PATENT SPECIFICATION

DRAWINGS ATTACHED

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894,267

Date of filing Complete Specification: June 29, 1960.

Application Date: July 17, 1959. *No. 24631/59.*

Complete Specification Published: April 18, 1962.

Index at acceptance:—Class 139, A5D.
International Classification:—G04c.

COMPLETE SPECIFICATION

Improvements in Master Clocks

We, THE SYNCHRONOME COMPANY LIMITED, a British Company, of Abbey Electric Clock Works, Woodside Place, Mount Pleasant, Alperton, Wembley, Middlesex, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to master clocks of the kind in which a mechanism is operated under the control of a pendulum to give out electric pulses which are received by a number of slave clocks so that they are advanced in half minute or minute intervals or any other suitable time interval as specified.

In master clocks of this kind the pendulum is arranged to operate a relay once every half minute for example, in order that the hands of the slave clocks are moved accordingly. It is desirable on certain occasions, such as for advancing the clocks by one hour for British Summer Time or when a series of clocks has just been installed, to advance the hands of the clocks rapidly. An advanced mechanism is therefore provided to enable all the clocks to be advanced rapidly and simultaneously.

According to the invention we provide a master clock of the kind hereinbefore defined comprising an electric pulse control device operated by a first member on the actuation thereof by a second member connected to a pendulum, said first member being actuated when in a normal position thereof once after every predetermined number of cycles of the pendulum has occurred, and means engageable with said first member to move the latter into a second position where it is actuated by said second member once every complete cycle of the pendulum, thereby operating the control device on every complete cycle of the pendulum.

A constructional form of the invention will now be described by way of example with reference to the accompanying drawing in which the single figure shows the pendulum controlled pulse mechanism.

The master clock is provided with the usual pendulum 10 which drives by way of a driving member or pawl 11 pivotally attached to it, a wheel 12 which is provided with a number of teeth 13 of equal depth except one tooth 14 which is deeper than the rest. On each swing of the pendulum 10 from right to left the wheel 12 is moved round by one tooth. In this example the pendulum completes a swing in three-quarters of a second, there are 80 swings per minute. In the case of minute impulses all thirty-nine teeth on the wheel are of equal depth whilst the fortieth tooth is deeper than the others. A back stop 25 is provided to steady the wheel 12.

An operating member in the form of a lever 15 is pivotally mounted at 16 to one arm 17 of a double contact device 20 which controls the pulse to the slave clocks. The lever 15 is parallel with the wheel 12 when viewed in plan, and is supported at its free end by a pin 18 mounted on a stationary part of the clock whereby a notch 19 on the lever coincides with the bottom of the deep tooth 14 of the wheel when the deep tooth 14 is at its highest point.

In this way every time the driving pawl falls into the deep tooth 14, in this example once a minute or every revolution of the wheel, it simultaneously engages the notch 19 on the lever. The lever 15 is then moved by the swinging motion of the pendulum to operate the contact device 20. Contact is broken on the return swing of the pendulum.

For the purpose of advancing the slave clocks, which are slower than the time indicates, the contacts of the contact device are caused to "make" once every complete swing of the pendulum. This is done by providing a pin 21 on the lever 15 which is engageable by a wire lifting member 22 which passes through a guide stud 23 fixed to a stationary part of the master clock housing, which member 22 is

[*Price 4s. 6d.*]

pivotally connected at one end to a manually operable advance lever 24. The latter can be moved to "normal" or to "advance" as desired.

When the advance lever 24 is moved to the "advance" position the free end of the wire member 22 engages the pin 21 on the contact operating lever 15 to raise the latter into a position where the bottom of the notch at the end of said contact operating lever coincides with the bottom of the shallow teeth. The driving pawl therefore engages both the notch and the shallow teeth of the wheel.

In this example the hands of the clocks would be advanced "40 minutes" in one minute.

WHAT WE CLAIM IS:—

1. A master clock of the kind hereinbefore defined comprising an electric pulse control device operated by a first member on the actuation thereof by a second member connected to a pendulum, said first member being actuated when in a normal position thereof once after every predetermined member of cycles of the pendulum has occurred and means engageable with said first member to move the latter into a second position where it is actuated by said second member once every complete cycle of the pendulum thereby operating the control device on every complete cycle of the pendulum.

2. A master clock as claimed in claim 1, wherein said means for moving the operating member into the path of the driving member is an element which is pivoted to a control lever, said element engaging a pin provided on said operating member.

3. A master clock as claimed in claim 2, wherein said element comprises a wire bent over at its upper end, said wire being guided in a stud fixed to a stationary part of the clock.

4. A master clock as claimed in claim 1, 2 or 3, wherein the second member co-operates with a toothed wheel which is formed with at least one deeper tooth than the other teeth, and also co-operates with said first member in the normal position thereof simultaneously with the engagement of the driving member with the deeper tooth.

5. A master clock as claimed in any one of claims 1 to 4, wherein the first member is pivotally connected to one arm of said control device which comprises electric contacts, and is supported in its normal position by a pin fixed to a stationary part of the clock.

6. A master clock of the kind hereinbefore defined substantially as described with reference to the accompanying drawing.

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PROVISIONAL SPECIFICATION

Improvements in Master Clocks

We, THE SYNCHRONOME COMPANY LIMITED, a British Company, of Abbey Electric Clock Works, Woodside Place, Mount Pleasant, Alperton, Wembley, Middlesex, do hereby declare this invention to be described in the following statement:—

This invention relates to master clocks of the kind in which a mechanism is operated under the control of a pendulum to give out electric pulses which are received by a number of slave clocks so that they are advanced in half minute or minute intervals or any other suitable time interval as specified.

In master clocks of this kind the pendulum is arranged to operate a relay once every half minute for example, in order that the hands of the slave clocks are moved accordingly. It is desirable on certain occasions, such as for advancing the clocks by one hour for British Summer Time or when a series of clocks has just been installed, to advance the hands of the clocks rapidly. An advance mechanism is therefore provided to enable all the clocks to be advanced simultaneously.

According to the invention we provide an advance mechanism for master clocks of the kind described, which mechanism is set when required in a position to bring the operating member of an electric pulse control device into the path of a driving member connected directly or indirectly with the pendulum, so that the control device is operated once every complete swing of the pendulum, said operating member being normally in a position to operate the control device once after every predetermined number of swings has occurred.

A constructional form of the invention will now be described by way of example. The master clock is provided with the usual pendulum which drives by way of a driving pawl pivotally attached to it, a wheel which is provided with a number of teeth of equal depth except one tooth which is deeper than the rest. On each swing of the pendulum the wheel is moved round by one tooth. In this example the pendulum completes a swing in three-quarters of a second, there are 40 complete swings per minute. All thirty-nine teeth on the wheel are of equal depth whilst the 40th tooth is deeper than the others.

A lever is pivotally mounted to one arm of a double contact device which controls the pulse to the slave clocks. The lever is parallel with the wheel when viewed in plan and is supported at its free end by a pin mounted on a stationary part of the clock so

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1 SHEET *This drawing is a reproduction of the Original on a reduced scale*