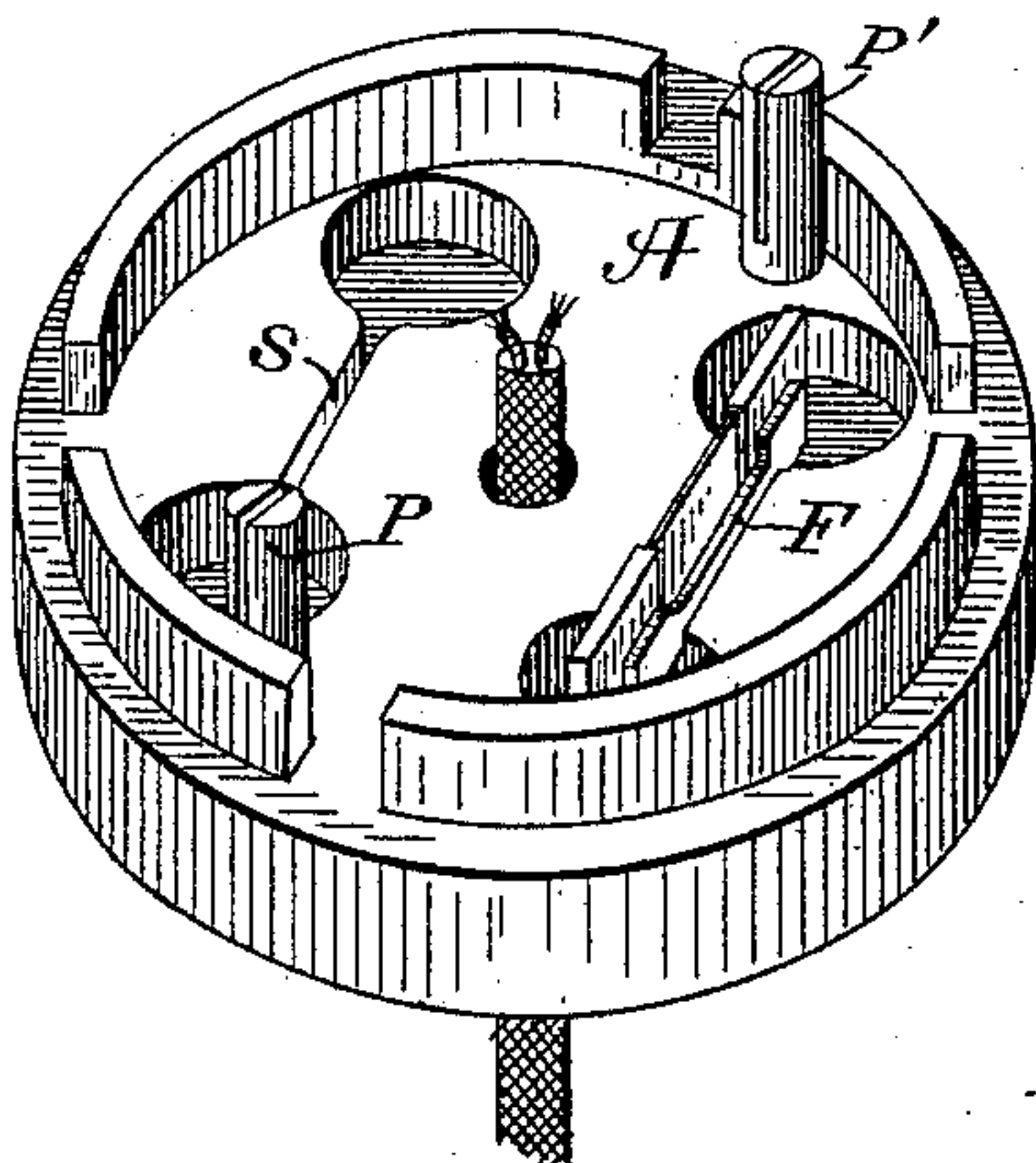
