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P. MEYER, H. HARTMANN & R. ABRAHAMSOHN.

ELECTRICAL HOT WIRE MEASURING INSTRUMENT.

(Application filed June 1, 1901.)

(No Model.)

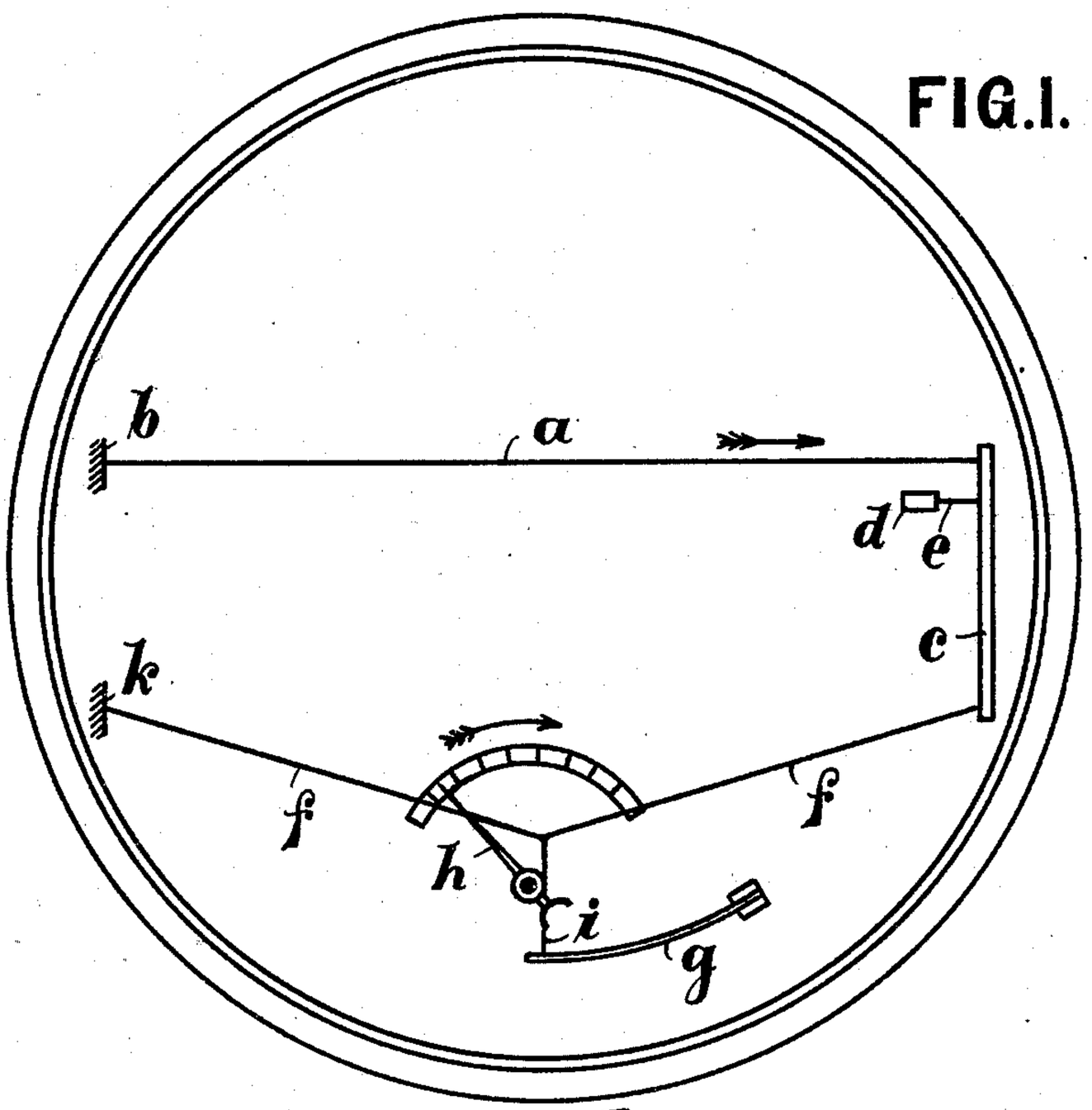

FIG. 1.

