

No. 887,822.

PATENTED MAY 19, 1908.

R. F. LE BROcq.
ELECTRICAL CONTACT.
APPLICATION FILED MAR. 24, 1906:

Fig. 1.

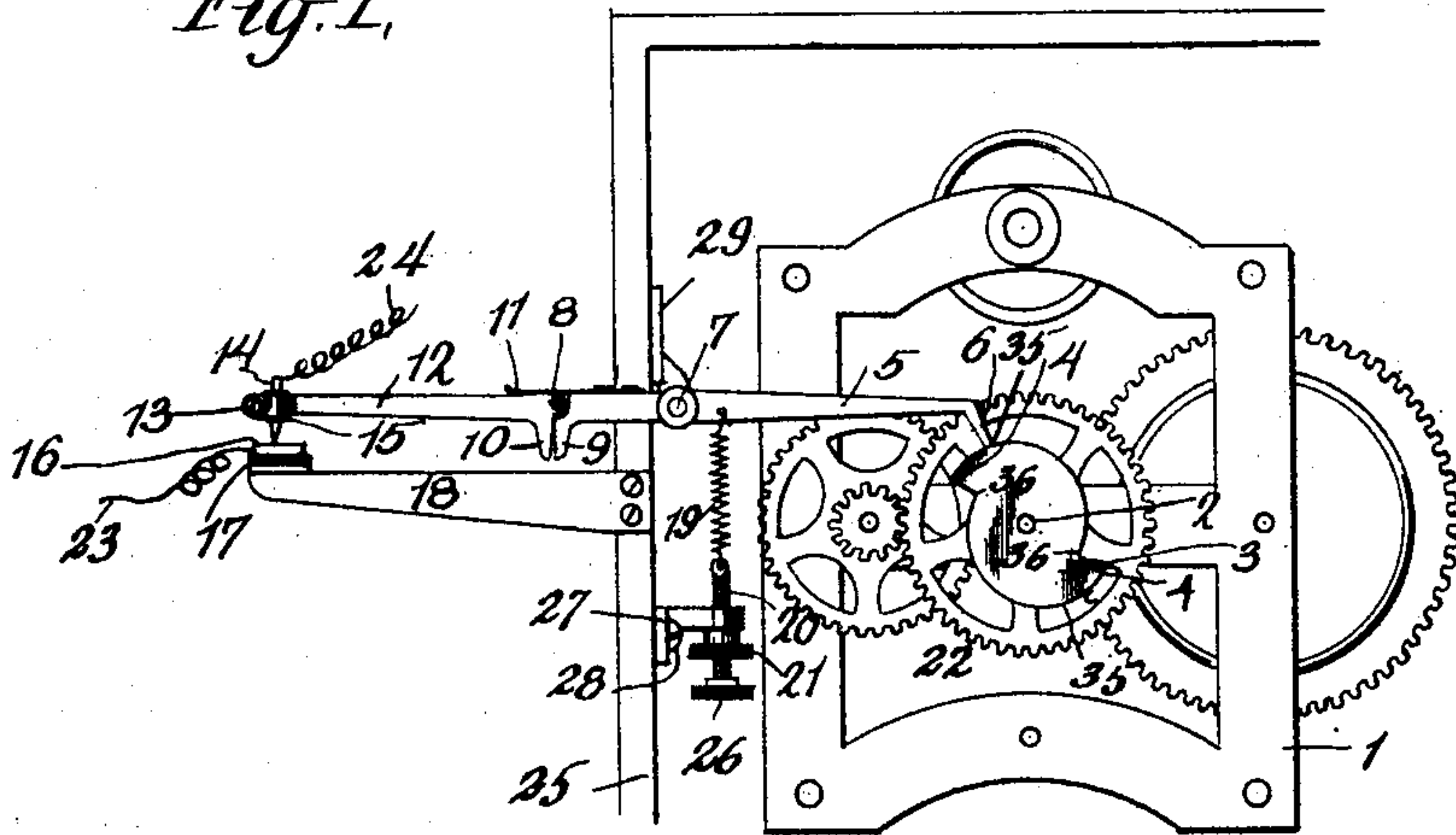
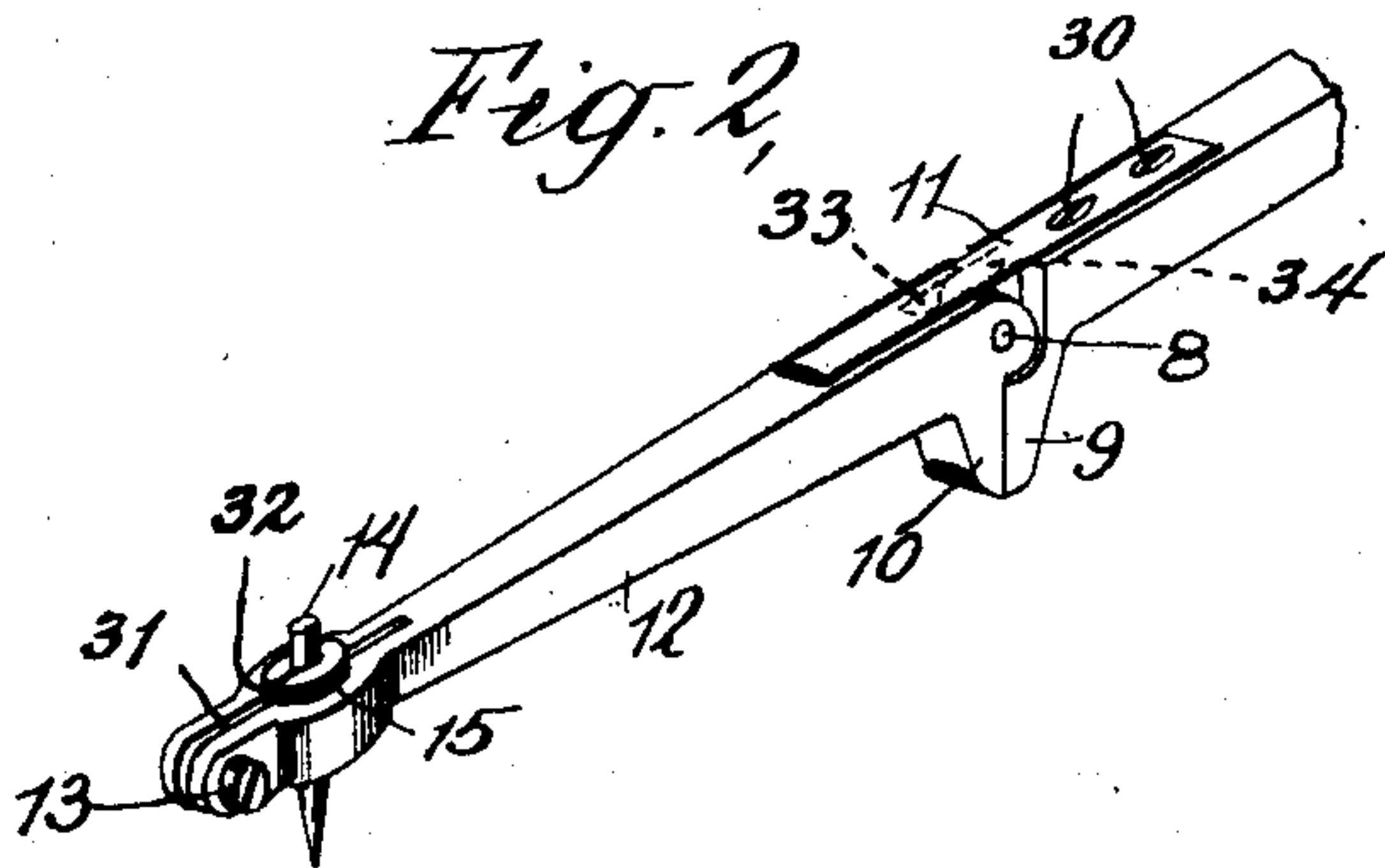