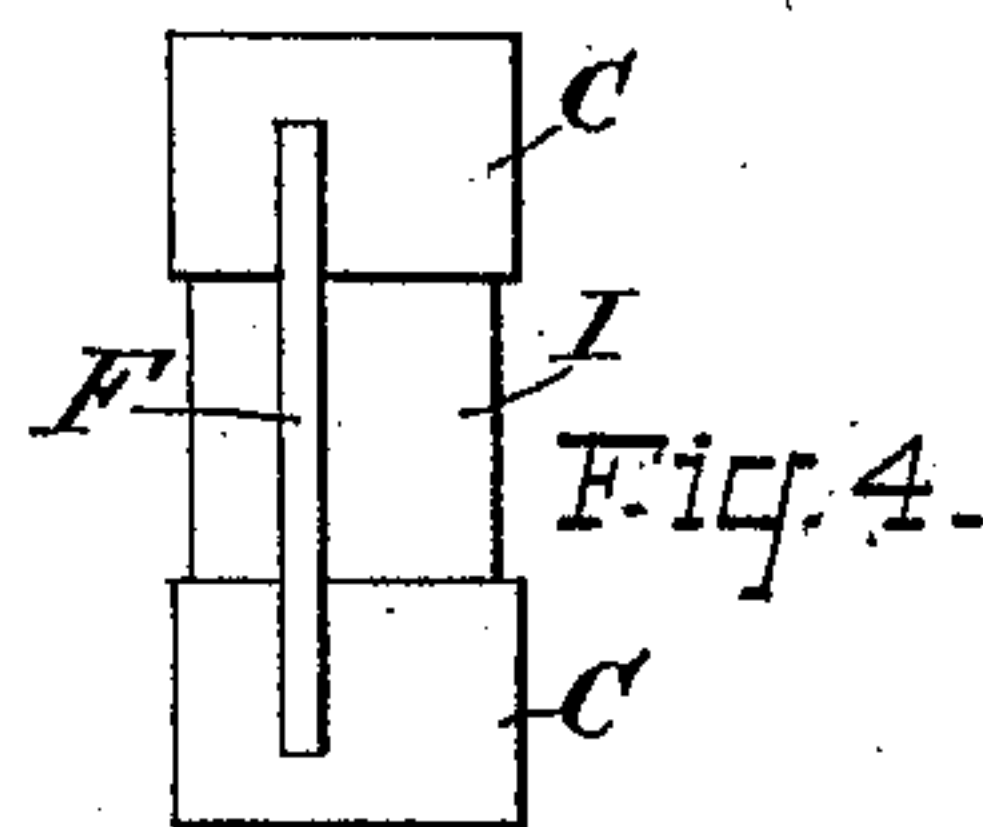
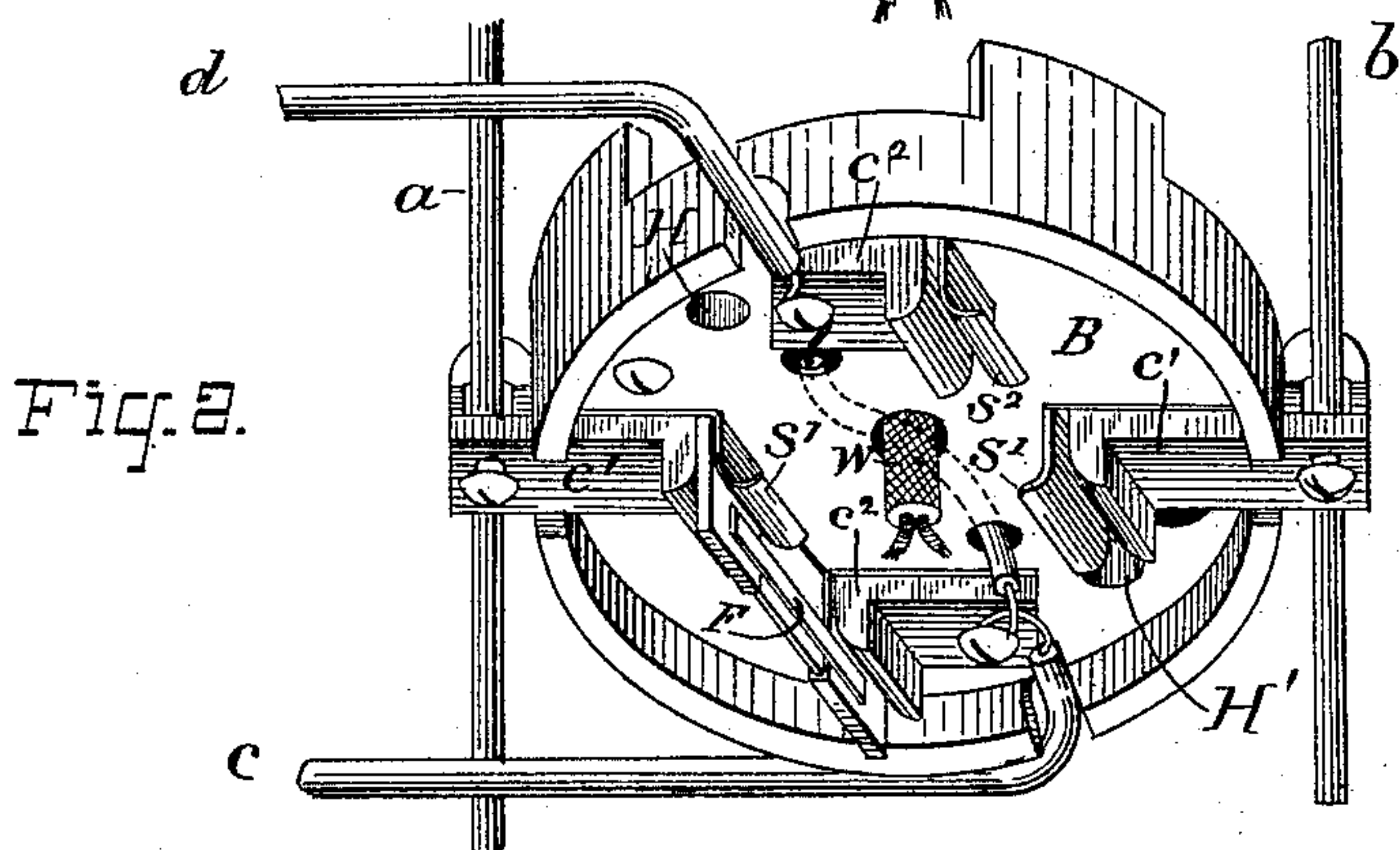
