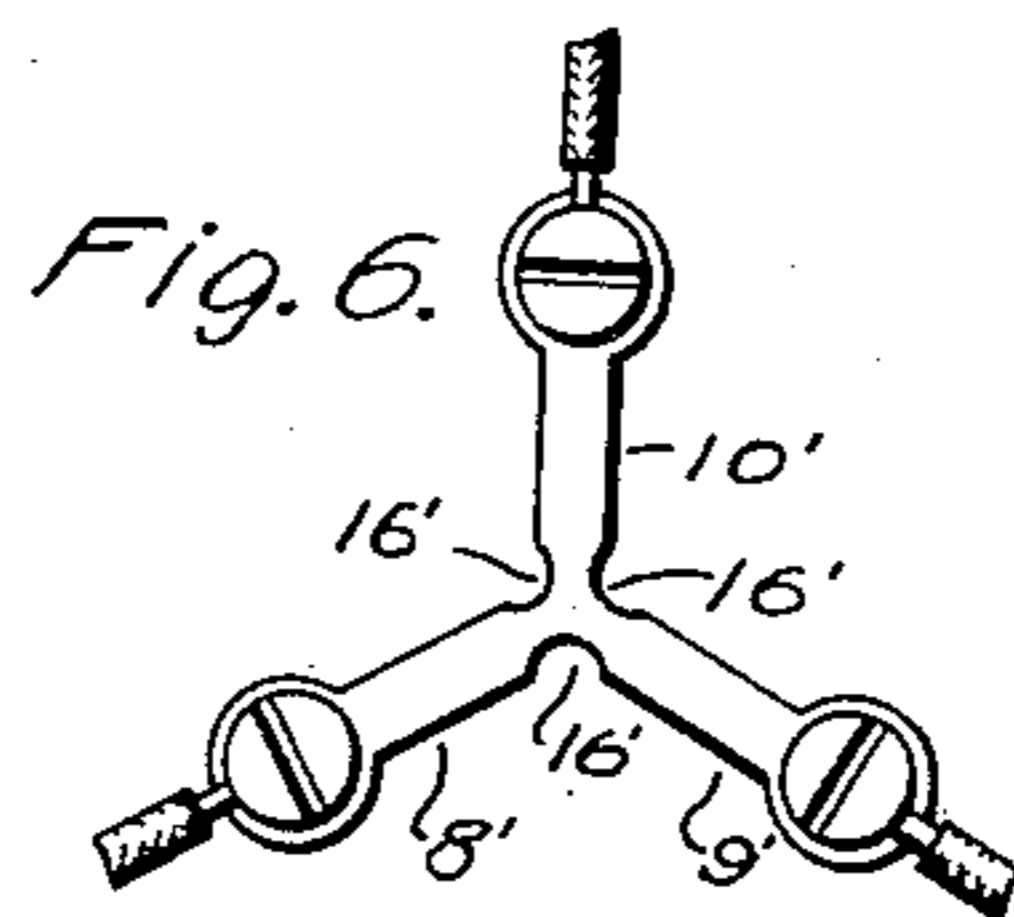
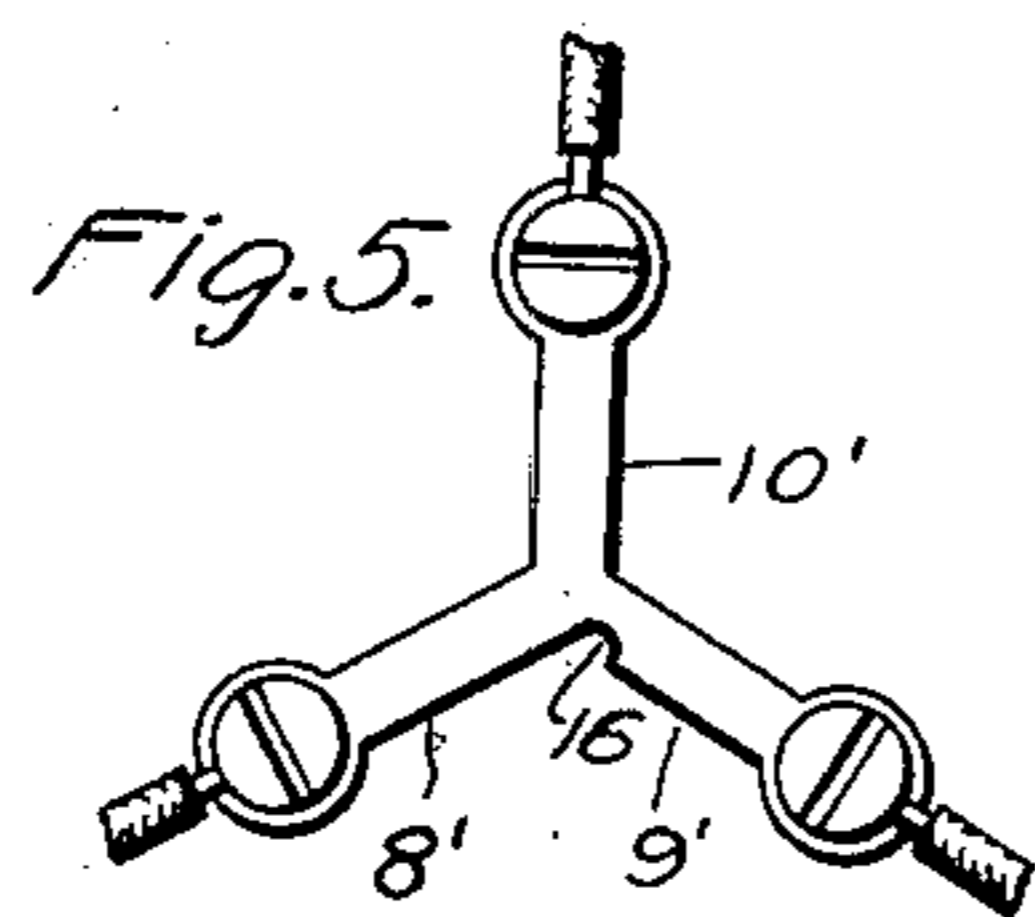