Fig. 2.



WITNESSES:

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RICHARD F. LE BROCCQ, OF ETNA, NEW JERSEY, ASSIGNOR OF ONE-HALF TO JAMES P. NIEMANN, OF LYNBROOK, NEW YORK.

ELECTRICAL CONTACT.

No. 887,822.

Specification of Letters Patent.

Patented May 19, 1908.

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To all whom it may concern:

Be it known that I, RICHARD F. LE BROCCQ, citizen of the United States, residing at Etna, Bergen county, State of New Jersey, have invented new and useful Improvements in Electrical Contacts, of which the following is a specification.

This invention relates to mechanism for making electrical contacts and relates especially to means for making such contacts by delicate automatic mechanism, such as a chronometer, without stopping or impairing its action.

In the accompanying drawing, in which the same reference numeral refers to similar parts in the several figures, Figure 1 is a side elevation of an embodiment of this invention; and Fig. 2 is a perspective view of a detail of the same.

In the embodiment of the invention illustrated in the drawings, 25 is a casing within which is supported the frame 1 carrying gears 22 of a suitable clock mechanism. On one of the arbors 2 of this clock mechanism I mount a cam 3 having two shoulders 4, 4, to cooperate with the point 6 of a lever 5 pivoted at 7 to the bracket 29 carried by the casing 25. This lever 5 is made of any suitable material and its other end is provided with a depending lug 9 and a reduced portion 34 which is mounted within the slot 33 of the secondary lever 12 and pivoted to the same by means of the pivot 8. This secondary lever 12 is also provided with a depending lug 10 adapted to cooperate with the lug 9 of the lever 5. On the outer end of this lever 12, which may be made of aluminum or other suitable light material, I mount a platinum contact point 14 in the enlarged portion 32 of the slot 31 and suitably insulated from the lever 12 by means of the insulation 15, the contact point and insulation being firmly and adjustably held within the lever 12 by means of the clamping screw 13, see Fig. 2.