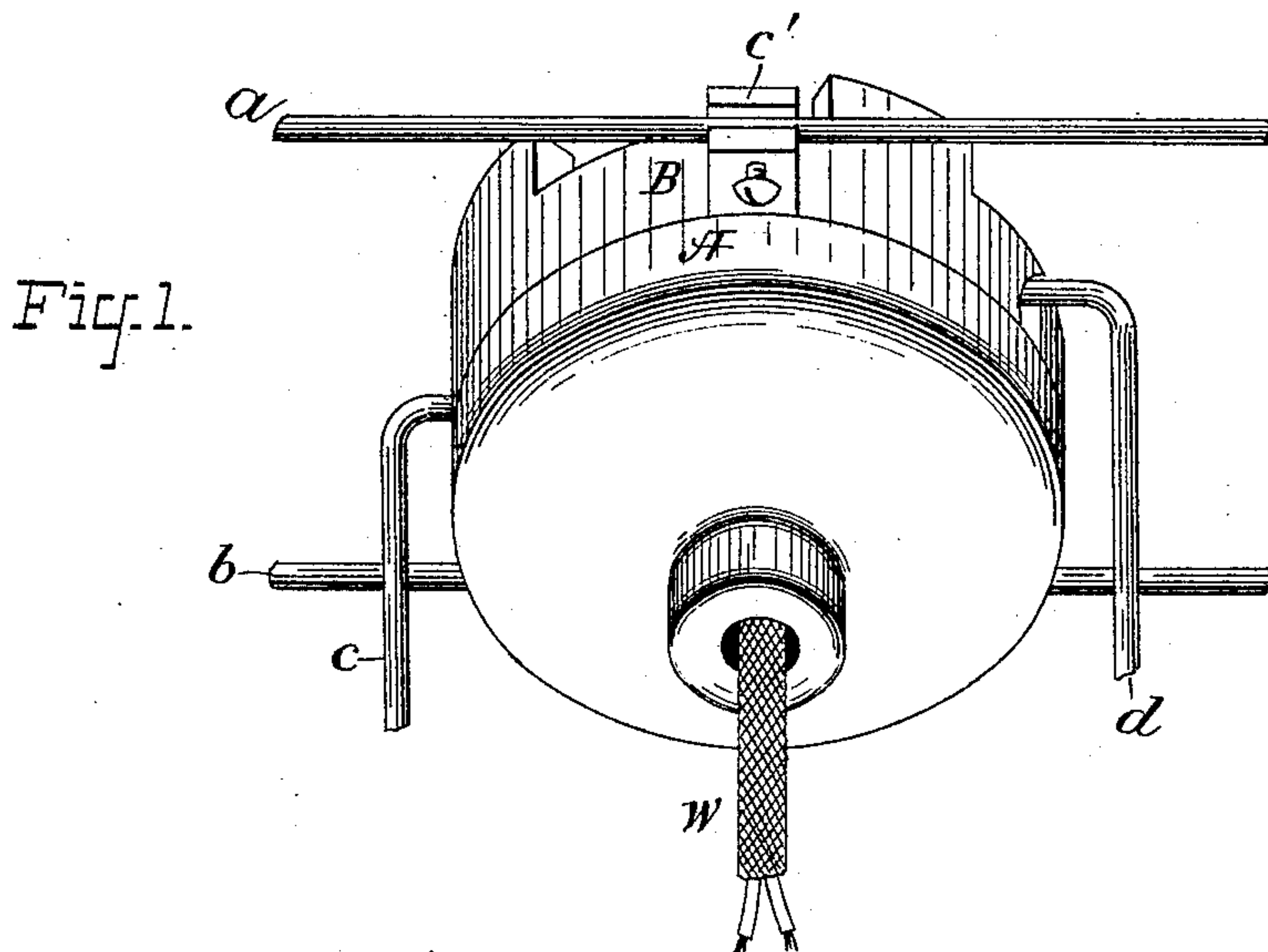


