

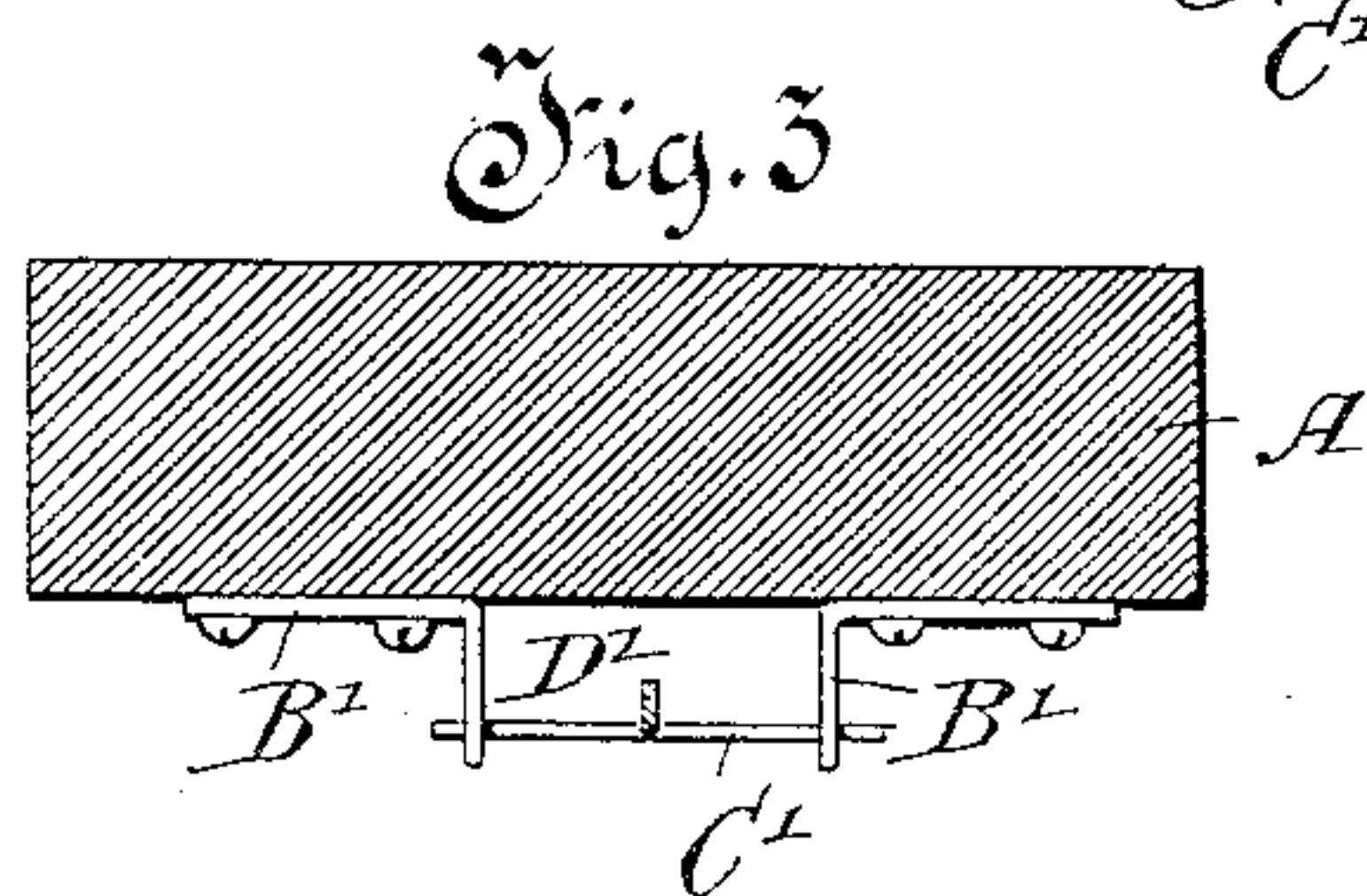