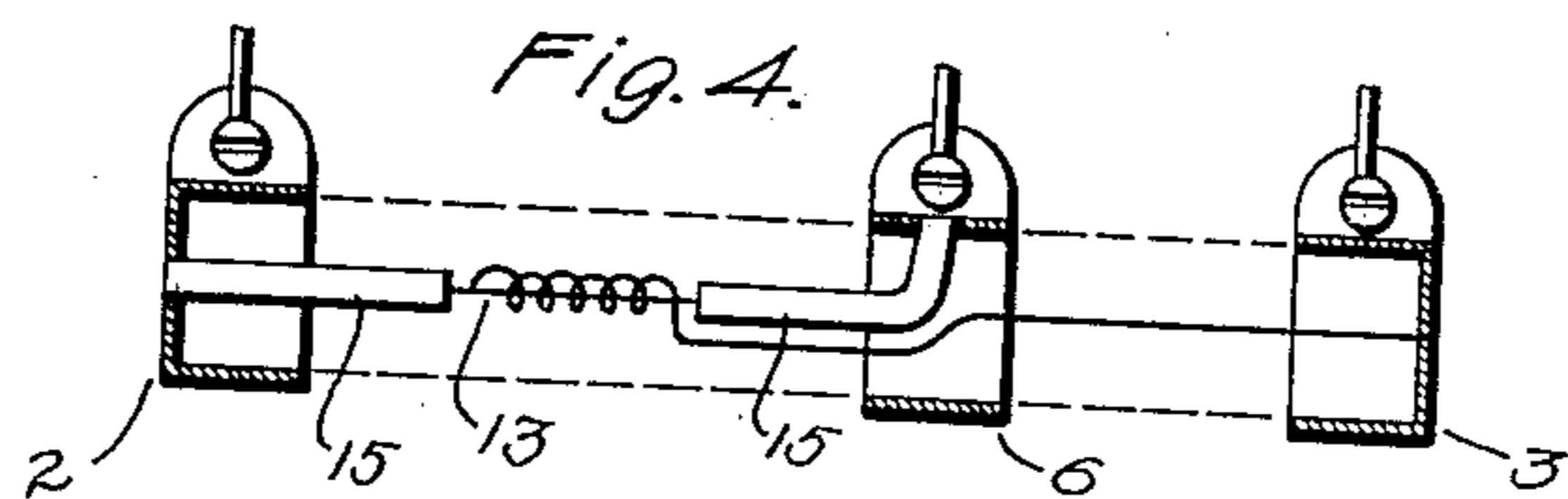
