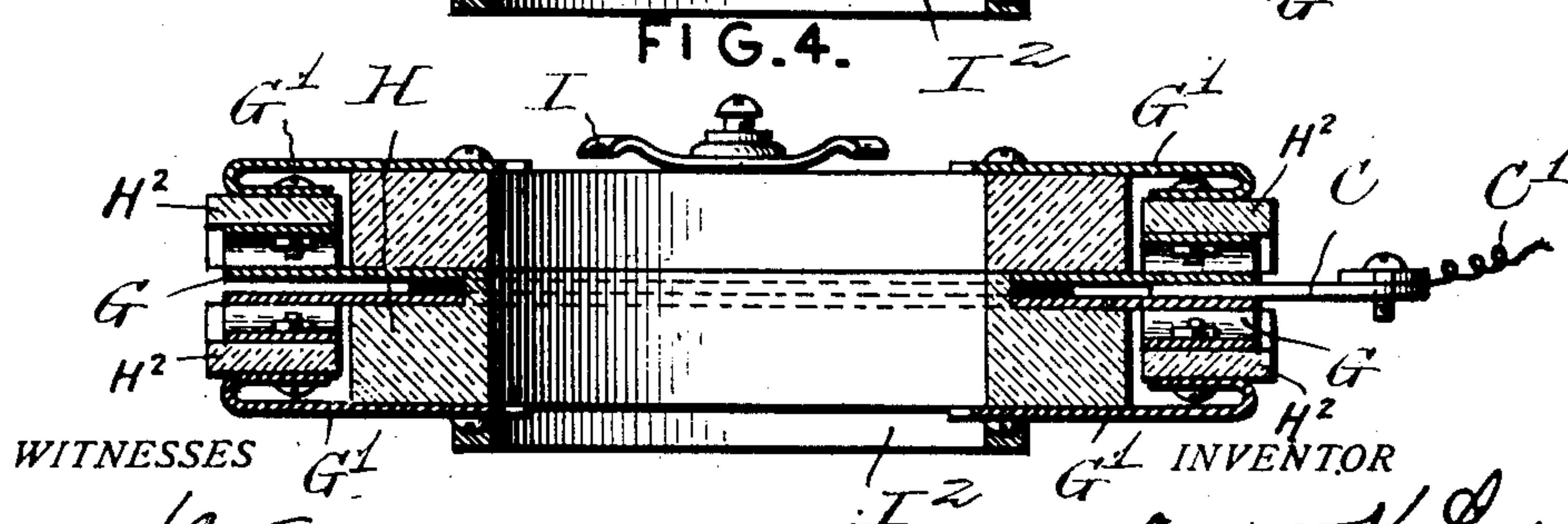
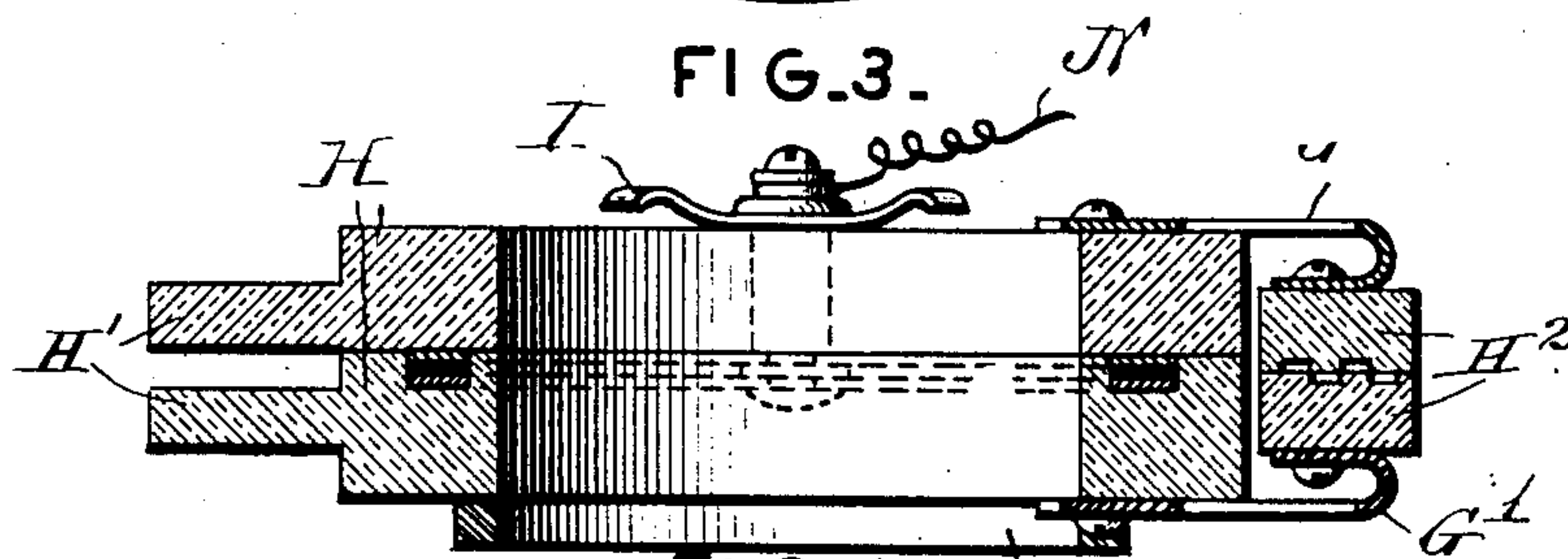
