No. 677,980. Patented July 9, 1901.

C. D. HASKINS.

MAXIMUM CURRENT INDICATOR.

(Application filed Jan. 29, 1901.)

(No Model.)

Fig. 1.

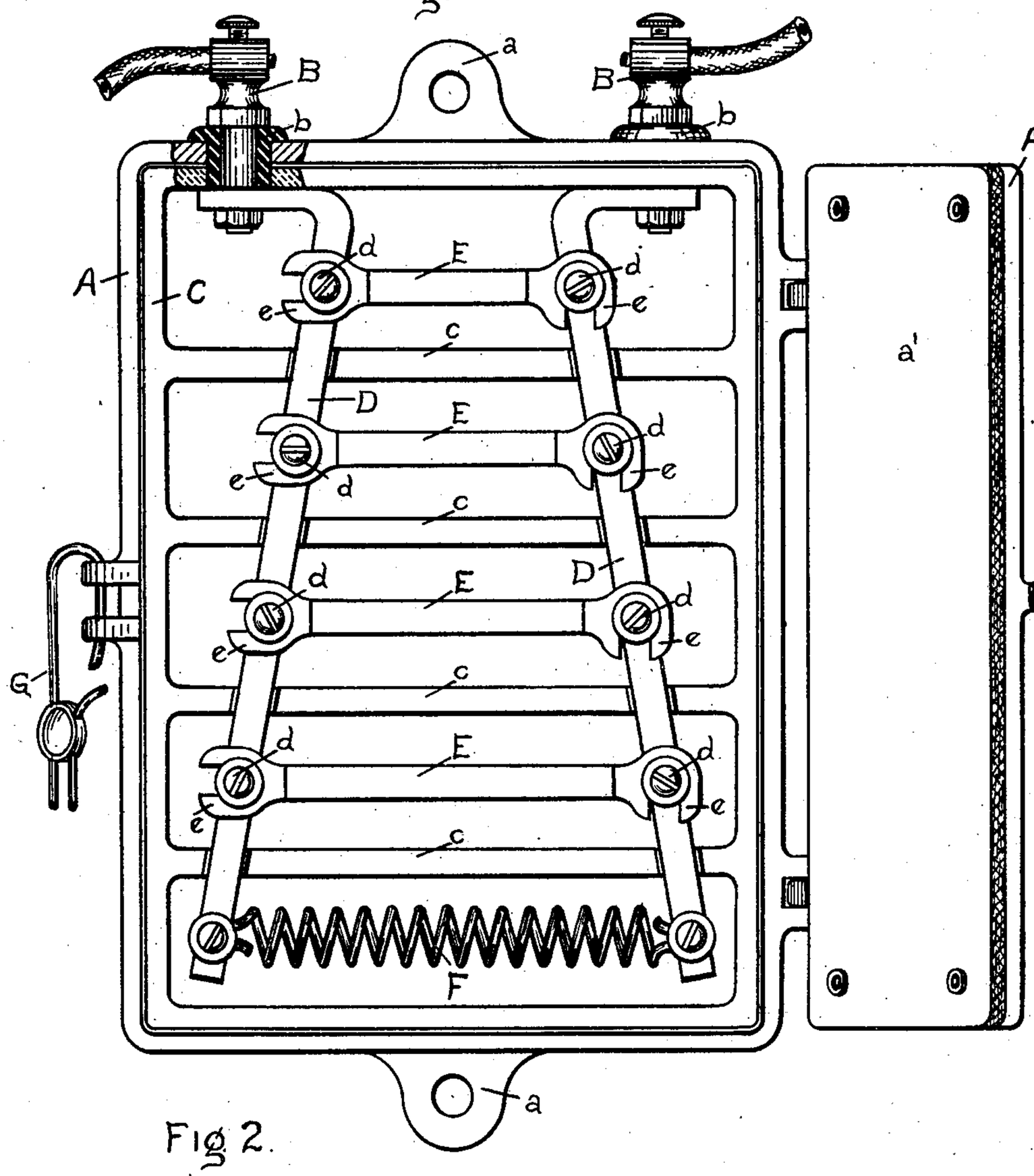
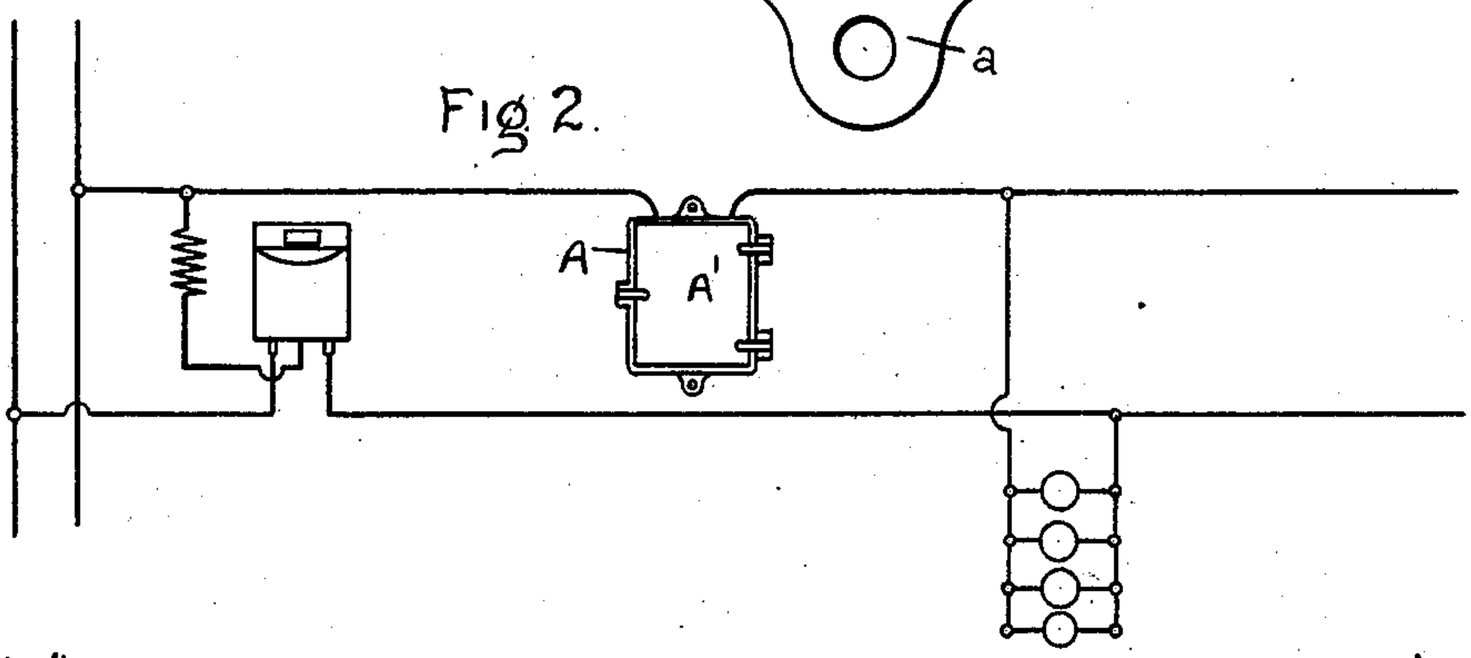


