

No. 793,491.

PATENTED JUNE 27, 1905.

M. J. WOHL.
MAXIMUM CURRENT INDICATING DEVICE.
APPLICATION FILED NOV. 21, 1904.

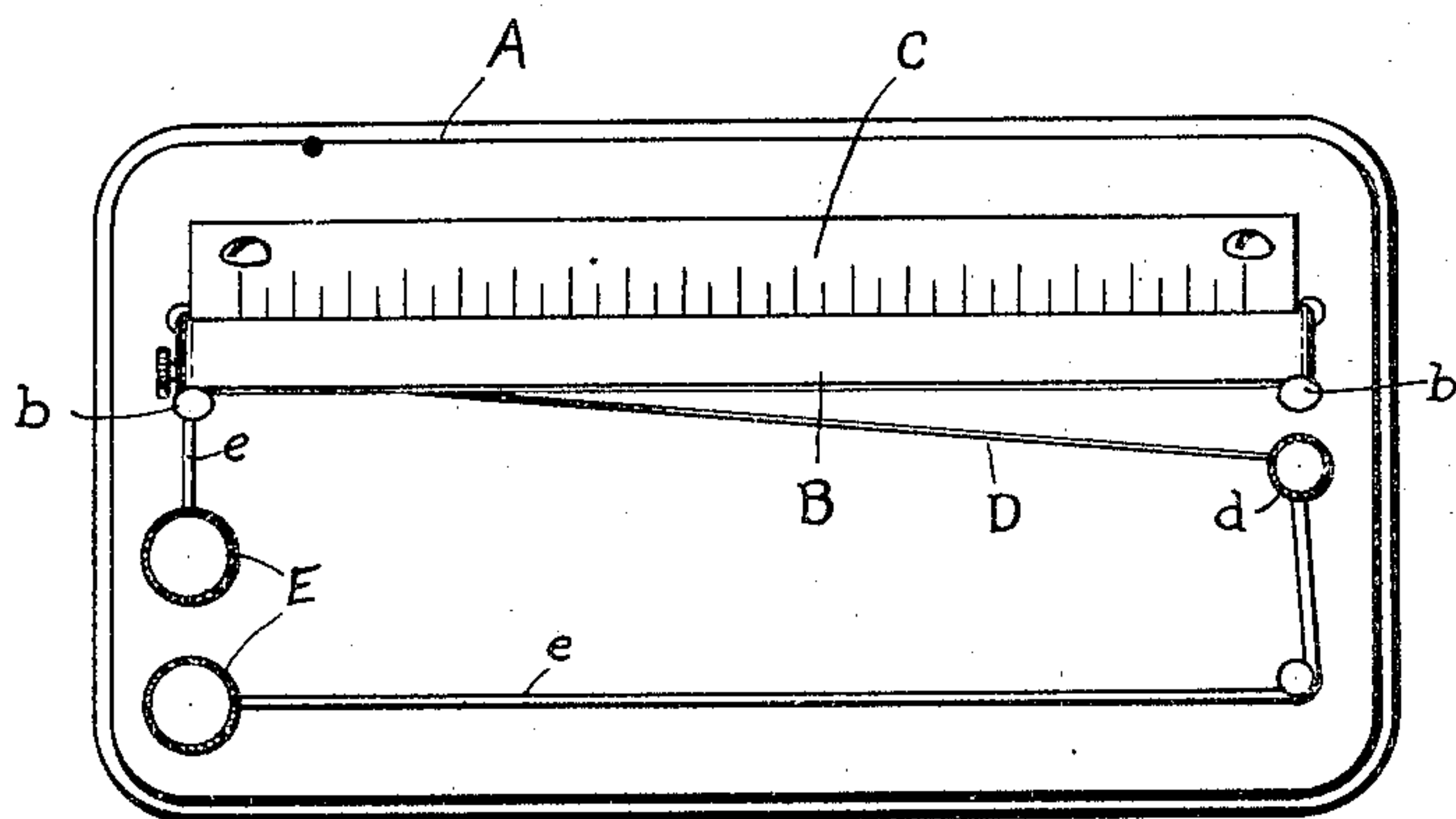


Fig. 1

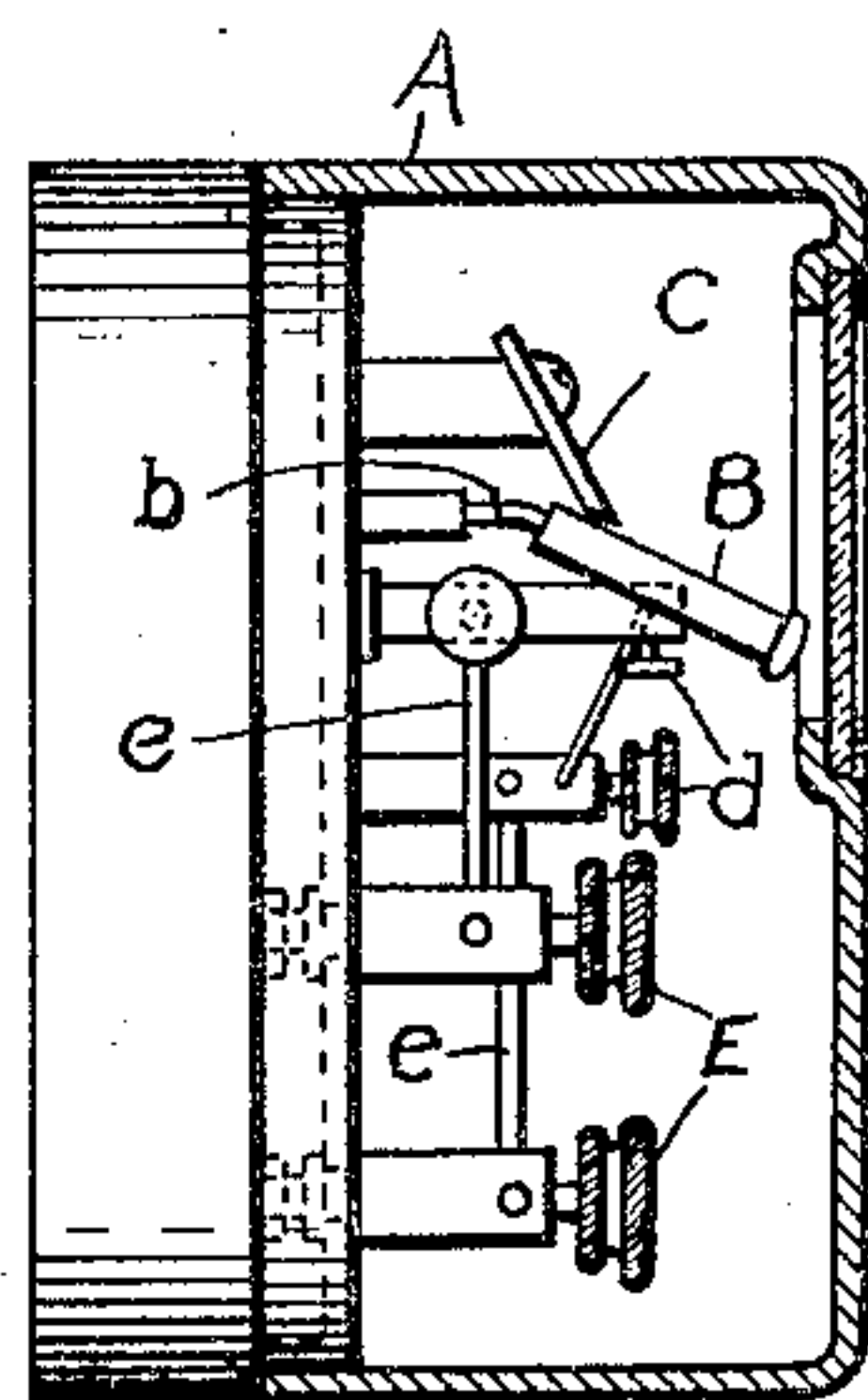


Fig. 2

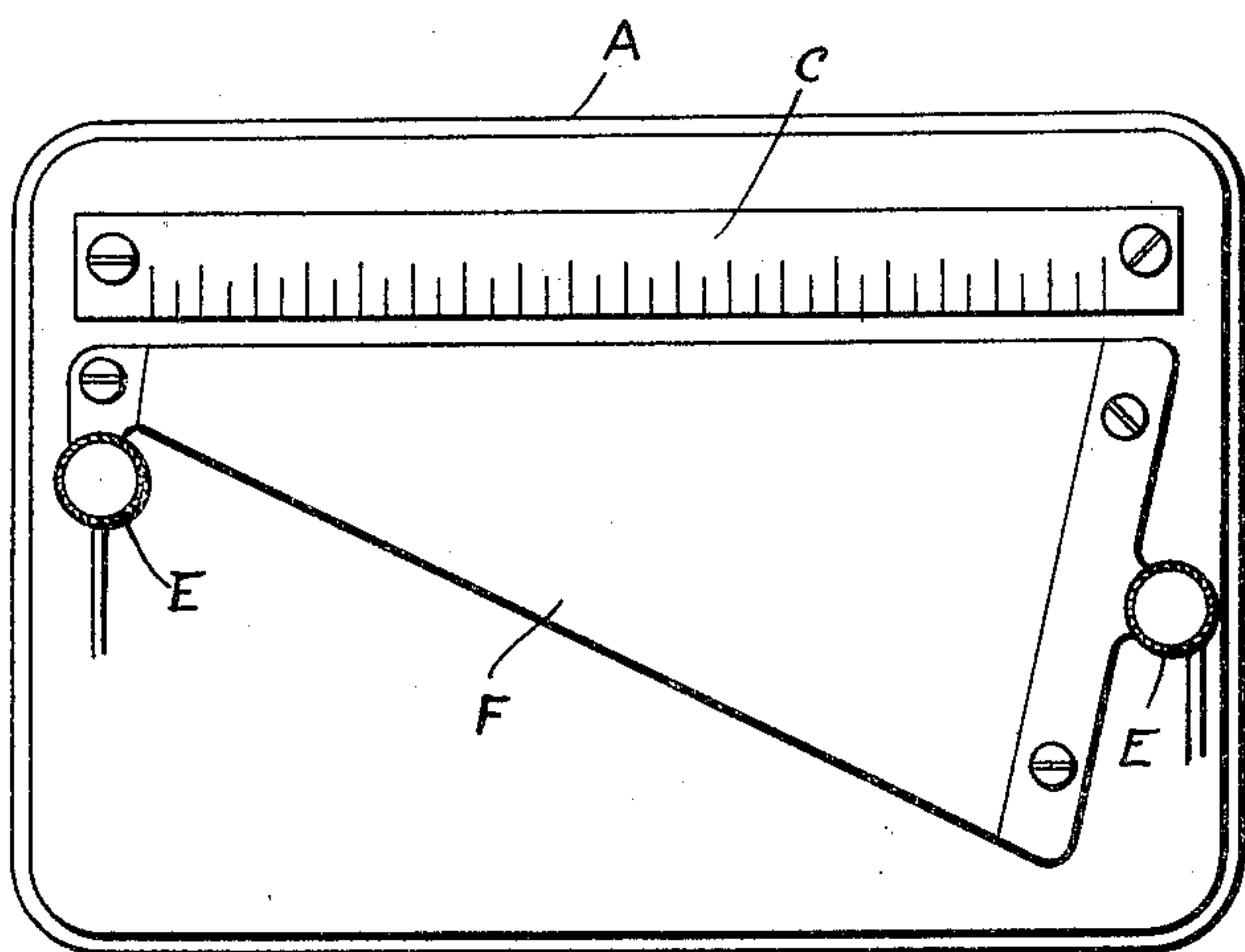


Fig. 3

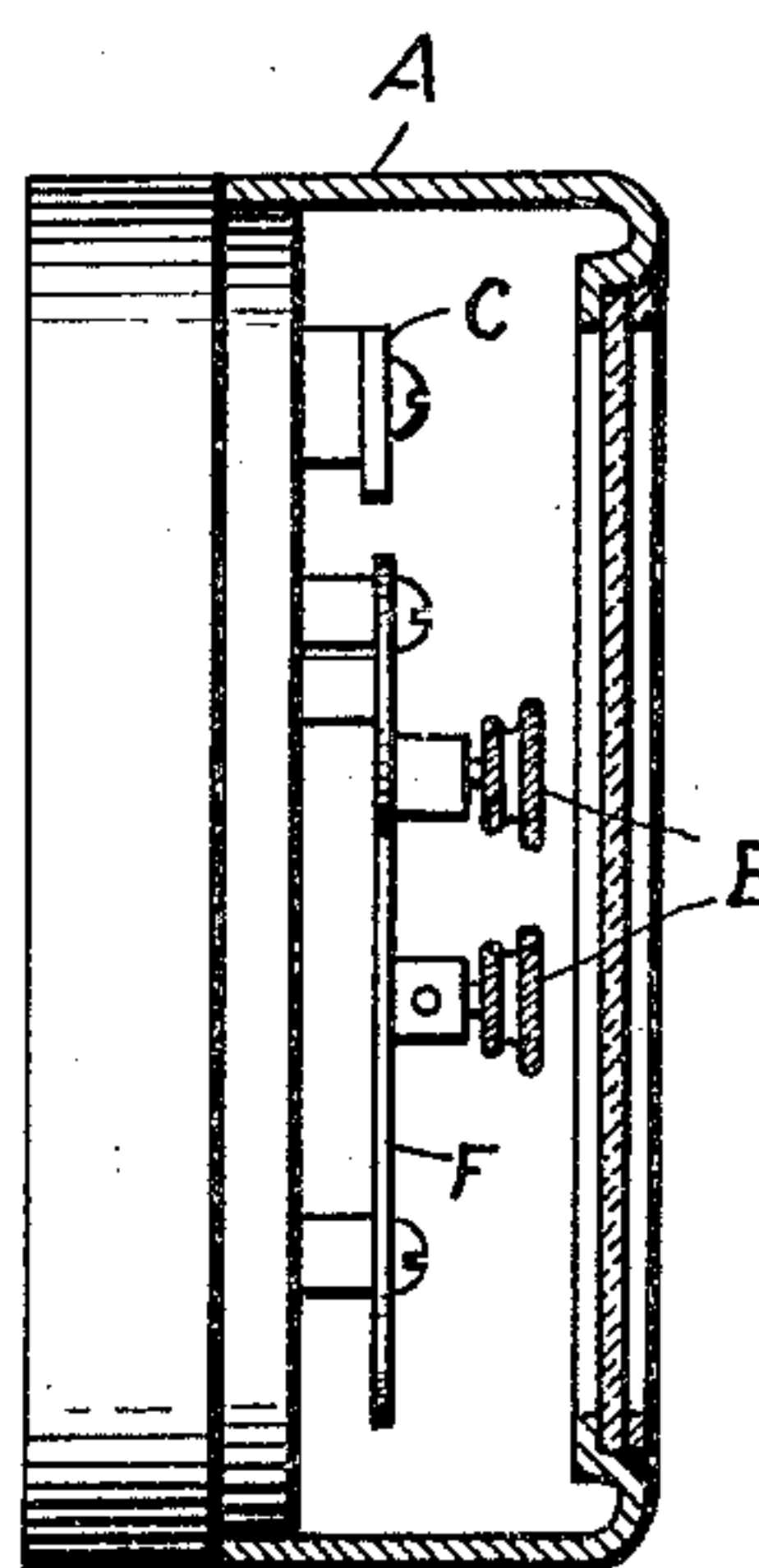


Fig. 4

Witnesses
Lloyd C. Bush
Helen Arford

Inventor
Maurice J. Wohl
by Albert H. Davis
att'y

UNITED STATES PATENT OFFICE.

MAURICE J. WOHL, OF BROOKLYN, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

MAXIMUM-CURRENT-INDICATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 793,491, dated June 27, 1905.

Application filed November 21, 1904. Serial No. 233,623.

To all whom it may concern:

Be it known that I, MAURICE J. WOHL, a citizen of the United States, residing at Brooklyn, county of Kings, State of New York, have
 5 invented certain new and useful Improvements in Maximum-Current-Indicating Devices, of which the following is a specification.

My invention relates to current-indicating devices for electric circuits; and its object is
 10 to provide a simple, economical, efficient, and reliable device for indicating the maximum amount of current that has traversed an electric circuit within a given time.

By my invention all moving parts are eliminated, and the construction of the device is
 15 thereby rendered simpler and more economical.

My invention consists in the combination, with a conductor adapted to be heated by the
 20 flow of current, of material adapted to be discolored or to be caused to undergo some other visible physical or chemical change by the heat from the conductor, the conductor and the sensitized material being so arranged that
 25 different portions of the sensitized material are unequally affected by a given current through the conductor. Thus the sensitized material may be arranged with its several portions at equal distances from a uniform conductor or the material may be arranged at a
 30 uniform distance from a conductor, so arranged that different portions are unequally heated by the same current.