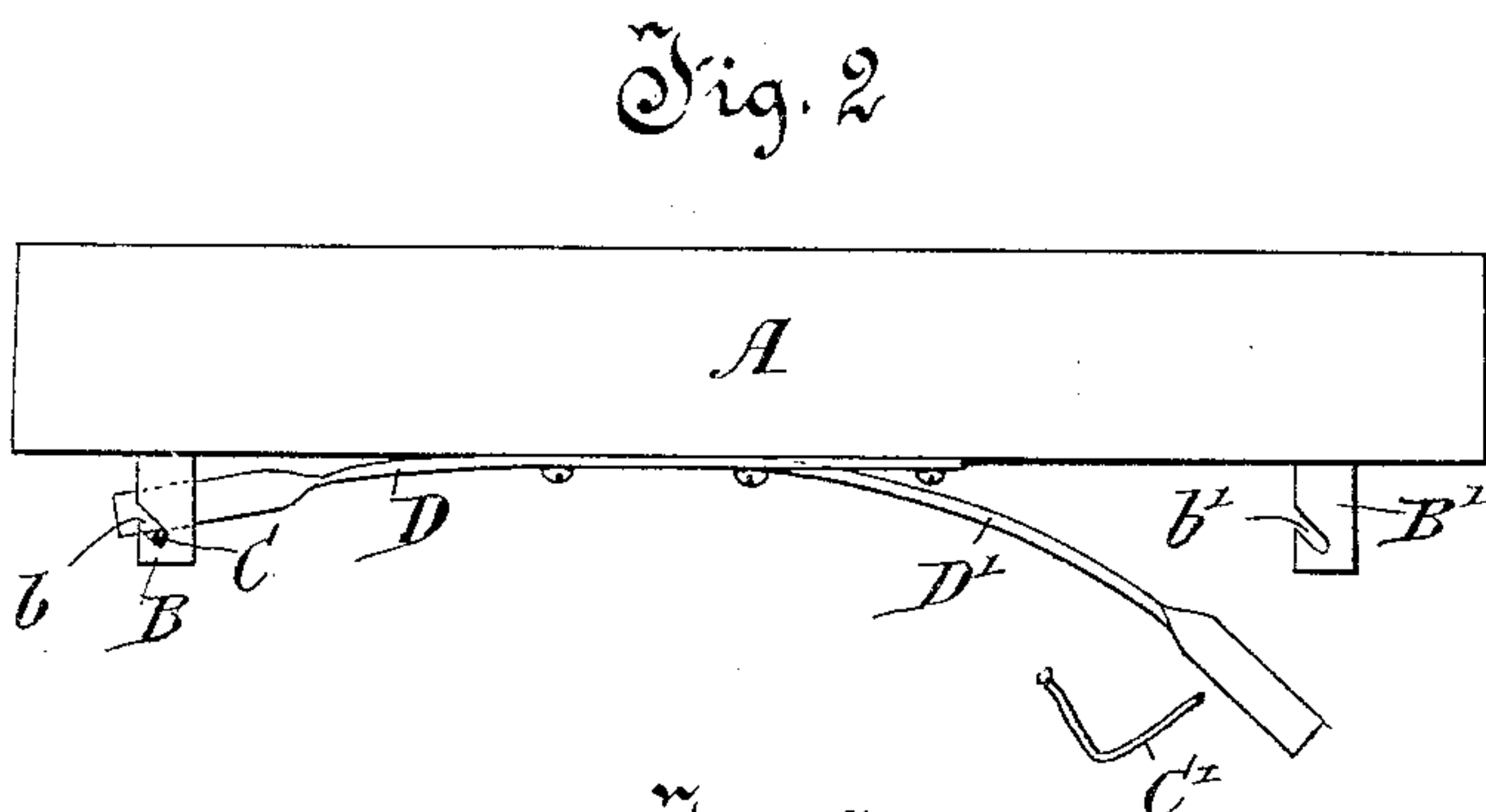
