

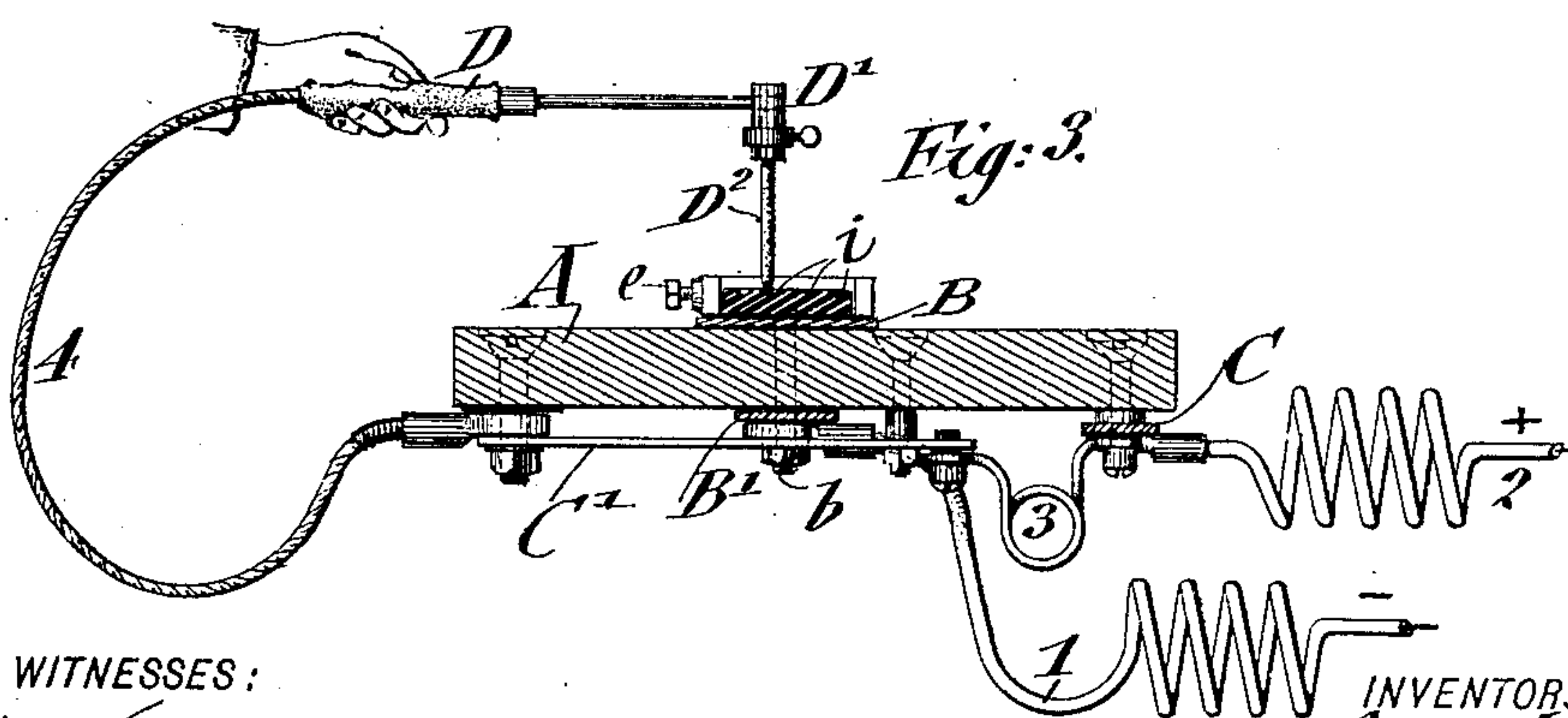
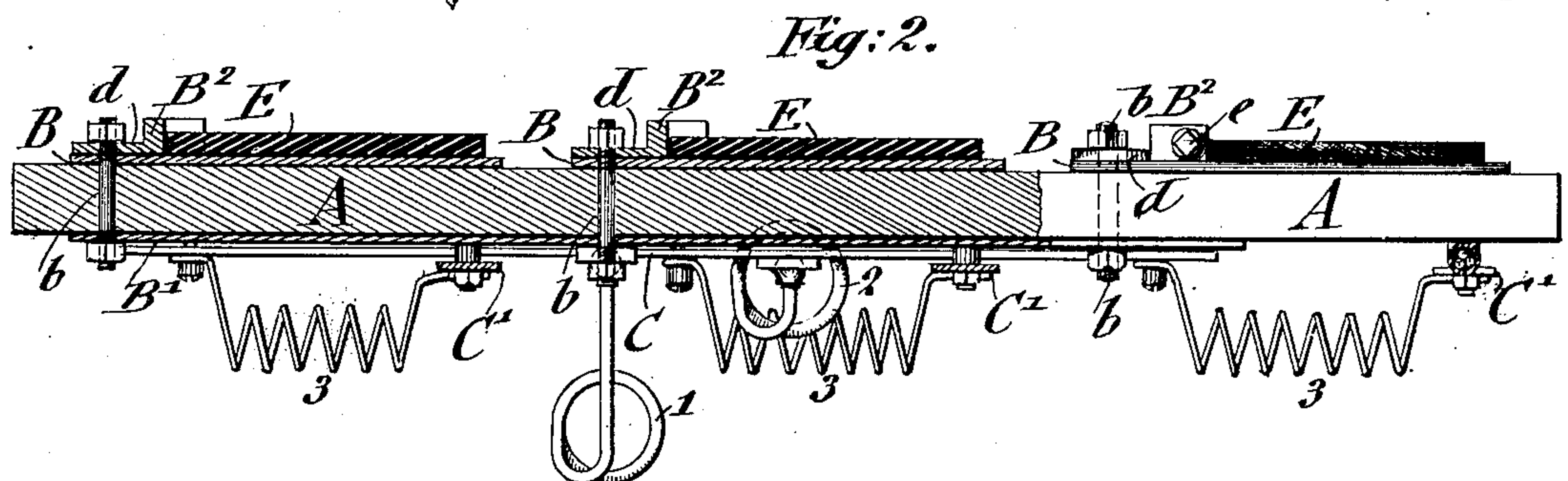