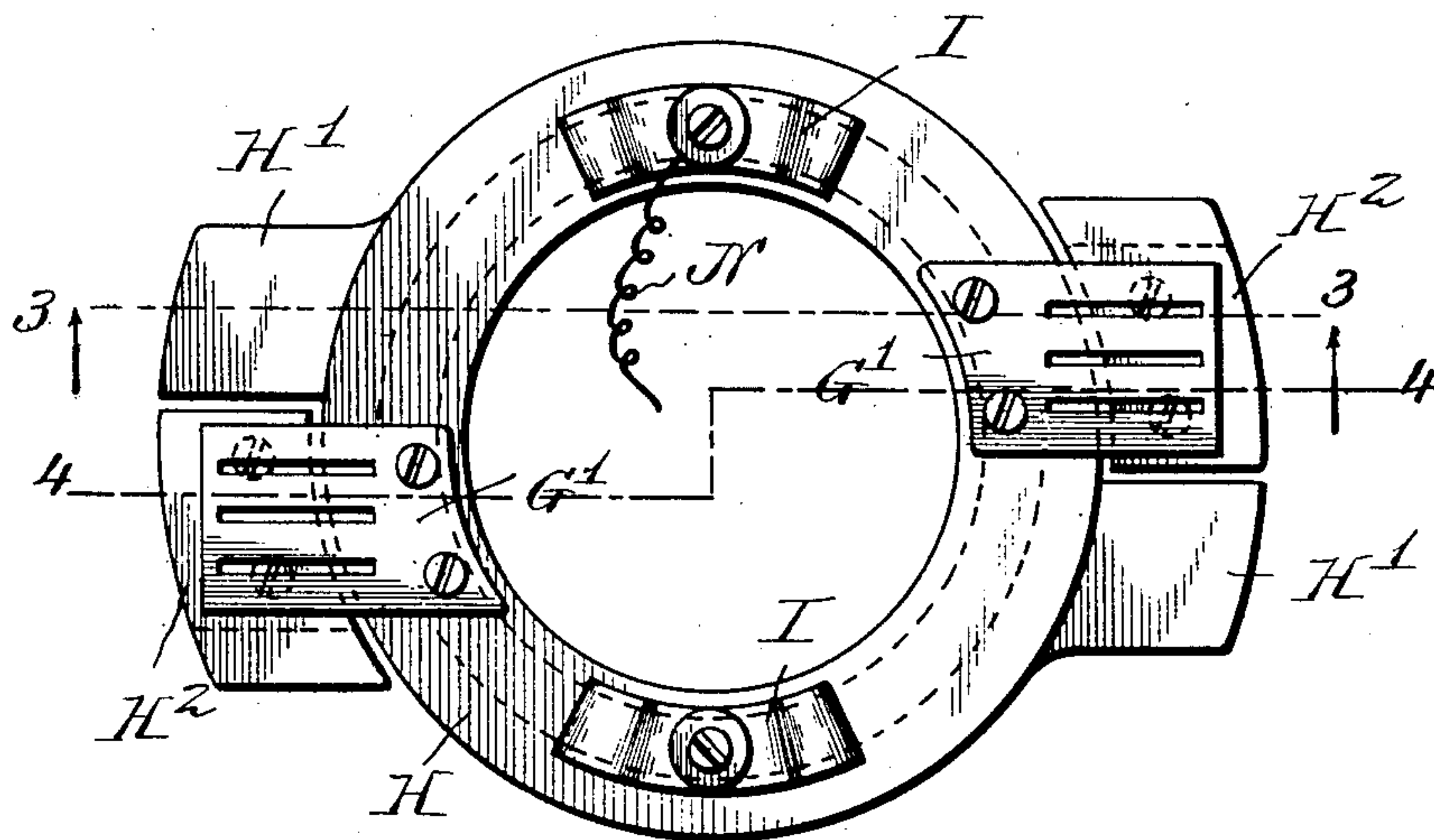


