N° 15,461 A.D. 1901

Date of Application, 30th July, 1901

Complete Specification Left, 4th Nov., 1901—Accepted, 9th Jan., 1902

PROVISIONAL SPECIFICATION.

Improvements in Electric Clocks.

(A communication from abroad by the ACTIENGESELLSCHAFT "MAGNETA" (elektrische Uhren ohne Batterie und ohne Contacte) of Zürich, Switzerland.)

I, WILLIAM LLOYD WISE, of 46, Lincoln's Inn Fields, in the County of London, Consulting Engineer and Chartered Patent Agent, do hereby declare the nature of this invention to be as follows:—

This invention relates to a current-producing magneto-electric clock with an armature caused to oscillate by means of the going train, and according thereto the armature or armatures is or are stopped in its or their movements after each change of polarity and the momentum of the armature acts against the oscillations on one or more springs, for the purpose, on the one hand, of obviating shocks to the mechanism, and on the other hand of utilising the inertia of the armature.

An example of a clock according to this invention is shown in the accompanying drawings, Fig. 1 being an elevation, and Fig. 2 a plan.

5 denotes a releasing lever, which is operated at certain intervals,—for example,—every minute—in a known manner by the going train of an ordinary clock and thus causes the crank 6, which is driven by a spring or by weights through a train of wheels, to rotate each time through a half revolution. The crank is connected by means of the link 7 to one arm of an armature, so that each time the crank 6 is operated, the armature is suddenly moved to-and-fro. On the armature shaft there is mounted an arm 3 which, at each oscillation of the armature, acts against the oscillatory movement by means of a pin 4 which compresses one or the other of the two springs 8.

By stopping the armature in its movements by means of the springs, shocks, which might damage the mechanism are avoided, whilst, on the other hand, by compressing the springs, the inertia of the armature is stored, and is utilized, when the lever 5 is again released, to start the oscillation of the armature. By this means the energy of the weights or springs, which acts on the crank 6 and serves for moving the armature, can be reduced to a minimum and very light armatures can be used. Previous master clocks in which an armature is moved by weight or spring power act in such a way that the armature is forced each time to make a half revolution. But the greater portion of this revolution is valueless, since there is an effective current impulse only when the polarity of the armature is suddenly reversed, whilst the remainder of the movement represents lost energy. In such master clocks the armature is stopped suddenly at each half revolution, thereby causing a hard noisy blow and a rebound of the armature, and transmitting shocks to the mechanism. These disadvantages (shocks and wasted energy) are obviated by means of the mechanism hereinbefore described, since the armature does not make a half revolution, but only a slight to-and-fro movement, and the movement of the armature is stopped by means of springs.

Dated this 30th day of July 1901

W. LLOYD WISE,
46 Lincoln's Inn Fields, London, W.C.
Chartered Patent Agent.

[*Price 8d.*]

COMPLETE SPECIFICATION.

Improvements in Electric Clocks.

(A communication from abroad by the ACTIENGESELLSCHAFT "MAGNETA" (elektrische Uhren ohne Batterie und ohne Contacte) of Zürich, Switzerland.)

I, WILLIAM LLOYD WISE, of 46 Lincoln's Inn Fields, in the County of London, Consulting Engineer and Chartered Patent Agent, 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;—

This invention relates to a current-producing magneto-electric clock with an armature or armatures caused to oscillate by means of the going train, and according thereto the armature or armatures is or are stopped in its or their movements after each change of polarity and the momentum of the armature or armatures acts towards the close of each semi-oscillation on one or more springs, for the purpose, on the one hand, of obviating shocks to the mechanism, and on the other hand of utilizing the inertia of the armature or armatures.

An example of a clock according to this invention is shown in the drawings filed with my Provisional Specification, Fig. 1 being an elevation and Fig. 2 a plan.

5 denotes a releasing lever, which is operated at certain intervals—for example, every minute—in a known manner by the going train of an ordinary clock and thus causes the crank 6, which is driven by a spring or by weights through a train of wheels, to rotate each time through a half-revolution. The crank is connected by means of the link 7 to one arm of an armature, so that each time the crank 6 is operated, the armature is suddenly moved to or fro On the armature shaft there is mounted an arm 3 which, at each oscillation of the armature, acts against the oscillatory movement by means of a pin 4 which compresses one or the other of the two springs 8.