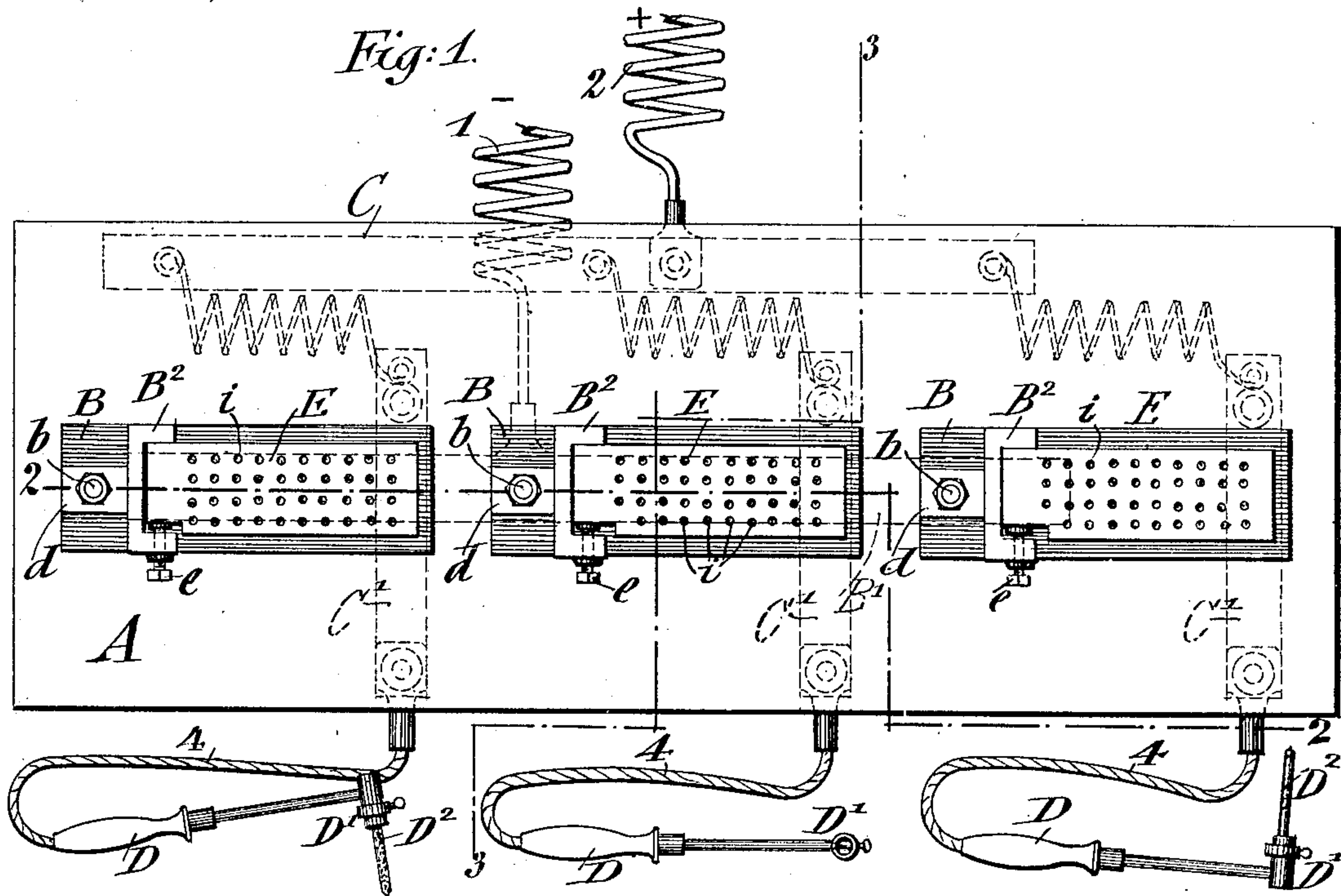
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Patented Jan. 8, 1901.