CONTROLLING MEANS FOR ELECTRIC CIRCUITS.
APPLICATION FILED APR. 3, 1906.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

FIG. 5.

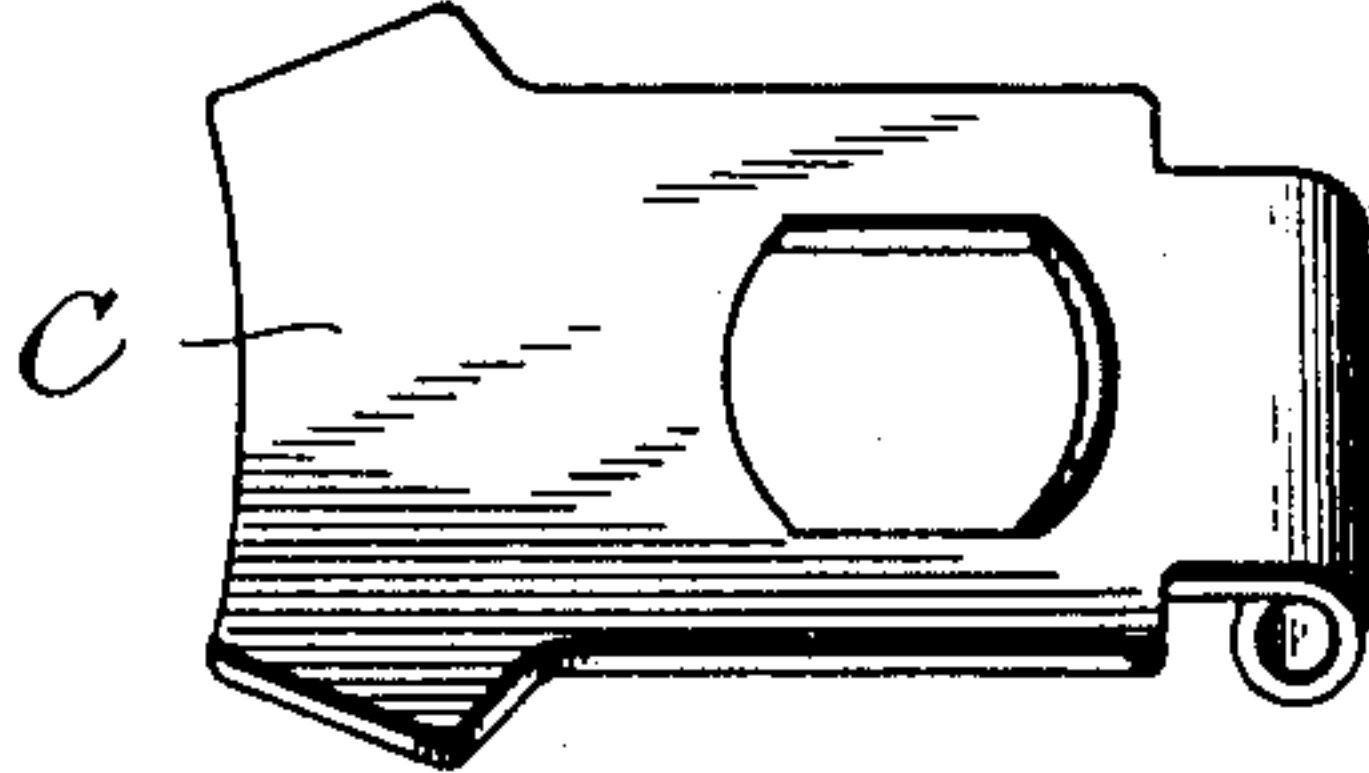


FIG. 8.