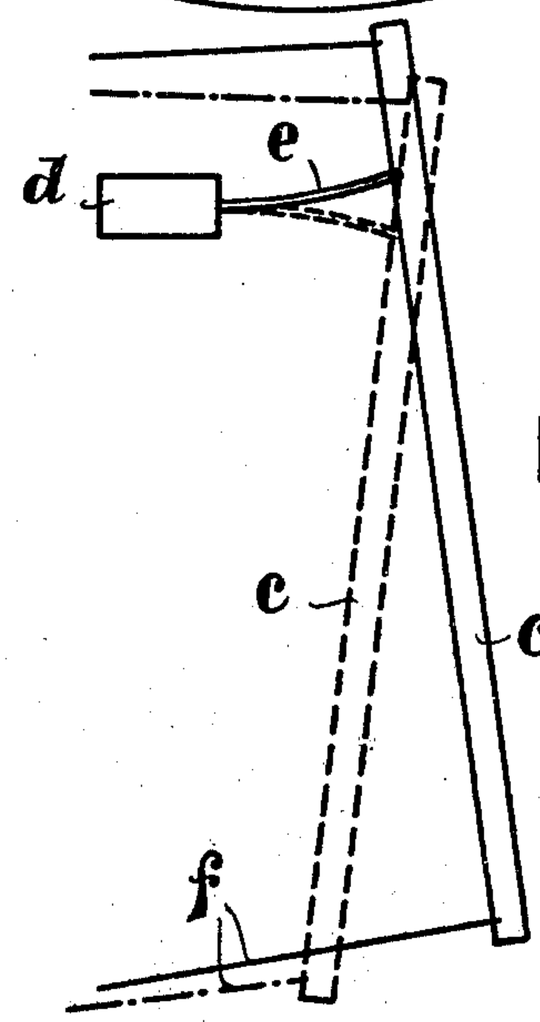

FIG. 2.

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ELECTRICAL HOT-WIRE-MEASURING INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 679,769, dated August 6, 1901.

Application filed June 1, 1901. Serial No. 62,799. (No model.)

To all whom it may concern:

Be it known that we, PAUL MEYER, engineer, residing at Altonaerstrasse 30, Berlin, N. W., and HEINRICH HARTMANN, engineer, residing at Brücken-Allee 10, Berlin, W., and ROBERT ABRAHAMSOHN, engineer, residing at Blumes Hof 2, Berlin, W., Germany, subjects of the German Emperor, have invented certain new and useful Improvements in Electrical Hot-Wire-Measuring Instruments, of which the following is a full, clear, and exact description.

The present invention relates to hot-wire-measuring instruments which are operated only by the linear expansion of the wires heated by the current; and it consists in employing a leaf-spring which serves both to stretch the hot wire and to support a lever actuating the indicator.

The new hot-wire-measuring instrument is illustrated in Figure 1 of the accompanying drawings. Fig. 2 shows the method of operation of the leaf-spring.

The hot wire *a* is stretched between the terminal *b* and one end of the lever *c*. This lever is supported by the leaf-spring *e*, fixed in the support *d*. To the other and longer arm of the lever *c* is attached the tension-wire *f*, which keeps a spring *g* stretched by means of the thread *i* wound around the drum of the needle *h*. When the hot wire *a* expands lengthwise owing to the heat developed by the current, the leaf-spring *e* operates in manner indicated in Fig. 2 and the lever mechanism is brought out of the position shown in full lines into that indicated in dotted lines. By this arrangement the longer arm of the lever *c* moves and produces a deflection of the needle by means of the tension-wire *f* and the thread *i*. The spring *g* need only be strong enough to take up this expansion of the tension-wire and to rotate the needle.

The described instrument presents a great simplification in the construction. The leaf-spring answers to two purposes: Said spring is both a tension-spring and a support of the lever system, so that by the said spring having two functions, two elements, one of which could introduce errors into the readings of the instrument by means of friction, are combined into one. Further, the arrangement itself is practically free from any friction except inner (molecular) friction, which need not be considered.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In hot-wire-measuring instruments the combination of a two-armed lever to one end of which is attached the hot wire, and to the other end the tension-wire operating the needle, with a sheet-metal spring, which supports said lever, takes up linear expansion of the hot wire and forms a frictionless center of rotation of the lever, substantially as set forth and described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

PAUL MEYER.
HEINRICH HARTMANN.
ROBERT ABRAHAMSOHN.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.