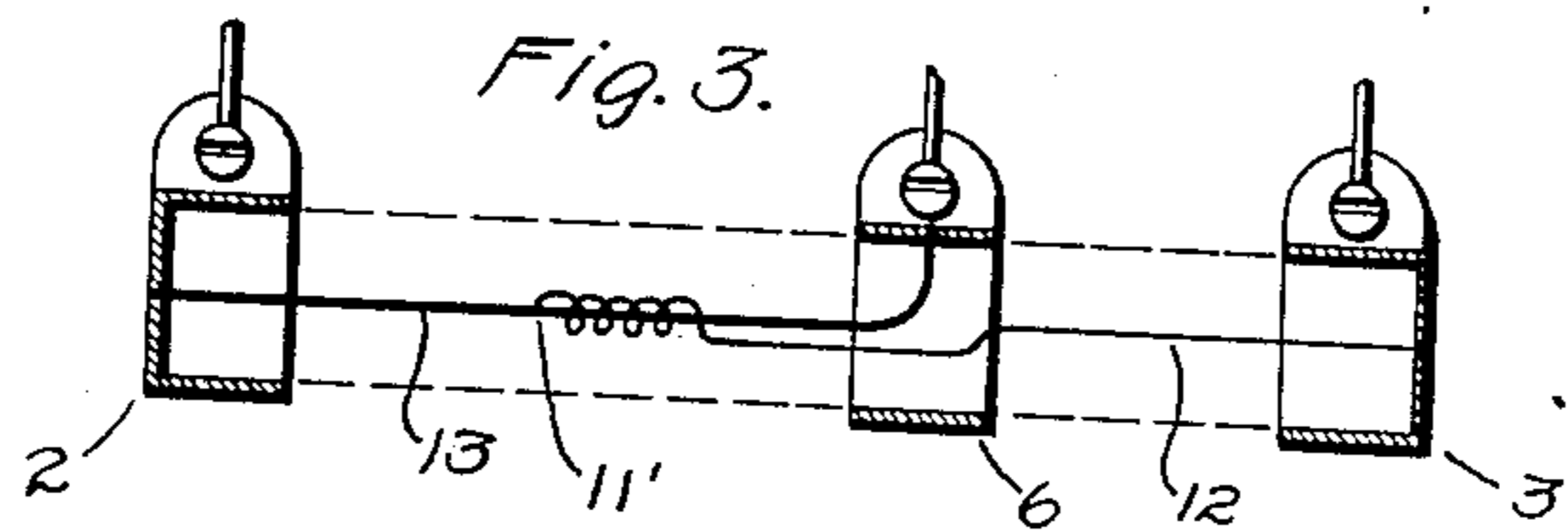
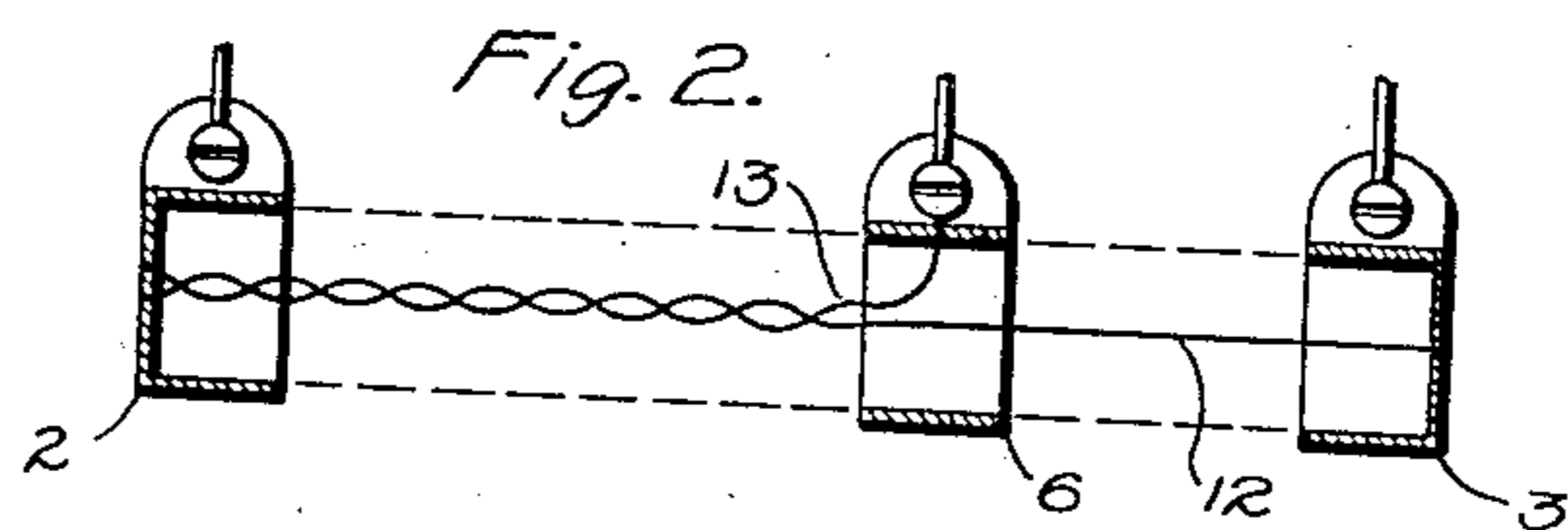