(No Model.)

G. H. ALTON & E. W. RICE, Jr.
ELECTRIC CUT OUT.

No. 440,685.

Patented Nov. 18, 1890.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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ELECTRIC CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 440,685, dated November 18, 1890.

Application filed November 21, 1889. Serial No. 331,128. (No model.)

To all whom it may concern:

Be it known that we, GEORGE HENRY ALTON and EDWIN WILBUR RICE, Jr., citizens of the United States, and residents of Lynn, in the county of Essex and State of Massachusetts, have invented a certain new and useful Cut-Out, of which the following is a specification.

Our invention consists in the combination, with a safety-fuse device consisting, essentially, of the fuse-wire mounted between contact-plates or terminals carried by an insulating plate or strip, of safety-fuse clips or electrodes made as spring-jaws, which project perpendicularly from their support, so that their mouths or openings will be presented in proper position to permit a fuse device to be slipped in edgewise between them by movement of such fuse bodily toward the support upon which the jaws are mounted.

In the accompanying drawings we have illustrated a form of apparatus embodying the invention.

Figure 1 is a perspective view of the apparatus in position between the main and branch wires with the fuse-receiver or shield applied. Fig. 2 is a perspective view of the base with the cap or shield which forms the receiver removed. Fig. 3 is a perspective view of the inner side of the receiver, and shows the means that may be employed for temporarily holding the fuse, so that by mere application of the receiver to the base the fuse will be placed in connection with the electrodes on the latter and in circuit between them. Fig. 4 is a plan of a fuse-blank embodying our invention.

B is a base of wood or other suitable material, preferably insulating, upon which the fuse-clips, electrodes, or connectors for the fuse are mounted. These electrodes are here shown at $c' c' c^2 c^2$ as formed with spring-jaws $s' s' s^2 s^2$, and having their spring ends projecting outward from the base, and between which a flat fuse strip or plate may be forced edgewise. The holders $c' c'$ extend laterally beyond the confines of the base for attachment of the main wires $a b$. Connection might be made in any other way without departing from the invention. Wires or con-

ductors W in a cable or flexible cover extend from the blocks or electrodes $c^2 c^2$ for connection to a suspended lamp or other apparatus.