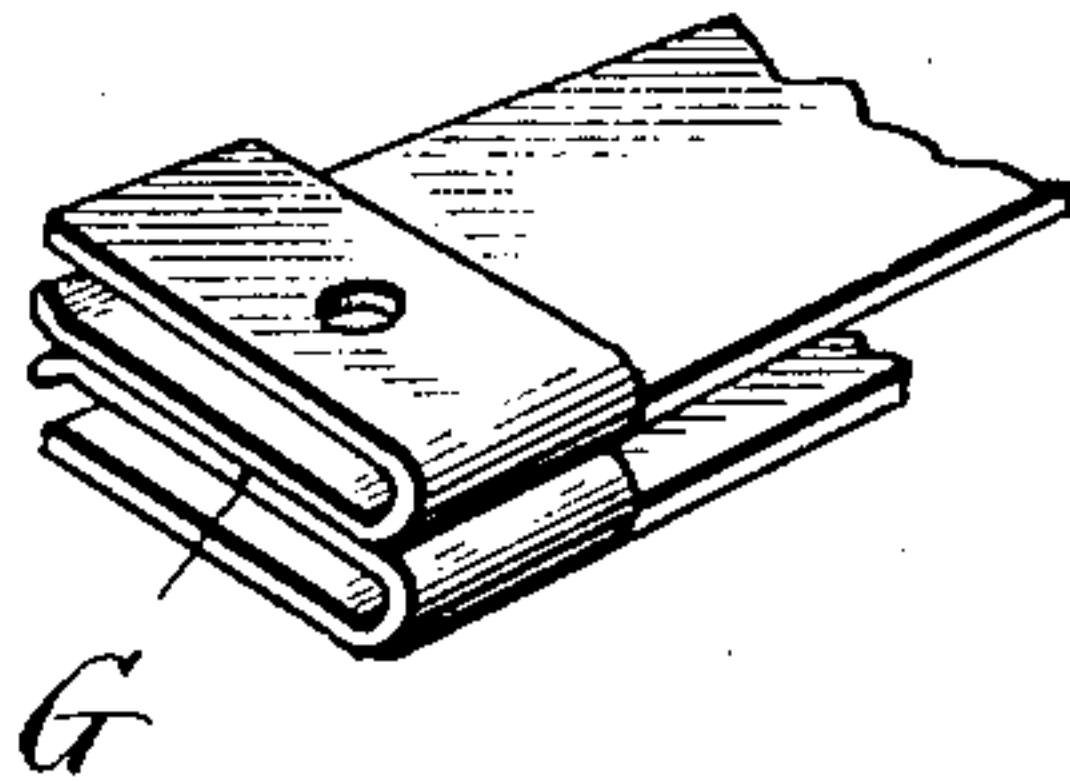


FIG. 6.