Fig 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

CARYL D. HASKINS, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, OF NEW YORK.

MAXIMUM-CURRENT INDICATOR.

SPECIFICATION forming part of Letters Patent No. 677,980, dated July 9, 1901.

Application filed January 29, 1901. Serial No. 45,186. (No model.)

To all whom it may concern:

Be it known that I, CARYL D. HASKINS, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Maximum-Current Indicators, (Case No. 1,832,) of which the following is a specification.

This invention relates to apparatus for indicating the maximum amount of current which passes through an electric circuit, its object being to enable an inspector to ascertain the greatest current taken by a consumer since the last inspection of the device. It is used particularly on circuits where the maximum-demand system of charging is employed. The current is supplied at a constant potential, and hence the maximum-demand indicator in connection with the usual ampere-hour meter or watt-hour meter gives the data from which to calculate the average number of hours per day during a given period that the consumer has used the maximum-demand supply. Since it costs less in proportion to supply a small amount of current for several hours per day than it does a large amount of current for one hour or less a day, the maximum-demand indicator is valuable in enabling the power-producer to determine what he shall charge any particular customer in order to make a profit.

The invention consists in a plurality of fusible filaments connected in multiple and introduced into one of the line conductors, the resistance, carrying capacity, and melting-point of the several filaments being so proportioned to each other that they will burn off in succession as the load increases by successive predetermined increments. A conductor of good carrying capacity is connected in multiple with the fusible filaments to prevent the circuit from being opened in case all the filaments burn out. When a customer turns on his supply, the weakest filament will burn off when the current used reaches a given value, and if the load is increased still further the other filaments will burn out in succession as the load reaches higher given values. An inspector is thus enabled to tell at a glance the maximum current a customer has used.

In the accompanying drawings, Figure 1 is a front elevation of a maximum-current indicator embodying my invention. Fig. 2 is a diagram of a lighting-circuit containing one of my indicators and a wattmeter.

The apparatus is inclosed in a case A, which may be provided with lugs *a* for securing it to a suitable support. On the wall of the case are two line-terminal binding-posts B, suitably insulated, as by bushings *b*, of rubber, porcelain, or the like. The case has a lining C, as of porcelain, preferably divided into compartments by partitions *c*. Two metal bars D are supported in notches in the upper edges of the partitions and intersecting the compartments preferably on divergent lines, as shown. One end of each bar is electrically connected with a binding-post B. The bars are electrically connected together by a plurality of fusible strips or filaments E, preferably provided with notched copper tips *e*, adapted to be engaged by clamping-screws *d*, tapped into the bars D. Each filament occupies its own compartment. In one of the compartments the bars are connected by a conductor of comparatively higher resistance, but good carrying capacity, such as a coil of German-silver wire F. On the inside of the lid A′ of the case is a lining *a*′, of asbestos or the like, which when the lid is closed shuts against the tops of the partitions and isolates each filament from the others, so that when it burns out it will not affect them. The lid can be suitably locked, as by a hasp a^2 and seal G.

The filaments E are of different low resistances and low carrying capacities, being arranged, preferably, in the order of their melting-points. Suppose the maximum current which the customer is expected to take is twenty-five amperes. Then the first filament—say the upper one in Fig. 1—will be proportioned to melt when the total current through the apparatus reaches, say, five amperes. The second filament will melt when the total current is ten amperes, the third at twenty, and the fourth at an overload of thirty amperes. If an inspector finds that one or more filaments have burned out, he knows at once the maximum current which the customer has used since his last inspec-

tion of the device and can then calculate the proper charges, as explained above.

It will be seen that the fusible filaments need not carry the whole current, since it is only necessary that they be so composed and proportioned that when the total current through them and the wire coil rises successively to predetermined values the fuses shall blow in a certain succession. One of them, as mentioned above, may be set to melt only on an overload, say, of thirty amperes.

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

1. A maximum-current indicator comprising a plurality of fusible filaments arranged in multiple.

2. A maximum-current indicator comprising a plurality of fusible filaments of different melting-points connected in multiple.

3. A maximum-current indicator comprising a plurality of fusible filaments of different melting-points, and a conductor having a comparatively higher resistance but good carrying capacity, all connected in multiple.

4. A maximum-current indicator comprising two metal bars, and a plurality of fusible filaments each connected to both of said bars.

5. A maximum-current indicator comprising two metal bars, and a plurality of fusible filaments of different melting-points, each connected with both of said bars.

6. A maximum-current indicator comprising a case having an insulating-lining and divided into compartments, and a fusible filament in each compartment, all connected in multiple.

7. A maximum-current indicator comprising a case having an insulating-lining and divided into compartments, a conductor common to all said compartments, and a fusible filament in each compartment connected with said conductor, said conductor being for a portion of its length, of comparatively higher resistance than the fuses, but of good carrying capacity.

8. A maximum-current indicator comprising a case having an insulating-lining and divided into compartments by insulating portions having notches in their upper edges, metal bars lying in said notches, and a fusible filament in each compartment connected with said bars.

9. The combination with a case having a lid provided with an insulating-lining, of an insulating-lining for the box containing partitions, conducting-bars intersecting said compartments, binding-posts in the wall of the case connecting with said bars, and a plurality of fusible filaments of different melting-points connected with said bars and separated by said partitions.

In witness whereof I have hereunto set my hand this 28th day of January, 1901.

CARYL D. HASKINS.

Witnesses:
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