July 8, 1947. E. BOURQUIN 2,423,680

TIME OUTLET

Filed Aug. 13, 1945

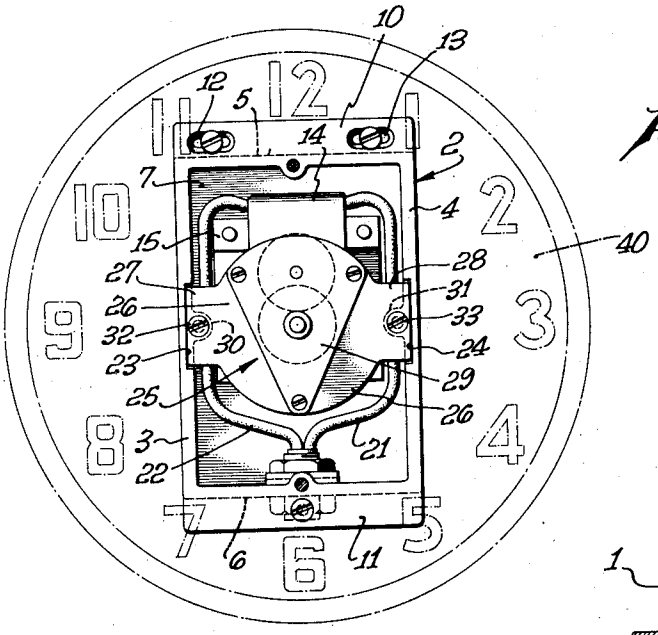


Fig. 1.

Fig. 2.

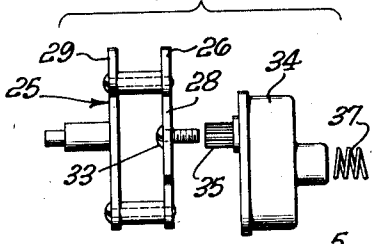


Fig. 3.

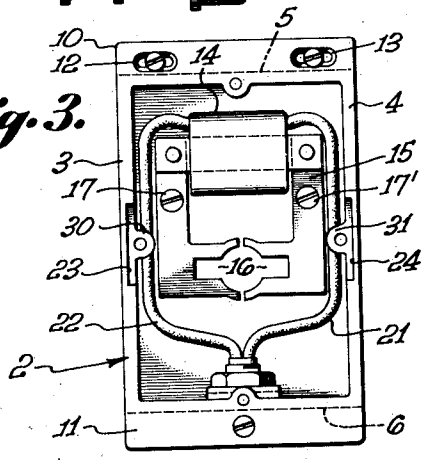
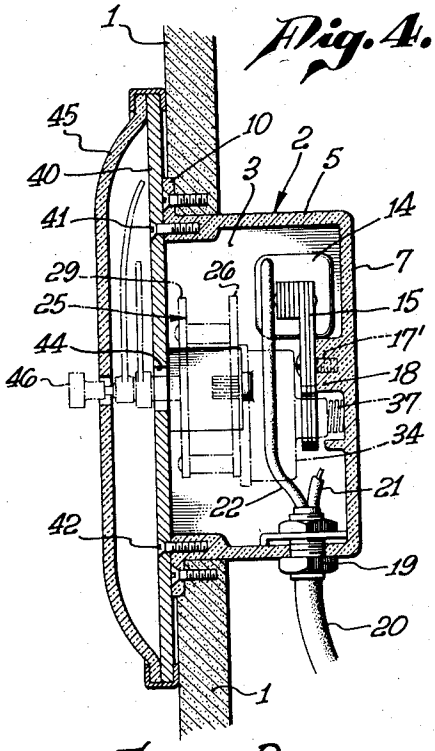


Fig. 4.



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TIME OUTLET

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Application August 13, 1945, Serial No. 610,446

7 Claims. (Cl. 58—53)

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My invention relates to means whereby electrically driven clocks and other instruments of that type may be readily and easily installed within supporting walls, panels and the like, so that the dial or face of the instrument is substantially flush with the surface of the panel or wall and the entire installation is fire resistant and of a type approved by the underwriters. The invention, moreover, relates to means whereby repairs on such clocks and other devices may be readily made without the necessity of removing the entire mechanism from the wall.