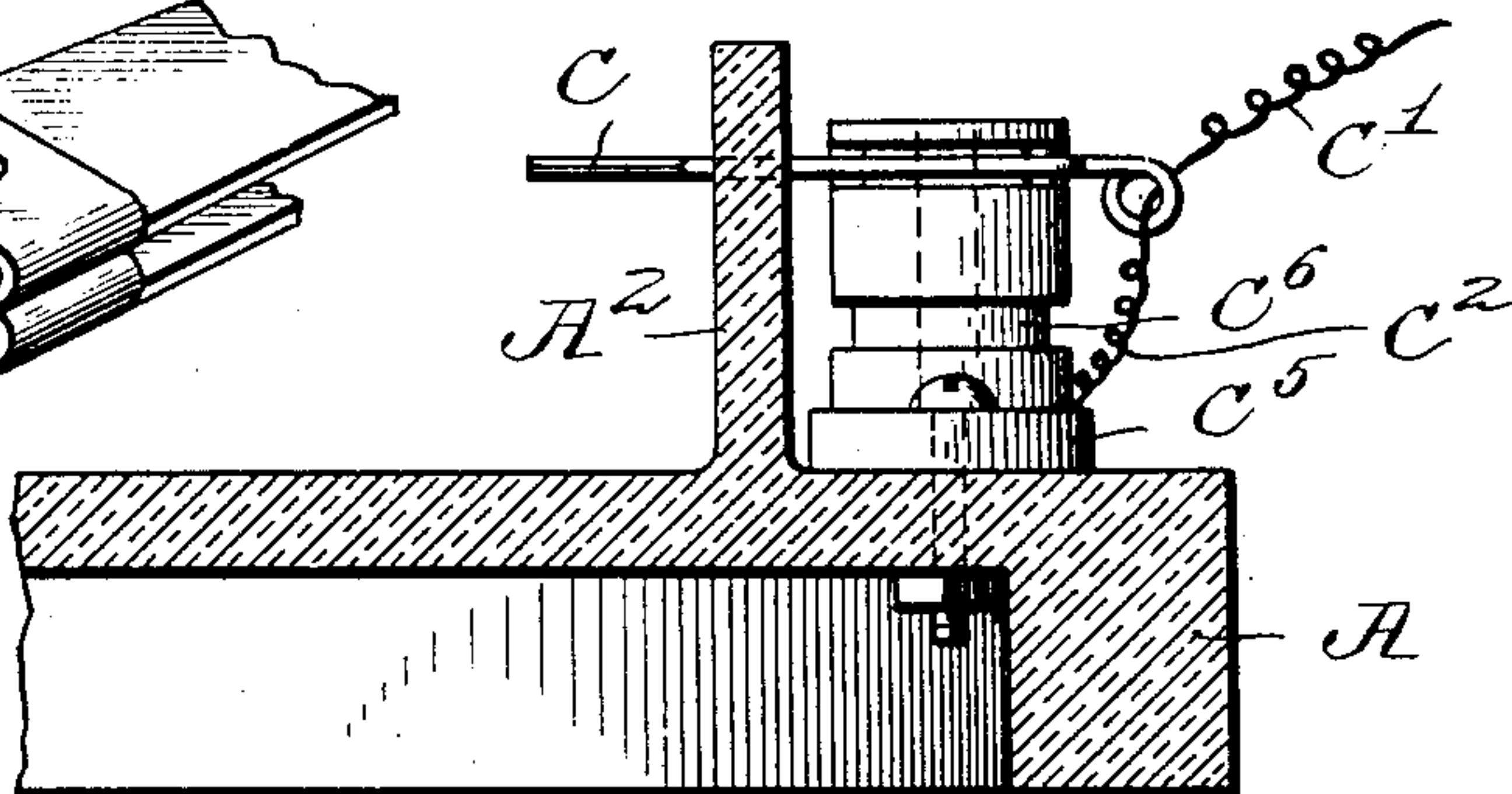
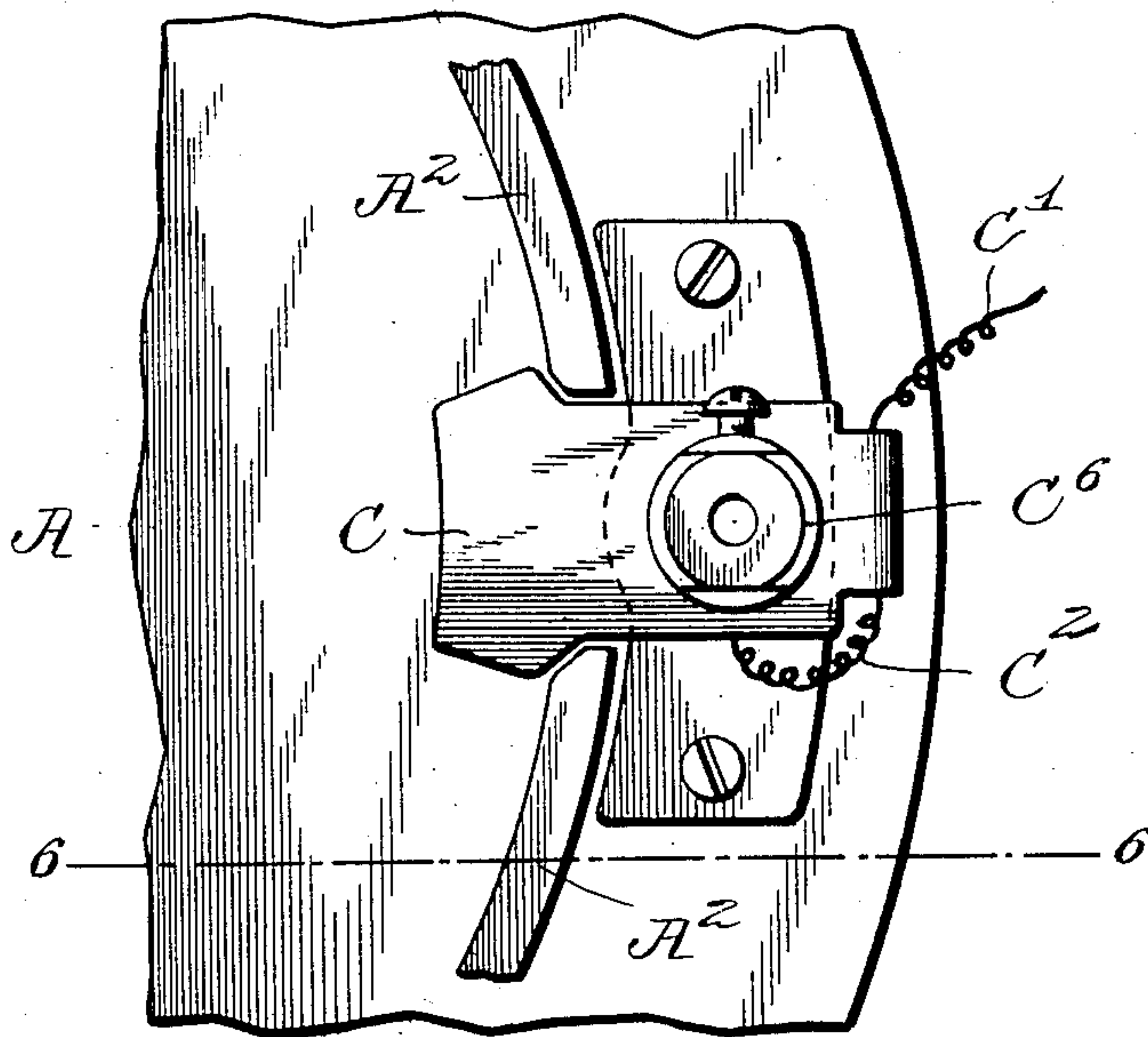