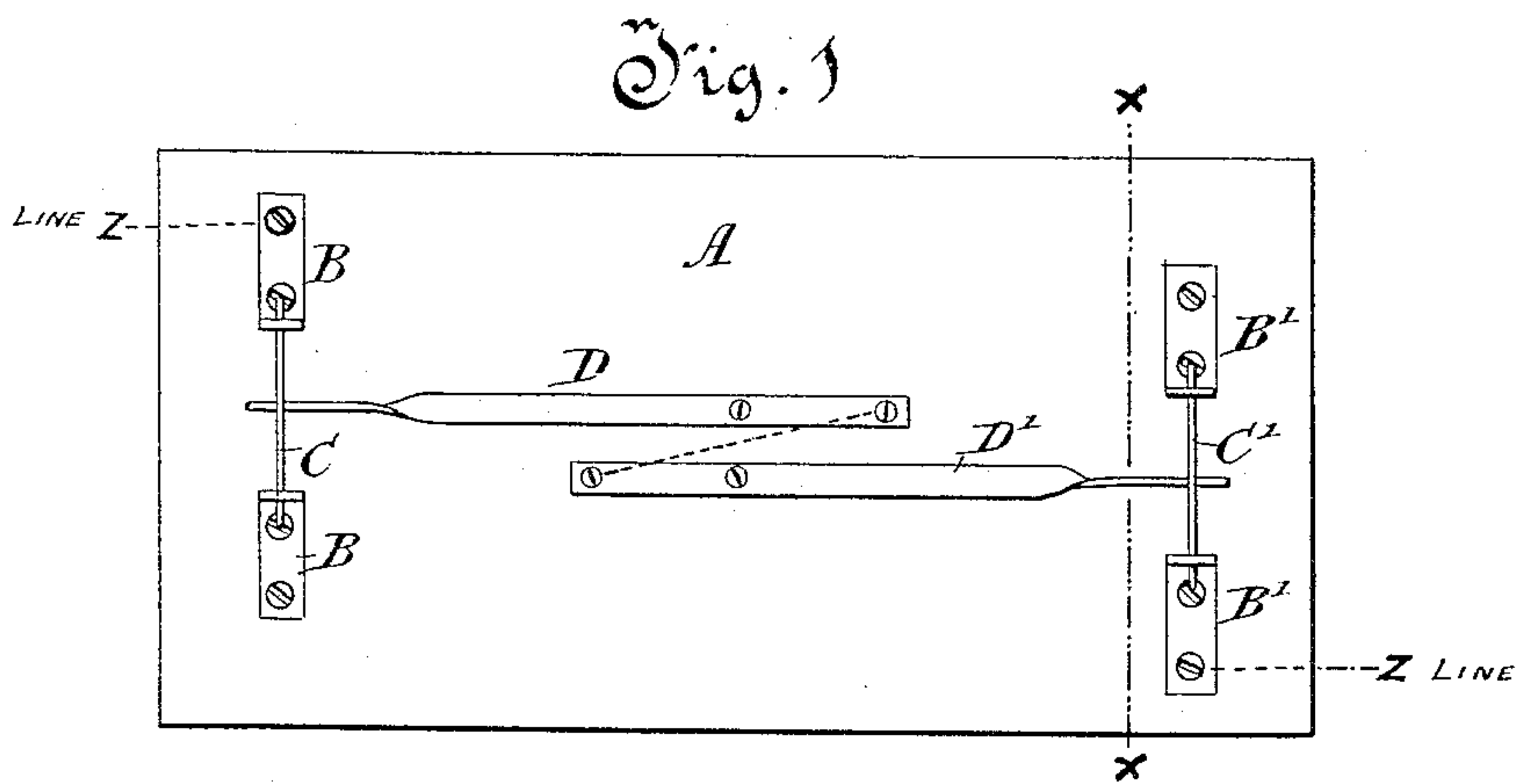
(No Model.)