Beneath the levers 5 and 12 and rigidly secured to the casing 25 I mount an arm 18 supporting the electrical contact plate 16 suitably insulated from the arm 18 by means of the insulation 17 and so located as to cooperate with the movable contact 14. I may also sometimes use an adjustable screw 26, carried by the bracket 27 secured by screws 28 to the casing 25 adapted to be con-

nected with the lever 5 by means of the spring 19, as shown. The screw 26 may be adjusted so that the point 6 will bear lightly upon the cam 3 when the screw is secured in this position by means of the check nut 21. I may also use a flat leaf spring 11 secured at one end by means of screws 30 to the lever 5 and bearing at its opposite end upon the secondary lever 12, although my device is adapted to be used without either of these springs.

In the operation of my invention the delicate clock mechanism 22 causes the arbor 2, upon which the cam 3 is mounted, to rotate and thereby rock the lever 5 upon its pivot 7. When the point 6 of the lever 5 reaches the points 35, 35, the contact point 14 is brought into engagement with the fixed contact plate 16 and closes the circuit between the wires 23 and 24; further movement of the point 6 upon the cam 3, between the points 35, 35, and the shoulders 4, 4, merely causes the lever 5 to rock upon its pivot 7 and its reduced portion 34 to move about the pivot 8, withdrawing the depending lug 9 from the cooperating lug 10 without placing any additional pressure upon the contact 14 which would merely result in an increased friction between the point 6 and the cam 3. Upon further revolution of the cam 3 the point 6 is caused to move off of the shoulders 4, 4 to the lowest portions 36, 36 of the cam by having the lever 5 so proportioned as to counterbalance the lever 12 which, as previously stated, is preferably made of aluminum. To insure the proper action of the parts I may, as previously noted, use the spring 19 and the adjustable screw 26. When the point 6 of the lever 5 falls from the shoulders 4, 4 to the lowest portions 36, 36 of the cam the depending lug 9 moves into contact with the depending lug 10 of the secondary lever 12 and through this means the lever 12 carrying the contact 14 is immediately moved from the fixed contact 16, breaking the electrical contact. The leaf spring 11 mounted upon the lever 5 and bearing upon the secondary lever 12 is sometimes used merely for the purpose of yieldingly holding the contact 14 in engagement with the fixed contact 16. By making the contact from the cam 3 by means of two levers, as shown, I am enabled to use the most delicate clock mechanism to automatically make the electrical

contact and prevent the arm 6 from bearing too heavily upon the cam 3 which would stop or interfere with the clock mechanism.

It is, of course, understood that those familiar with this art may make many modifications in the form, size, proportion and numbers of parts and connections of this apparatus, parts of the same may be used without employing the whole and parts may be used in connection with other devices and for other purposes than described without departing from the spirit of this invention or losing the advantages of the same. I do not, therefore, desire to be limited to the details of the disclosure which has been made in this case, but

What I claim as new and what I desire to secure by Letters Patent is set forth in the appended claims.

1. In combination in mechanism for making electrical contacts, a fixed contact, a movable contact, clock mechanism, a cam operated by said mechanism, a main lever bearing on the cam, and a secondary lever carrying the movable contact and pivotally connected with the main lever, substantially as described.

2. In combination in mechanism for making electrical contacts, a fixed contact, a movable contact, clock mechanism, a main lever operated thereby, and a secondary lever carrying the movable contact and jointed to the main lever to allow movement of the main lever in one direction independently of the secondary lever but to carry said secondary lever along without it when moved in the other direction.

3. In mechanism for making electrical

contacts, a fixed contact, clock mechanism, a cam actuated by the same, a lever adapted at one end to cooperate with the cam and at its other end having a reduced portion and a depending lug, a secondary lever pivoted to the reduced portion of the first lever and having a depending lug to cooperate with the depending lug on the first lever and a movable contact carried by this secondary lever.

4. In mechanism for making electrical contacts, a fixed contact, clock mechanism, a cam actuated by the same, a lever adapted at one end to cooperate with the cam and at its other end having a reduced portion and a depending lug, a secondary lever pivoted to the reduced portion of the first lever and having a depending lug to cooperate with the depending lug on the first lever, a movable contact carried by this secondary lever, and yielding adjustable means to regulate the contact of the first lever with the cam.

5. In mechanism for making electrical contact, a fixed contact, clock mechanism, a cam actuated by the same, a lever adapted at one end to cooperate with the cam and at its other end having a reduced portion and a depending lug, a secondary lever pivoted to the reduced portion of the first lever and having a depending lug to cooperate with the depending lug on the first lever, a movable contact carried by this secondary lever, and a spring mounted upon the first lever and bearing upon the secondary lever.

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Witnesses:

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