Ordinarily, electric clocks consist of a box containing the motor, clockwork, and a dial face, and when it is desired to install such clock on a wall, the entire clock is hung with a connecting wire which trails to the nearest electric outlet. The clock protrudes from the wall and the electrical connection is unsightly. In some instances, the clock box or housing was inserted into a recess cut into the wall but difficulty was experienced in then connecting the electrical leads with a source of power and the installation was not of a form approved of by fire insurance companies and underwriters. In these installations the entire clock had to be removed and the electrical leads cut before repairs could be made. Moreover, all of the wall or recessed clocks had to be removed in order to reset the minute and hour hands, when such resetting was deemed desirable.

The construction to which this invention is directed permits an outlet box or housing to be permanently installed in a supporting wall or panel, such permanent installation including the magnetic core and field coil. Ordinary wire conduit of approved form may be permanently connected to such box and the electrical leads permanently connected to the field coil. The box is then provided with means for guiding and supporting the magnetically driven rotor, clockwork mechanism, gears, etc., so that these elements may be readily inserted into the box or housing and properly positioned with respect to the fixed magnetic core. A dial face may then be attached to the outer edges of the housing so that the instrumentality is substantially flush with the surface of the wall. Front setting means may be provided in the event the instrumentality is a clock, and in the event repairs are needed, the dial face, clockwork and rotor may be readily removed without interrupting the supply of power to the field coil.

It is an object of the present invention, therefore, to disclose and provide an improved type of outlet particularly designed for the installation of electrically driven instruments such as clocks and the like.

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A further object of the invention is to provide a form of construction whereby a clock may be permanently installed within a wall or supporting structure.

These and other objects of the invention will become apparent to those skilled in the art from the following description which illustrates an outlet and construction which may be used in installing electrically driven clocks.

In the appended drawings:

Fig. 1 is a front elevational view of the device showing a clockwork installed, the superimposed dial face being shown in phantom lines.

Fig. 2 is an exploded view showing the rotor and clock work prior to insertion into the outlet.

Fig. 3 is a front view of the outlet box before the insertion of the clock mechanism and rotor.

Fig. 4 is a transverse section showing the entire clock in position within a wall.

In the exemplary form of construction illustrated, a supporting wall or panel is indicated at 1. It is to be understood that this wall or panel may be constructed of various materials and be of varying overall thickness; it may, for example, be a relatively thin partition wall, a hollow tile wall, a relatively thick or solid wall, or, in some instances, a thin panel. At all events, a recess or opening is provided, such recess or opening being capable of snugly receiving the time outlet or housing 2. This housing comprises side walls 3, 4, 5, and 6 and a back wall 7. Means are provided at the front, open edge portions of the housing 2 for attaching the housing to the wall 1. In the embodiment illustrated, such means comprise upper and lower flanges 10 and 11, the upper flange 10 being shown provided with slots 12 and 13 through which screws, tie bolts, or the like, may be inserted for the purpose of connecting the housing to the wall 1.

Within the housing there is permanently supported and carried a field coil 14 in operative relation to a magnetic core 15, the core forming the gap 16 (see Fig. 3). This assembly may be firmly attached to the rear wall 7 as by means of machine screws 17 and 17' extending into a pair of spaced bosses 18 formed in the back wall 7.

The housing 2 is also provided with a port 19 through which an electrical conduit 20 may extend, the conduit being firmly connected to the housing in a suitable manner as is well known in the art. The electrical leads 21 and 22 are attached to the field coil 14.

Means are also provided for guiding and sup-

porting a removable motor unit in operative relation to the magnetic core 15. Such means may consist of grooves 23 and 24 formed in the side walls 3 and 4. The clockwork mechanism itself, generally indicated by the numeral 25, may consist of a plate member 26 having wing-like extensions adapted to slidably fit into the grooves 23 and 24, the extensions being indicated in Fig. 1 at 27 and 28. The clockwork may also include a front plate 29 spaced from the rear plate 26, the various gears (not shown) being mounted between these two plates.

Inwardly extending bosses 30 and 31 are formed in the side walls 3 and 4 adjacent the grooves 23 and 24 so as to permit clockwork 25 to be firmly attached to the box, as for example, by means of screws 32 and 33.

The electric rotor 34 is normally provided with a pinion 35 which extends through a suitable port in the plate 26 and meshes with the gears therein.