By stopping the armature in its movements by means of the springs, shocks, which might damage the mechanism, are avoided, whilst, on the other hand, by compressing the springs, the inertia of the armature is stored, and is utilized, when the lever 5 is again released, to start the oscillation of the armature. By this means the energy of the weights or springs, which acts on the crank 6 and serves for moving the armature, can be reduced to a minimum and very light armatures can be used. Previous master clocks in which an armature is moved by weight or spring power act in such a way that the armature is forced each time to make a half revolution; but the greater portion of this revolution is valueless, since there is an effective current impulse only when the polarity of the armature is suddenly reversed, whilst the remainder of the movement represents lost energy. In such master clocks the armature is stopped suddenly at each half revolution, and consequently causes a hard noisy blow and a rebound of the armature, and transmits shocks to the mechanism. These disadvantages (shocks and wasted energy) are obviated by means of the mechanism hereinbefore described, since the armature does not make a half revolution, but only a slight to-and-fro movement, and the movement of the armature is stopped by means of springs.

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

1. A master-clock magnetic inductor comprising an armature or armatures moved to-and-fro by the going train of the clock and adapted to produce induction currents wherein, after each change of polarity, the armature or armatures

is or are stopped in its or their movements by a spring or springs so as to prevent injurious shocks to the mechanism and to store up in the spring or springs the inertia of the armature or armatures and to enable it to be utilized in the succeeding movement of the armature or armatures.

2. The improved master-clock magnetic inductor constructed, arranged, and operating as hereinbefore described with reference to and shown in the drawings filed with my Provisional Specification.

Dated this 4th day of November 1901

W. LLOYD WISE,
46 Lincoln's Inn Fields, London, W.C.
Chartered Patent Agent.

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WISE'S PROVISIONAL SPECIFICATION. (1 SHEET)

Fig. 1.

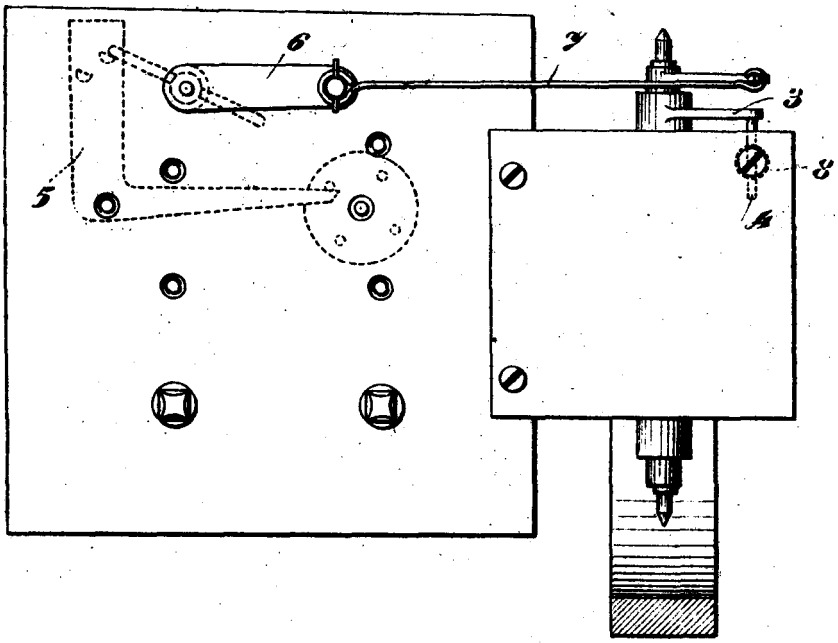
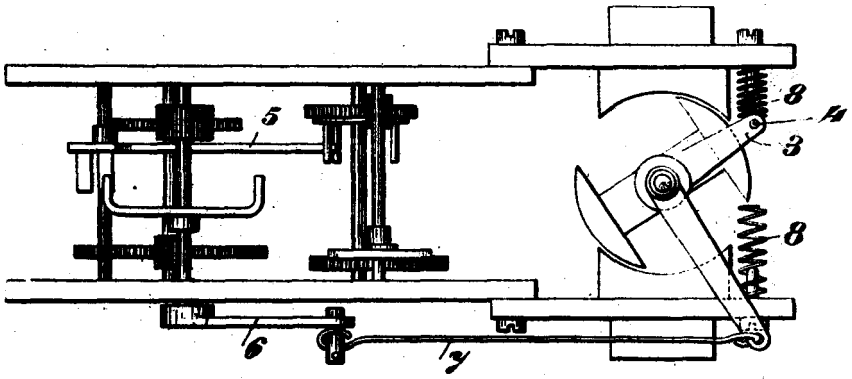


Fig. 2



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

Malby & Sons, Photo-Litho.