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COMPLETE SPECIFICATION.

Electromagnetic Driving Gear for Clocks.

I, JAN LAMERIS, of 6, Torenstraat, Winschoten, Holland, Clockmaker, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

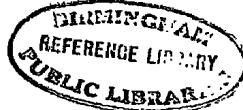
5 The present invention relates to electromagnetic driving gear for clocks operated by periodic reversals of electric current, and comprises a device wherein a bar-shaped electromagnet is adapted to coact with two permanent magnets which are positively connected together and adapted to perform a swinging motion opposite the poles of the said electromagnet respectively, 10 the motion of the said permanent magnets being transmitted by suitable means to the gear to be driven. The said means for transmitting the swinging motion of the permanent magnets preferably comprise two pivotally mounted levers positively coupled to the permanent magnets and each adapted to act both as a thruster and as a ratchet upon a toothed wheel, with which 15 they are adapted to be alternatively brought into and out of engagement.

It is not new in devices of the type referred to to use a horse-shoe electromagnet in combination with one permanent magnet or polarized armature, whereas it has also been proposed to use a bar-shaped electromagnet for actuating two polarized tongues pivotally mounted independent of one 20 another. It is new however to pivotally mount two positively inter-connected permanent magnets opposite the poles of a bar-shaped electromagnet in the manner as stated above.

The accompanying drawing shows one embodiment of the invention.

On the shaft *a* of the spring barrel (not shown) is loosely mounted a toothed 25 wheel *c* having 30 teeth arranged on its circumference. The toothed wheel *c* is connected to the inner end of the driving spring *d* in the said barrel, and has for its object to put the spring *d* under periodic tension at intervals of one minute each in case the wheel *c* has thirty teeth as shown. The toothed wheel *c* is driven by two levers *g*, *g*¹, journalled at *f* and *f*¹ respectively and 30 both acting alternately as a thruster and as a ratchet. The ends *i* of the levers *g*, *g*¹, are bent at about right angles and are each provided with an antifriction roller *h*, *h*¹, the levers being arranged so as to alternately engage the spaces between the teeth of wheel *c*, the latter being held in its respective 35 positions by the levers *g*, *g*¹ with their antifriction rollers *h*, *h*¹ engaging a cut-away portion *c*¹ at the root of the teeth *c*². By means of links *k*, *k*¹, the levers *g*, *g*¹ are both connected to a part *m*, journalled at *l* and having its heads formed as permanent magnets *o*, *o*¹ in such a way that the north pole of the one permanent magnet is arranged diametrically in respect to the south pole of the other. The alternative swinging movement of the part *m* is

[Price 6d.]



limited by the walls of the cut-away portions p , p^1 in the permanent magnets o , o^1 coming into contact with the correspondingly formed electromagnetic poles q , q^1 . The poles of the electromagnet r are by periodic reversals of electric current alternatively magnetised positive and negative, so that two diametrically arranged poles of the permanent magnets are always attracted, and the two others repelled. These motions are transmitted by the links k , k^1 and the levers g , g^1 to the toothed wheel c . 5

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:—

1. A driving mechanism for clocks of the type referred to, in which opposite each pole of a bar-shaped electromagnet a permanent magnet is adapted to perform an alternate swinging motion, the two permanent magnets being positively connected together.

2. A driving mechanism according to Claim 1, wherein the permanent magnets are positively connected with levers which are mounted on fixed pivots and adapted to be alternately forced into and out of engagement with the gear to be driven.

3. The improved electromagnetic driving gear for clocks, substantially as hereinbefore described and as illustrated in the accompanying drawings.

Dated this 11th day of February, 1916.

MARKS & CLERK.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1916.

[This Drawing is a full-size reproduction of the Original.]