E. R. WHITNEY.

SAFETY CUT-OUT FOR ELECTRIC CIRCUITS.

No. 350,648.

Patented Oct. 12, 1886.



Witnesses:
O. W. M. Waud
Alex. W. Dow

Inventor
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Per Atty:-
Cesario & Kellom

UNITED STATES PATENT OFFICE.

EDWIN R. WHITNEY, OF MANCHESTER, NEW HAMPSHIRE, ASSIGNOR TO THE
FORSAITH ELECTRICAL MACHINE COMPANY, OF SAME PLACE.

SAFETY CUT-OUT FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 350,648, dated October 12, 1886.

Application filed February 9, 1886. Serial No. 191,367. (No model.)

To all whom it may concern:

Be it known that I, EDWIN RUTHVEN WHITNEY, of the city of Manchester, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Safety Cut-Outs for Electric Circuits; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention has special reference to that class of cut-out devices which are adapted for use with incandescent installations, and has for its object to afford the greatest possible safety and accuracy in operation, with the least expense in construction, besides enabling the attendant to instantly see the cause of an accident to any of the lamps, and providing a device which can immediately be placed again in circuit when the trouble which caused the cut-out to act has been removed.

To this end my invention consists, broadly, in the combination, with a short wire or strip of copper or equivalent material placed loosely in suitable bearings, of a spring which bears when in tension upon said wire or strip when the circuit is intact, but serves to throw the same out of its bearings, and consequently out of circuit, when an excess of current causes said wire or strip to bend or soften, and in this manner cut out any particular lamp.

To thoroughly comprehend the manner in which my invention may be practically applied, reference must be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate like parts, and where—

Figure 1 is a plan view illustrating my invention applied to a double safety cut-out; Fig. 2, a side view of same, one of the springs being shown out of tension; and Fig. 3 a cross-section on line *xx*, Fig. 1.

A represents a suitable plate or block, of wood or other proper material, which will be suitably grooved or perforated to receive the necessary wires, as will be understood by electricians. On this block are fastened, in the present case, four short hangers, B B and B' B', one pair being near each end, (when the block is fastened in a different position B B and B' B' may be called "standards.") These

hangers have suitable slits or bearings formed therein, as seen at *b b'*, Fig. 2, to support the ends of short wires or strips C C' (of "hard-drawn" copper, brass, or other metal or material which will soften by heat, so as to be easily bent,) which are placed loosely therein. Bearing upon these wires or strips C C' are the free ends of flat springs D D', the opposite ends of which are firmly fastened to the block A, toward its center, in this position said springs being in tension. The circuit is indicated by the dotted lines in Fig. 1—that is to say, the current passes through the hangers or standards and the wires or strips.

The double arrangement just described is to provide for absolute safety and to protect both sides of the lamps. In case one device should fail to act, the other one will certainly do so. It will be understood that there may be only one device for each lamp in the circuit; or the cut-outs may be multiplied and the necessary connections arranged according to the ideas of the electrician.

The operation of my safety cut-out will be readily understood; but I may say that when a lamp breaks or the circuit is otherwise disturbed, so as to cause an excess of current to pass through the wire or strip resting in the hangers or standards, such excess of current will heat and soften said wire or strip to such an extent that the tension of the spring bearing against the same will at once cause it to bend sufficiently to release the ends from their bearings and throw it out, thus immediately breaking the circuit at that point and cutting the adjacent lamp out. When the cause of trouble has been removed, the spring is simply pressed back to its first position and another wire or strip inserted to replace the one thrown out. Thus it will be seen that I produce a perfect safety cut-out at small expense, and one which does not get out of order, besides enabling the electrician to quickly restore the circuit without the use of tools or mending of broken parts.

What I claim, and desire to secure by Letters Patent, is—

1. A safety cut-out for electric circuits, consisting of a wire or strip resting loosely in hangers or standards, and a spring bearing

against said wire or strip and acting to bend and throw same out of its bearings when softened by an excess of current, said wire or strip and spring being normally in circuit, substantially as and for the purpose specified.

5 2. In an automatic safety cut out, the combination, with a block or bed, of hangers or standards having slots or bearings therein, a wire or strip of copper or equivalent material
10 having its ends resting in said bearings, and a

spring pressing when in tension upon said wire or strip, and adapted to bend and throw same out when the latter is softened by excess of current, substantially as and for the purpose specified.

Manchester, 18th day of January, A. D. 1886.
EDWIN R. WHITNEY.

Witnesses:

NATHAN P. HUNT,
L. B. JONES.