My invention will best be understood by
 35 reference to the accompanying drawings, in which—

Figure 1 shows a front elevation of a maximum-current-indicating device arranged in
 40 accordance with my invention. Fig. 2 shows a side elevation of the same. Fig. 3 shows a front elevation of a modified form, and Fig. 4 shows a side elevation of the same.

In Figs. 1 and 2, A represents a suitable casing, within which is mounted a strip B,
 45 stretched between the supporting-pins *b b* and carrying a material adapted to be affected visibly by heat. For this purpose I have found that a ten-per-cent. solution of sulfuric acid containing a little sugar, applied to a strip of

non-absorbent paper or cardboard, is especially suitable. Other materials—such, for
 instance, as a saturated solution of bicarbonate of soda—may be employed. C represents
 a scale which is placed adjacent to the sensitized strip B. This strip may be calibrated
 55 in amperes, so that the discoloration or other change in the sensitized strip for a given portion of its length will correspond to a current-flow of a given amount, as indicated on the
 scale C. Adjacent to sensitized strip B and at
 60 an angle to the plane of the strip is the hot wire D, which is stretched between the supporting-posts *b d*. It is evident that if this wire is of uniform diameter and is traversed
 by a given current the wire will be uniformly
 65 heated, and since the wire makes an angle with the plane of the sensitized strip the several portions of the sensitized strip will be
 unequally heated by the current in the wire. Consequently a discoloration of the strip will
 70 be produced, beginning at its left-hand end and extending a distance depending upon the heat of the wire D. The length of this discoloration or other change, as measured by the
 scale C, will give the maximum current-flow
 75 through the circuit in which the wire D is connected.

I have shown the device provided with suitable binding-posts E, which are connected by
 the leads *e e* to the supporting-posts *d d* for
 80 the hot wire.

Instead of arranging the sensitized material at an angle to the heated conductor the conductor and strip may be placed parallel to
 each other and the heated conductor so arranged
 85 that it will be unequally heated throughout its length, the only necessary condition being that the several portions of the sensitized material shall be unequally heated
 by a given current in the conductor. Such
 90 an arrangement is shown in Fig. 3, in which in place of a hot wire of uniform cross-section a flat triangular conductor F is employed.
 It is evident that a given current strength
 will produce a greater heat near the apex of
 95 the triangle than near the base, and this difference in heat may be utilized to produce a change in the sensitized material supported

at a uniform distance from the conductor. This sensitized material may be applied to a strip mounted parallel with the flat conductor F, or it may be applied directly to the conductor as a coating. In either case a scale C, arranged as shown, will indicate the maximum current-flow through the conductor.

Other modifications may be made in the arrangement of the device, and consequently I do not desire to limit myself to the particular construction and arrangement of parts here shown, but aim in the appended claims to cover all modifications which are within the scope of my invention.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a maximum-current-indicating device, a conductor, and material disposed adjacent to the conductor adapted to be affected visibly by heat due to the flow of current in the conductor, said conductor and said material being so disposed that different portions of the material are unequally heated by a given current-flow in the conductor.

2. In a maximum-current-indicating device, material adapted to be affected visibly by heat, and means for producing an unequal heating of different portions of said material for a given flow of current through the device.

3. In a maximum-current-indicating device, material adapted to be affected visibly by heat, means for producing an unequal

heating of different portions of said material for a given flow of current through the device, and a graduated scale adjacent to the unequally-heated portions of said material.

4. In a maximum-current-indicating device, a strip coated with a material adapted to be discolored by heat, and a conductor adjacent to said strip arranged to produce an unequal heating of different portions of said strip for a given flow of current through the conductor.

5. In a maximum-current-indicating device, a strip coated with a weak solution of sulfuric acid and sugar, and a conductor adjacent to said strip arranged to produce an unequal heating of different portions of said strip for a given flow of current through said conductor.

6. In a maximum-current-indicating device, a strip coated with a weak solution of sulfuric acid and sugar, a conductor adjacent to said strip arranged to produce an unequal heating of different portions of said strip for a given flow of current through said conductor, and a graduated scale adjacent to said strip.

In witness whereof I have hereunto set my hand this 11th day of November, 1904.

MAURICE J. WOHL.

Witnesses:

WM. P. COOK,

GEORGE EBELING.