FIG. 7.



WITNESSES

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CONTROLLING MEANS FOR ELECTRIC CIRCUITS.

966,456.

Specification of Letters Patent.

Patented Aug. 9, 1910.

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To all whom it may concern:

Be it known that I, JULIUS K. LUX, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Circuit-Controlling Means for Electric Circuits, of which the following is a specification.

My invention relates to circuit controlling means and particularly to the contact making and breaking portions thereof.

In the accompanying drawings—Figure 1, is an elevation of a portion of the said means which is designed to be moved in either direction to come into and out of engagement with a cooperative portion. Fig. 2, is a plan view of the parts shown in Fig. 1; and showing yielding contacts. Fig. 3, is a view partly in section on the line 3—3 of Fig. 2. Fig. 4, is a view partly in section on the lines 4—4 of Fig. 2; and showing a contact plate in engagement with the spring contacts. Fig. 5, is a view of the cooperative contact piece. Fig. 6, is a view of the part shown in Fig. 5, taken on line 6—6, Fig. 7, mounted on a post and showing the pliable connection between the contact surfaces and the said post and the pliable means for connecting the said contact piece in circuit independently of or conjointly with the said post circuit or connection and showing a portion of a suitable support broken away and an arc restricting barrier which is preferably made integral therewith. Fig. 7, is a top plan view of the portions shown in Figs. 5 and 6, showing a binding screw usual in the art, and showing the arc restricting barriers disposed at both sides of the contact piece, the said barriers being broken away at one end. Fig. 8 is a detail perspective view of a portion of the movable contact.

Referring to the drawings in detail; H indicates the insulation portions of the movable member, which are rigidly connected to rotate together and are preferably made integral with the arc restricting barriers H^1 , H^1 , which are hereinafter described. The said movable member is adapted to all classes of service and is especially suited to making and breaking heavier circuits in one movement than in the reverse movement; as in heater circuits; motor circuits; and others wherein step by step changes in the current used, may be desired.

G, G indicate the movable contacts which are designed to engage a plurality of cooperating contacts. The said contacts G, G are bifurcated but obviously they may be made of any suitable form or number of surfaces. The insulation portion H forms a barrier about the movable contact G, exposing the extremities of the latter in proximity to the fixed conductive parts hereinafter described.

