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Complete Specification Left, 4th June, 1909—Accepted, 30th Sept., 1909

PROVISIONAL SPECIFICATION.

Improvements in Electric Clocks.

I, THOMAS JOHN MURDAY, of 32, Avonwick Road, Hounslow, Middlesex, Electrical Engineer, do hereby declare the nature of this invention to be as follows:—

The chief feature of this invention is in the application of a cam, or eccentric, 5 on the arbor of a rotary, or centrally pivoted, armature as a means of giving motion to the main wheel of a secondary dial movement—either indirectly, as in Fig. 1, through the medium of a pivoted lever; or, directly as shown in Fig. 2.

10 *a* represents an electro magnet which is energised by currents of short duration transmitted from a master clock, or controller, at regular intervals, for instance, every half minute. The armature *b* is pivoted centrally between the shaped pole pieces of the electro magnet *a*, and is arranged to be rotated, when the magnet is energised, from the position of rest, as shown in Figs. 1 and 2, through an angle of about 70 degrees until the spring or buffer stop *n* 15 strikes against the projecting corner of the left hand pole piece. As this movement takes place the cam *d* on the armature arbor raises lever *c*, which is pivoted at *e*, and click *h*, carried by lever *c*, engages with the next tooth of wheel *f*.

The pressure of spring *m* returns lever *c* to its normal position, while, at 20 the same time, click *h* moves wheel *f* with it until *h* rests against stop *k*. Thus, wheel *f* progresses a distance of one tooth at each impulse. A back stop click, 25 indicated at *i*, holds the wheel *f* from moving backwards. The force exerted by spring *m*, transmitted through lever *c* to cam *d*, also causes the armature *b* to return to its normal position, as shown, with spring stop *n* against the right hand pole piece of magnet *a*.

30 A modification of this method is shown in Fig. 2, where it will be seen that lever *c* is dispensed with—click *h* being attached directly to the eccentric or cam on the arbor of *b*. The action is similar to that just described; the motion of armature *b*, when magnet is energised, lifting click *h* on to another tooth of wheel *f*. The return of the armature and propulsion of wheel *f* being accomplished by spring *m*, as already described with reference to Fig. 1.

It will be obvious that this method of propelling of secondary dial mechanisms produces a comparatively easy gentle motion of the moving parts, with consequent safer step by step driving, and an almost total absence of noise.

Dated this 3rd day of December, 1908.

T. J. MURDAY.

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COMPLETE SPECIFICATION.

Improvements in Electric Clocks.

I, THOMAS JOHN MURDAY, of 32, Avonwick Road, Hounslow, Middlesex, Electrical Engineer, do hereby declare the nature of this invention and in [Price 8d.]



Murday's Improvements in Electric Clocks.

what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The chief feature of this invention is in the application of a cam, or eccentric, on the arbor of a rotary, or centrally pivoted, armature as a means of giving motion to the main wheel of a secondary dial movement—either indirectly, as in Fig. 1, through the medium of a pivoted lever; or, directly as shown in Fig. 2, of the drawing accompanying the Provisional Specification. 5

a represents an electro magnet which is energised by currents of short duration transmitted from a master clock, or controller, at regular intervals, for instance, every half minute. The armature *b* is pivoted centrally between the shaped pole pieces of the electro magnet *a*, and is arranged to be rotated, when the magnet is energised, from the position of rest, as shown in Figs. 1 and 2, through an angle of about 70° until the spring or buffer stop *n* strikes against the projecting corner of the left hand pole piece. As this movement takes place the cam *d* on the armature arbor raises lever *c*, which is pivoted at *e*, and click *h*, carried by lever *c*, engages with the next tooth of wheel *f*. The pressure of spring *m* returns lever *c* to its normal position, while, at the same time, click *h* moves wheel *f* with it until *h* rests against stop *k*. Thus, wheel *f* progresses a distance of one tooth at each impulse. A back stop click indicated at *i* holds the wheel *f* from moving backwards. 10 15 20

The force exerted by spring *m*, transmitted through lever *c* to cam *d* also causes the armature *b* to return to its normal position as shown, with spring stop *n* against the right hand pole piece of magnet *a*.

A modification of this method is shown in Fig. 2, where it will be seen that lever *c* is dispensed with—click *h* being attached directly to the eccentric or cam on the arbor of *b*. The action is similar to that just described—the motion of armature *b*, when magnet is energised, lifting click *h* on to another tooth of wheel *f*; the return of the armature and propulsion of wheel *f* being accomplished by spring *m*, as already described with reference to Fig. 1. 25

It will be obvious that this method of propelling of secondary dial mechanisms produces a comparatively easy gentle motion of the moving parts, with consequent safer step by step driving, and an almost total absence of noise. 30

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:— 35

(1) In a secondary electric clock mechanism the arrangement of a centrally pivoted armature having on its arbor a cam or eccentric working against a click lever in such manner that, on the magnet being energised, the said lever is moved through a distance sufficient to enable its click to engage with another tooth of a ratchet wheel; the return of the click lever to a position of rest, 40 carrying with it the ratchet wheel, being accomplished by the use of a spring.