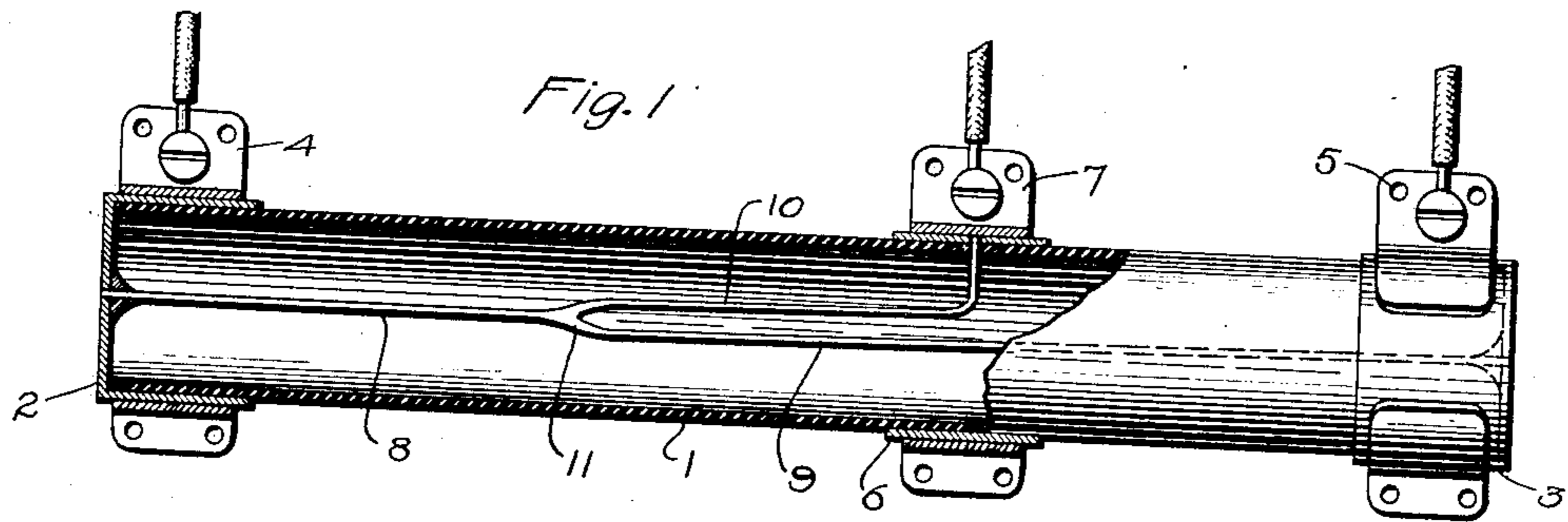


