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J. R. PUTNAM

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ELECTRIC CLOCK

Filed March 18, 1932

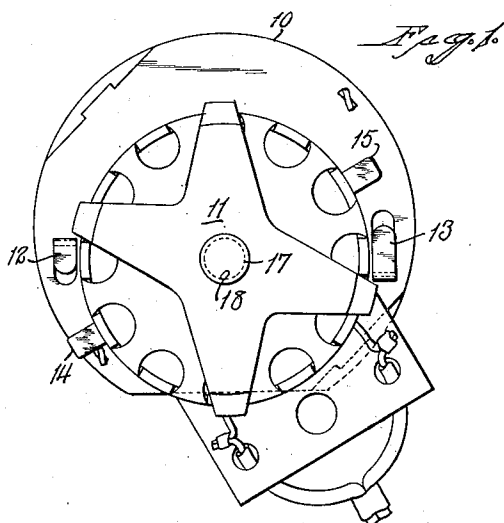
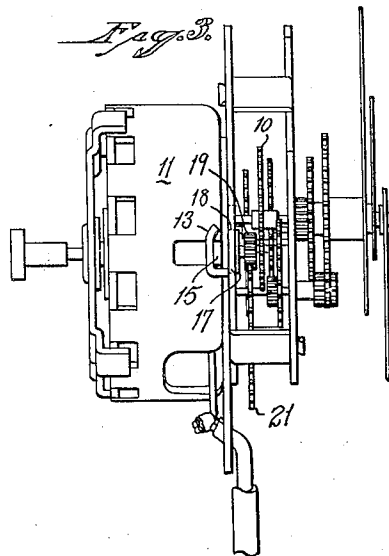


Fig. 2.

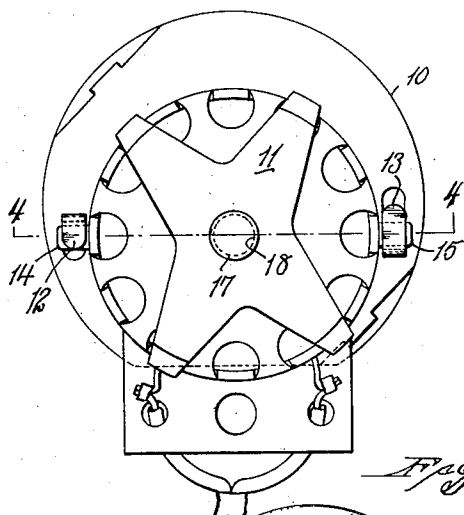
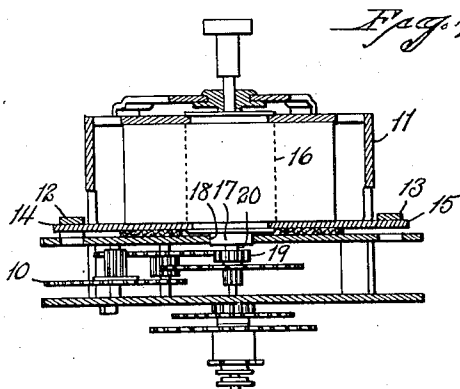
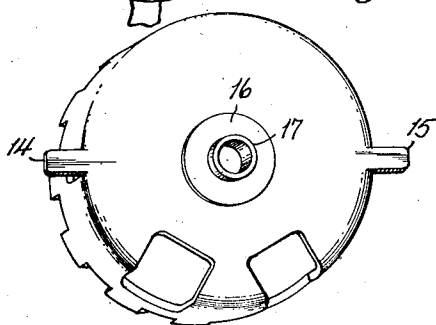
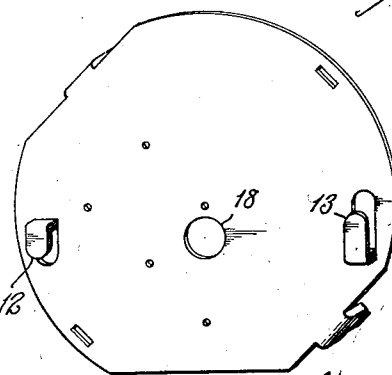


Fig. 6.



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UNITED STATES PATENT OFFICE

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ELECTRIC CLOCK

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My invention relates to an improvement in electric clocks, the object being to provide for completing and testing the clock-units and the motor-units of such clocks in every respect before they are assembled, and then assembling them without the use of tools in such manner that their previously-made final adjustments are in nowise disturbed, whereby the time consumed in their assemblance is reduced to the minimum, and the subsequent regulation and testing of the respective units avoided.

A further object of my invention is to reduce the expense of producing and assembling such units.

With these ends in view, my invention consists in an electric clock having a self-contained clock-unit, a self-contained motor-unit, and complementary fastening-means permanently located upon the respective units and adapted to be interlocked to connect the units upon a slight rotative movement of one or the other or both of them.

My invention further consists in an electric clock having a self-contained clock-unit, a self-contained motor-unit, complementary fastening-means permanently located upon the respective units and adapted to be interlocked to connect the units upon a slight rotative movement of one or the other or both of them, and means associated with the respective units for justifying their interacting driving elements, preparatory to the interlocking of their said fastening-means.

My invention further consists in an electric clock characterized as above and having certain details of construction as will be hereinafter described and particularly pointed out in the claims.