(2) In a secondary electric clock mechanism the use of an eccentric, on the arbor of a rotatory armature carrying a driving click arranged so as to move through a distance sufficient to pick up another tooth of the ratchet wheel when magnet is energised and armature rotated; a spring returning said click and armature to a position of rest, and, in so doing, propelling the ratchet wheel forward a distance of one tooth. 45

(3) In a secondary electric clock mechanism, the construction and arrangement of parts, substantially as described and shown herein, for the purpose specified. 50

Dated this 3rd day of June, 1909.

T. J. MURDAY.

FIG: 1.

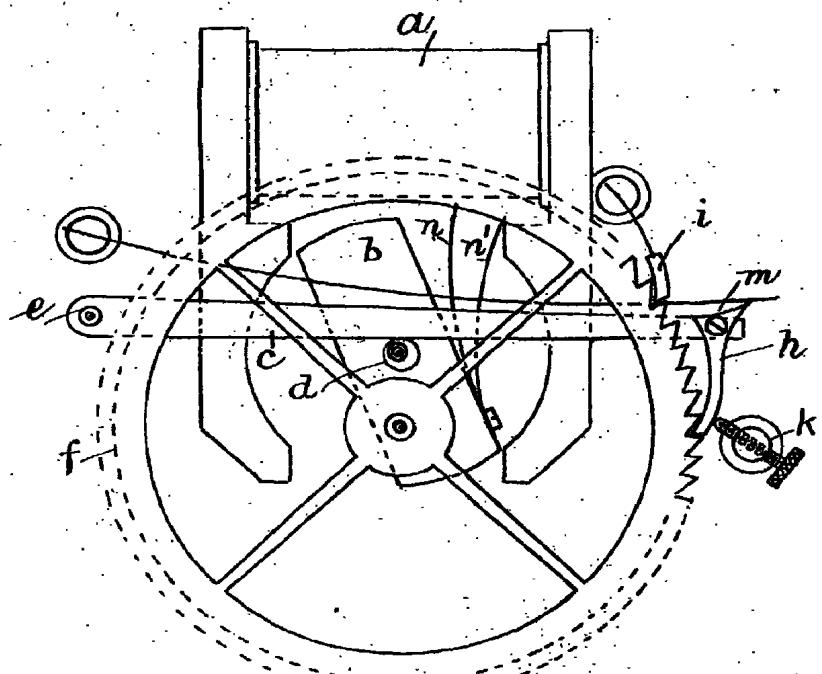
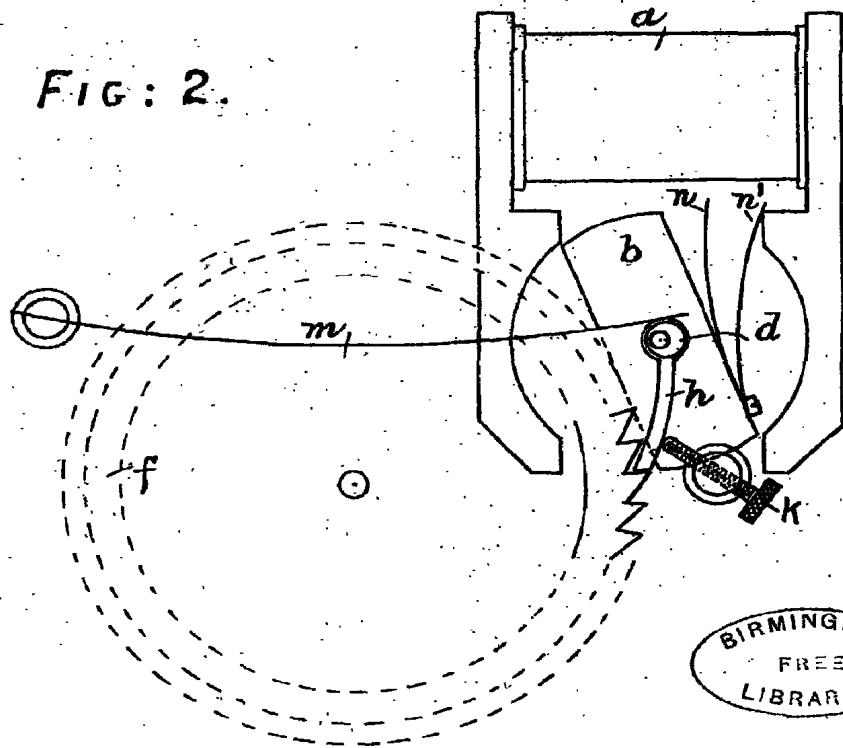


FIG: 2.



[This Drawing is a reproduction of the Original on a reduced scale.]