W. B. POTTER.
ELECTRIC CUT-OUT.
APPLICATION FILED JAN. 5, 1905.

921,732.

Patented May 18, 1909.



Witnesses:
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Att'y.

UNITED STATES PATENT OFFICE.

WILLIAM B. POTTER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ELECTRIC CUT-OUT.

No. 921,732.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed January 5, 1905. Serial No. 239,758.

To all whom it may concern:

Be it known that I, WILLIAM B. POTTER, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Electric Cut-Outs, of which the following is a specification.

The present invention relates to cut-out devices for use in protecting electric circuits and apparatus from the injurious effects of excessive currents, and the object of the invention is to provide a device of this character for use in connection with a plurality of interconnected circuits whereby upon the occurrence of an excessive current in any one circuit all will be automatically interrupted.

In the present application of my invention I provide a thermal cut-out having three or more branches depending upon the number of connected circuits, which are either directly united or disposed in proximity to one another so that upon the occurrence of abnormal current in any one branch the point of union between the several branches will be fused, or the heat evolved at the melting of the branch carrying the excessive current will be communicated to the other branches and disrupt them also.

For a more complete understanding of the invention reference may be made to the following detailed description and the accompanying drawing forming a part of this specification, in which—

Figure 1 is a part elevation and part longitudinal section of a fuse cartridge provided with a three branch fusible element with a common union; Fig. 2 is a diagrammatic arrangement of fuse terminals with the branches of the fusible element arranged in proximity to each other; Fig. 3 is a similar view with the branches of the fusible element of different conductivities, having a common union and arranged in proximity to each other; Fig. 4 is a similar view with two of the branches of the fusible element provided with thick end sections; Fig. 5 shows a sheet metal fuse with three branches, one of which is reduced in section near the point of union to insure the disruption of that branch slightly in advance of the disruption of the union; and Fig. 6 shows a similar construction with all the branches reduced near the point of union.

The inclosing shell which is of ordinary

construction consists of an insulating tube 1 inclosed at the ends by metallic thimbles 2 and 3 which make contact with suitable line terminals 4 and 5, and the space within the shell may be filled with suitable material for absorbing or condensing the gases evolved upon blowing of the fusible members. In addition to the thimbles 2 and 3 at the ends of the tube a metallic contact ring 6 is mounted on the exterior of the tube intermediate the ends and makes contact with a third line terminal 7. The fusible element, as shown in Fig. 1, consists of three branches 8, 9, 10, connected at a common union 11. The branches 8 and 9 are connected in the usual manner to the end thimbles 2 and 3 and branch 10 is arranged to lie parallel to branch 9 for a short distance and is extended radially through the side of the tube 1 and soldered to the ring 6.

In the arrangements shown in Figs. 2, 3 and 4 the tube 1 is provided with end thimbles 2 and 3 and side ring 6 as in Fig. 1. In Fig. 2 the fusible element consists of a long wire 12 and a shorter wire 13 both connected at one end to thimbles 2, and coiled about each other for a considerable portion of their length to insure the disruption of one by radiation of heat from the blowing of the other and their opposite ends are respectively connected to ring 6 and thimble 3. In the arrangement shown in Fig. 3 the wire 13 is of greater diameter than wire 12 to allow a greater volume of current to flow between thimble 2 and ring 6 than between either of the latter and thimble 3, and the wire 12 is connected with wire 13 at 11' and coiled about it a few times to insure the melting of the latter by the relatively small amount of heat evolved upon blowing of the smaller wire. In Fig. 4 the wire 13 is provided with heavy end sections 15 to insure the blowing thereof in the middle section and the other wire 12 is arranged as above described in connection with Fig. 3.

In the form shown in Fig. 5 the fuse consists of soft sheet metal with the several branches 8', 9', 10', radiating from a common center and provided at their free ends with means for connection in circuit, and in order that one branch may blow at a definite point and slightly in advance of the disruption of the other branches under equal distribution of current a recess 16 is formed in the edge of

the branch designed to blow first and near the point of union with the other branches.

The form of fuse shown in Fig. 6 is similar to that shown in Fig. 5, but instead of providing only one branch with a reduced section, all branches are reduced alike by recesses 16' between each pair of branches near their junction.

While I have illustrated my cut-out with three branches it is apparent that any number may be employed according to the number of interconnected circuits it is desired to protect thereby.

I do not desire to restrict myself to the particular form or arrangement of parts described and shown, since it is apparent that they may be changed and modified without departing from my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. An electric fuse having branches for connection to three or more conductors, said branches being arranged in juxtaposition with each other whereby the act of blowing

of any branch will effect the blowing of all the other branches.

2. An electric fuse having three or more integrally connected branches, and means for connecting conductor wires to each branch.

3. An inclosed fuse provided with three or more external contacts and three or more integrally connected fusible branches respectively connected to said contacts.

4. An inclosed thermal cut-out comprising an insulating tube provided at each end with a contact thimble and intermediate its ends with a third contact, and a fusible member located within said tube and having connected branches respectively connected to said contacts.

In witness whereof I have hereunto set my hand this 4th day of January, 1905.

WILLIAM B. POTTER.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.