In the accompanying drawing:

Fig. 1 is a view in rear elevation of my improved clock with the motor-unit properly positioned or justified upon the clock-unit for being attached thereto but before its rotation

for the interlocking of their complementary fastening-means;

Fig. 2 is a view thereof after the interlocking has taken place;

Fig. 3 is a view in side elevation of Fig. 2;

Fig. 4 is a view in section on the line 4—4 of Fig. 2;

Fig. 5 is a detached reverse perspective view of the stator of the motor-unit; and

Fig. 6 is a detached perspective view of the rear movement-plate of the clock-unit.

In carrying out my invention as herein shown, the clock-unit, generally designated by the numeral 10, and the motor-unit, generally designated by the numeral 11, whatever their specific construction, with which my present invention is not concerned, are produced as complete self-contained regulated and tested units before their assemblance, the complete motor-unit being furnished with a long cord forming one of its essential features. For the ready assemblance or coupling together of such regulated and tested self-contained clock and motor units, they are respectively provided with permanently-located interlocking fastening-means adapted to be interlocked for firmly coupling the units together by a slight rotative movement of one unit with respect to the other, after they have been relatively justified in position, that is to say, after the driving-member of the clock-unit has been intermeshed with the driving-member of the motor-unit.

As herein shown, the rear movement-plate of the clock-unit is struck up to form oppositely-located rearwardly-projecting assembly-hooks 12 and 13, of which the hook 12 extends downwardly, and the hook 13 extends upwardly and being the longer of the two. The said hooks 12 and 13 as thus produced are located substantially in the plane of the rear movement-plate of the clock-unit. For cooperation with the said hooks 12 and 13, the stator of the motor-unit is provided with two

oppositely-located, straight, radially-extending assembly-fingers 14 and 15 for respective engagement with the said hooks. To provide for the "justification," so to speak, of the two units before they are coupled together, the core 16 of the motor-unit is provided with a hub 17 which, when the two units are brought together, enters a centering-hole 18 in the rear movement-plate of the clock-unit, at which time the pinion 19 upon the shaft 20 of the motor-unit is properly intermeshed with the wheel 21 of the driving-train of the clock-unit.

Now after the two units have been brought together and justified in position as described, a slight rotation of one or the other, or both, of the units will cause the assembly-fingers 14 and 15 to enter the hooks 12 and 13, whereby the said fingers and hooks will be interlocked and the two units firmly coupled together, with the pinion 19 of the motor-unit intermeshed with the wheel 21 of the clock-unit. The two units having thus been firmly coupled together, it is now only necessary to bend the longer hook 13 inwardly so as to confine the finger 15 therein against any tendency to escape therefrom by a counter-rotative movement of one or the other of the two units.

It will thus be seen that the two units may be firmly united without undergoing any handling or operations which will in any wise disturb the previously-made final regulation of the clock-unit or the final regulation and testing of the motor-unit. Thus, the clock-unit may have its clock-dial and hands applied to it before the two movements are assembled. Nor is the coupling of the two units in the slightest degree handicapped by the long cord forming an integral feature of the motor-unit.

By my invention I not only minimize the amount of time required to combine two such units to form an electric clock, but also effect a marked economy in avoiding all the handling, regulating and testing of the units after they have been combined. Under my invention, even the dial and the hands of the clock-unit may, as aforesaid, be installed upon it before it is combined with the motor-unit.

The respective clock and motor units might be provided with, in the scope of my invention, different forms of permanently-located interlocking-members answering the purposes of the hooks 12 and 13 and the fingers 14 and 15, and different justifying means than the hub 17 and the centering or justifying-hole 18 might be resorted to, it being only necessary, to satisfy the purpose of my present invention, to provide for making the two units self-contained and complete in every respect as to construction, regulation and testing, before they are brought together and for being justified in relative position, prepara-

tory to being coupled together by the coaction of their permanently-located respective fastening-means, which are brought into play by a slight rotative movement of one or both of the units.

I would, therefore, have it understood that I do not limit myself to the exact construction herein shown and described, but hold myself at liberty to make such departures therefrom as fall within the spirit and scope of my invention.

I claim:

1. An electric clock, having a self-contained clock-unit having a centering-hole, a self-contained motor-unit, oppositely-extending fastening-hooks located upon the rear movement-plate of the clock-unit, fastening-fingers located upon the stator of the motor-unit in position to respectively enter the said hooks upon the slight rotation of one unit with respect to the other unit, and a centering-hub carried by the motor-unit for entering the centering hole in the clock-unit for justifying the respective units before the said hooks and fingers are interlocked by the rotation of one of the units.

2. An electric clock, having a self-contained clock-unit, the rear movement-plate of which has a centering-hole, a self-contained motor-unit, oppositely-extending integral fastening-hooks located upon the said rear movement-plate of the clock-unit, integral fastening-fingers located upon the stator of the motor-unit in position to enter the said hooks upon the rotation of one of the two units, and a centering-hub carried by the motor-unit for entering the said centering-hole in the said movement-plate of the clock-unit for justifying the respective units before the said hooks and fingers are interlocked by the slight rotation of one of the units with respect to the other unit.

In testimony whereof, I have signed this specification.

JAMES R. PUTNAM.