The fuse blank or strip is constructed, as shown in Fig. 4, in plan and in edge view in Figs. 2 and 3. It consists of a strip or sheet of insulating material I, preferably of mica, having contact plates or pieces of conducting material C C, fastened to and sustained by the plate I, and a fuse-wire F, attached to the contact ends C C and sustained wholly by them, such fuse-wire being preferably soldered to the ends. We prefer to make the sheet I from mica in one or more sheets and to employ for the contact C sheet-copper, which is wrapped around the mica-sheets and holds them together. The contact ends C are made wide, as shown, so that they may be inserted between the spring jaws or clips mounted on the base B. In case the fuse is destroyed the plate I with the attached copper ends may be removed and a new one inserted in place. The one removed may have a new fuse-wire soldered to it, and may then be used again. It is easy to remove and insert the fuse strips or blanks from or into the clips or holders by taking hold of the sheet of insulating material I without danger of burning the fingers by contact with the fuse or with the conducting-clips.

The fuse-wire F is sustained wholly by the contact ends C, and the sheet I has the function only of forming a common support for the contacts C C, and permitting them to be handled together in connection with the fuse-wire F, as a single complete structure when it is desired to place a fuse-wire F into an electric circuit between clips, holders, or electrodes, or to remove it from its position of connection with such holders or electrodes. For convenience of insertion and removal we prefer to make the spring clips or jaws project at right angles from the supporting-base B. This arrangement of the jaws is especially desirable when the receiver for the safety-fuse blanks is employed.

The receiver A is formed as a cap or shield, preferably of insulating material entirely, and is at points S provided with slots adapted

to receive and support temporarily a fuse blank or strip, such as is shown in Fig. 4, until the receiver or shield can be applied to place over the fuse electrodes with the fuse terminals C C in connection with the electrodes in the base B.

To guide the receiver so that the fuse in position thereon shall register with the contacts or electrodes S' S² S' S² when the receiver is applied, we provide suitable guides—such, for instance, as pins P P' and sockets or holes H H'—one in the receiver and the other in the base. The pins may be slotted at their ends so as to hold the receiver in place by lateral spring-pressure. When a fuse is destroyed, it is removed from the base and a new one applied to the receiver A in the slot S.

When the receiver A is forced into position, the outer ends of the fuse enter edgewise between the spring-clips of the fuse electrodes or holders, thus placing the fuse in the electric circuit.

What we claim as our invention is—

1. The combination, with two pairs of fuse-clips, each consisting of spring-jaws which project perpendicularly to their base so as to present their mouths or openings outwardly, of a fuse-blank comprising a plate of insulating material having conducting ends to which a fuse-wire is electrically connected, said fuse being adapted to be forced into the clips or holders with its conducting ends in contact therewith by bodily movement of such fuse toward the plate or support carrying the clips.

2. The combination, with a fuse-strip

mounted on a plate of insulating material having conducting ends, of fuse-electrodes mounted on a suitable support and provided with spring clips or jaws, the mouths of which open outwardly, and a fuse receiver or holder provided with means for temporarily holding the fuse in proper position to adapt it to have its conducting ends inserted between the pairs of jaws, respectively, on movement of the receiver bodily toward the electrode-support into position over the fuse-electrodes, as and for the purpose described.

3. The combination, substantially as described, of the base B, pairs of spring clips or jaws projecting outwardly from such base with their mouths or openings in position to receive the fuse, a fuse-blank consisting, essentially, of a thin piece of insulating material provided with conducting ends upon which the fuse is supported, and a cap provided with means for holding the fuse in position edgewise upon it, so that upon application of the cap over the base the fuse will be forced edgewise between the conducting-jaws for the clips with the contact ends of the insulating strip or plate in contact with said jaws.

Signed at Lynn, in the county of Essex and State of Massachusetts, this 18th day of November, A. D. 1889.

GEORGE HENRY ALTON.
EDWIN WILBUR RICE, JR.

Witnesses:

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