms one of the elements thereof. The bent leg A' of the fastening device is fastened to the zinc shell Q outside of the upper edge, thus locating the other component parts of the fastening device substantially within the area described by the outer periphery of the shell.

My peculiar construction of binding post is especially adapted to the construction of a dry battery, so that no part of the post projects outside of the outer periphery of the cell. It is much easier to manipulate the fastening device on top of the battery

than at the side, since the pressure exerted to open the fastening device is downward instead of sidewise. The utility of the invention is apparent in packing the batteries for shipment and in preventing the connection on one battery touching the connection on another battery where a plurality of batteries are used side by side. This latter consideration is important, because if the connections are allowed to touch, the battery is short circuited and ruined. Since a plurality of batteries of this type are usually used in one installation, it is extremely important that care be taken to prevent the connections from coming in contact.

I claim and desire to obtain by Letters Patent the following:

1. In combination, a dry battery comprising a zinc shell containing the composite parts of the battery and forming one of the elements thereof, and a spring fastening device formed of resilient metal and comprising a body member, a spring member and a resistant member, said body member being bent at substantially a right angle near its free end to form an attaching leg, and said leg being fastened to the zinc shell at the upper edge, thus locating the other component parts of the fastening device substantially within the area described by the outer periphery of the shell.

2. In combination, a dry battery comprising a zinc shell containing the composite parts of the battery, and forming one of the elements thereof, and a spring fastening device formed of resilient metallic wire and comprising a body member, a spring member, and a resistant member, said body member being bent at substantially a right angle near its free end to form an attaching leg, and said leg being fastened to the zinc shell at the upper edge, thus locating the other component parts of the fastening device substantially within the area described by the outer periphery of the shell.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN SCHADE, JR.

Witnesses:

ERNEST B. FAHNESTOCK,
JOHN SCHADE.