H^1 , H^1 , indicate arc restricting barriers arranged in proximity to the free ends of the movable contact; and a channel or passage-way is formed of a width suitable to clear the contact pieces C, C, which are hereinafter described. The said barriers H^1 may be made of any length or extent radially or circumferentially best suited to the particular service for which they are intended.

H^2 , H^2 indicate barriers of insulation movable relatively to the insulation part H. The said barriers H^2 are yieldingly secured to the movable member by means of the yielding ends of movable contact G, and also by the springs G^1 , G^1 . The spring G^1 bearing upon the spring contacts G supplement the contact making stress of the said contacts G, with the contact making stress of the springs G^1 . The said contact pieces C also separate the said barriers H^2 , when the cooperative contacts are engaged so that in opening the circuit between the said movable barriers but little power is needed to pass the contact C between the said barriers. In closing the circuit by way of the movable barriers H^2 the power expended to separate the said barriers relieves the movable contact from a portion of its stress so that they are more easily cooperatively engaged and when in engagement the parts H^2 — G^1 press the cooperative contacts together. It will be obvious that the said barriers H^2 , H^2 may extend to both sides circumferentially of the movable contact G. And it will likewise be noted that the upper and lower barriers H^2 , H^2 , need not quite touch to fulfil their arc interrupting functions. The said barriers H^2 have shallow grooves formed in those faces thereof which rub against the contact piece C, so as to divide the arc and also to reduce friction on the part C when the said barriers are in engagement therewith.

I, I are yielding rubbing contact surfaces

connected with the contact G, G. I² is a non-yielding rubbing contact surface of electric conducting material extending entirely around the insulation member H and connected with the contact G, G. N, is a pliable conductor connected with the contact G, G. The said rubbing surfaces I and I² and the pliable conductor N are adapted to permanently connect the contacts G and G with the service or apparatus that is to receive current as will be herein described.

C, is a contact adapted to be engaged (in either rotatable direction) by the movable contacts G. The contact C is slotted and loosely held on a reduced portion of the post C⁵ between suitable shoulders with sufficient clearance to allow it to freely tilt a limited distance transversely and lengthwise. The said loose or floating connection or bearing between the portion C and the fixed part C⁵ allows the portion C to move into more perfect alinement and contact when the cooperative contacts are engaged.

C¹ indicates a pliable conductor adapted to connect the contact part C to an electric circuit. The said pliable connection provides perfect electrical connection between the loosely borne part C and the circuit which may be connected therewith, leaving the said part C free to find its best seat, or bearing, or contact, between the bifurcated ends of the contact G.

C² indicates a portion of the conductor C¹ which is extended to the binding post C⁵ and secured thereto; thus making perfect electrical contact between the parts C and C⁵ while leaving the part C free to move as herein described. The channel C⁶ in Fig. 6, and the irregular opening in Fig. 5, indicate the means for loosely connecting the part C to the support.

C⁵ comprises a binding post with binding screw of the usual form, said binding post being mounted upon a suitable support —A— having integral arc restricting barriers —A²—A².

One or more contact parts as C may be used as the case may require.

I claim:

1. Circuit controlling means comprising cooperative contact members, one of which is movable about an axis into and out of sliding contact with the other contact member, and barriers of insulating material moving with the movable contact member and located at opposite ends thereof, the barrier at one end being composed of parts spring-pressed toward each other and having their meeting faces in the plane of contact of the contact members.

2. Circuit controlling means comprising opposite contacts spring-pressed toward each other and movable about an axis, a cooperative contact having a portion thereof loosely supported in the path of movement of the meeting faces of the movable contacts and adapted to oscillate longitudinally and transversely.

3. In a controlling means for electric circuits, a fixed support, a contact loosely mounted upon the support to rock transversely and longitudinally, a flexible conductor between the contact and its support, a rotary element and contact members on said element and engaging opposite faces of the first named contact.

4. In a controlling means for electric circuits, a fixed support, a contact loosely mounted upon the support to rock transversely and longitudinally, a rotary element and contact members on said element and engaging opposite faces of the first named contact, and separable insulating barriers mounted upon the rotary element in juxtaposition to said contact members.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JULIUS K. LUX.

Witnesses:

F. M. BAKER,

ELIZABETH L. MACFATE.