G. ARMENY & W. C. MARION.
APPARATUS FOR MELTING IRIDIUM.

(Application filed Nov. 15, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR MELTING IRIDIUM.

SPECIFICATION forming part of Letters Patent No. 665,717, dated January 8, 1901.

Application filed November 15, 1900. Serial No. 36,572. (No model.)

To all whom it may concern:

Be it known that we, GYULO ARMENY, residing in New York, borough of Bronx, in the State of New York, and WILLIAM C. MARION, residing in Arlington, in the county of Hudson and State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Apparatus for Melting Iridium, of which the following is a specification.

This invention relates to apparatus for melting iridium in small quantities with or without a small percentage of another metal or metals for attachment to the nibs of gold pens, the melting being accomplished by the heat of the electric arc; and the invention consists of an apparatus for melting iridium comprising a supporting-table, a metallic plate supported on said table and connected with one pole of a source of electricity, a clamp attached to said plate and electrically connected therewith, a carbon plate provided with a number of depressions for receiving each a small charge of iridium, and a movable carbon electrode connected with the other pole of the source of electricity and adapted to be placed successively over the depressions of the carbon plate for melting the iridium therein by the heat of the arc.

The invention consists, further, in certain details of construction and combinations of parts, which will be more fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a plan view of our improved apparatus. Fig. 2 is a vertical longitudinal section on line 2 2, Fig. 1; and Fig. 3 is a vertical transverse section on line 3 3, Fig. 1, showing the movable electrode in position for forming the arc.

Similar characters of reference indicate corresponding parts.

Referring to the drawings, A indicates a table, of wood or other suitable material, supported in any suitable manner.

B is a plate, of metal or other suitable conducting material, which is placed upon the table and connected electrically by bolt *b* with a second metallic plate B' at the under side of the table, said plate B' being connected by a conducting-wire 1 with the negative pole

of a dynamo-electric machine or other source of electricity. A plurality of plates B may be arranged on top of table A and connected through the table with the longitudinal plate B', as shown in Figs. 1 and 2. To the rear part of the table, at the under side of the same, is attached a longitudinal plate C, which is connected by wire 2 with the positive pole of the source of electricity and again connected by wires 3 with transverse plates C', that extend toward the front edge of the table A and are provided with sockets for receiving the flexible conducting-wires 4, terminating each in a handle D and a socket D', provided with a carbon electrode D², as clearly shown in Fig. 3.

On the metallic plate B is arranged a transverse clamp B², of U shape, which is fastened by its extension *d* in electrical contact with the plate B, said clamp being provided in one of its jaws with a clamping-screw *e* for firmly attaching a carbon electrode E of rectangular shape, which is provided with a large number of small depressions *i*, into which the small pieces of iridium that are to be melted into proper shape for being attached to the nibs of the blanks of gold pens are placed.

The placing of the iridium particles in the depressions of the plate is first accomplished in any suitable manner, and when all the depressions are charged the electrode E is placed in position on the plate B and firmly clamped by the U-shaped clamp B², so as to be rigidly held in position. Connection with the source of electricity is then made and the movable electrode placed successively over the depressions or "craters" of the plate E, so that the iridium therein is melted by the heat of the arc formed between the plate E and the movable electrode D², so that the melting of the iridium for the purpose stated is accomplished in a quick and effective manner.

For hardening the iridium one or another of the metals of the rare earths may be added in small quantity to the particles of iridium charged into the depressions *i*, said metal and the iridium being then melted together, so that a hard alloy of iridium is formed.

Besides melting or alloying iridium and other metals metallic oxids or minerals con-

taining the same may be subjected to the heat of the electric arc and fused into globules for use in the arts.

Our improved apparatus has the advantages that the iridium is melted up into small globular or rounded form for application to the nibs of the pen-blanks, and this operation is quickly and economically performed. The heat of the arc is sufficient to melt any desired combination of metals, so that any desired alloy can be made.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

15 1. An apparatus for melting iridium, consisting of a supporting-table, a metallic plate supported thereon and connected with one pole of a source of electricity, a clamp attached to said plate, a carbon plate provided
20 with a plurality of depressions for receiving iridium in small quantities, and a movable electrode connected with the other pole of the source of electricity, substantially as set forth.

2. An apparatus for melting iridium, consisting of a supporting-table, a metallic plate attached to the top of the same, a second metallic plate attached to the under side of of the table, means for connecting said plates, means connecting one of said plates with one pole of a source of electricity, a metallic clamp attached to the top plate and provided with a clamping-screw, a carbon plate in said clamp and provided with a plurality of depressions for receiving iridium in small quantities, and a movable electrode provided with a handle and connected with the opposite pole, and adapted to be passed over the carbon plate for melting the iridium in the depressions of the same, substantially as set forth.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

GYULO ARMENY.

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Witnesses:

PAUL GOEPEL,

JOSEPH H. NILES.