It will be evident that the assembly of clockwork 25 and rotor 34 may be slid into the housing 2 along the grooves 23 and 24, these grooves being so positioned with respect to the fixed core 15 that the rotor 34 properly and accurately extends through the gap 16. A small compression spring 37 may be positioned between the rotor 34 and the back wall 7 in order to assist in the proper positioning and holding of the rotor within the housing. A dial face 40 may then be applied over the housing as by means of screws 41 and 42. The hand actuating sleeves of the clockwork may extend through a central opening 44 in the dial face and the hands may then be forced or attached to these actuating sleeves in the customary manner. A suitable crystal or cover 45 held in position by means of a split or resilient retaining ring may also be provided.

A setting knob 46 may extend through the cover 45 so as to permit the clock to be set without the necessity of removing the mechanism from the wall. Front setting means of the character described in my co-pending application Serial No. 610,445 may be used.

It will be evident from the description given that a simple and efficient method of installing electric clocks has been provided. The construction is fire-proof, since the housing 2 is imperforate. The housing 2 may be made of metal or of a molded plastic composition. When the gearing or clockwork requires repair, the entire dial face and clockwork mechanism may be removed without the necessity of disturbing the electrical connections. Parts may be interchanged readily. The dial face overlies the outer edges of the box and is substantially flush with the outer surface of the wall or supporting panel 1.

Those skilled in the art will readily appreciate that the drawing specifically referred to hereinabove is only exemplary and that numerous changes and modifications may be made without departing from the inventive thought herein disclosed.

I claim:

1. A device for facilitating the installation and repair of electrically driven clocks and the like, comprising: an outlet box provided with side walls, a back wall and an open front; means carried by the box for attaching the box to a supporting panel in which said box is recessed; a magnetic core and field coil mounted within the box; a port in the wall of the box for the reception of electrical conduit means; and guide means carried by the box for guiding and supporting a removable motor unit in operative relation to the magnetic core.

2. A unitary outlet box for facilitating the installation and repair of permanently installed, electrically driven clocks and the like in a supporting wall having a recess therein, comprising: an outlet box provided with side walls, a back wall and an open front; means carried by the front edge portions of the box for attaching the box in a wall with the edge portions adjacent the surface of the wall; a magnetic core and field coil mounted within the box; a port in the wall of the box for receiving an electrical conduit; and guide means carried by side walls of the box for guiding and supporting a removable motor unit in operative relation to the core.

3. A unitary outlet box for facilitating the installation and repair of permanently installed, electrically driven clocks and the like in a supporting wall having a recess therein, comprising: an outlet box provided with four side walls, a back wall and an open front; means carried by the front edge portions of the box for attaching the box in a wall with the edge portions adjacent the surface of the wall; supporting means integral with the back wall for holding a field coil and magnetic core in a predetermined position; a port in the wall of the box for electrical conduit means; and guide means carried by side walls of the box for guiding a removable motor unit into operative relation to the magnetic core held on the supporting means.

4. A unitary outlet box for facilitating the installation and repair of permanently installed, electrically driven clocks and the like in a supporting wall having a recess therein, comprising: an outlet box provided with four side walls, a back wall and an open front; means carried by the front edge portions of the box for attaching the box in a wall with the edge portions adjacent the surface of the wall; supporting means integral with the back wall for holding a field coil and magnetic core in a predetermined position; a port in the wall of the box for electrical conduit means; locating and connecting means carried by side walls of the box for locating, guiding and attaching a removable clockwork and motor in operative relation to a magnetic core held on the supporting means; and means carried by the front edge portions of the box for attaching a dial face thereto.

5. A readily repairable, permanently installed clock in a supporting wall provided with a recess, comprising: an outlet box provided with four side walls, a back wall and an open front; means carried by the front edge portions of the box for attaching the box in a wall with the edge portions adjacent the surface of the wall; supporting means integral with the back wall for holding a field coil and magnetic core in a predetermined position; a port in the wall of the box for electrical conduit means; locating and connecting means carried by side walls of the box for locating, guiding and attaching a removable clockwork and motor in operative relation to a magnetic core held on the supporting means; and means carried by the front edge portions of the box for attaching a dial face thereto.

6. A readily repairable, permanently installed clock in a supporting wall provided with a recess, comprising: an outlet box provided with four side walls, a back wall and an open front; means carried by the front edge portions of the box for attaching the box in a wall with the edge portions adjacent the surface of the wall; supporting

means integral with the back wall for holding a field coil and magnetic core in a predetermined position; a port in the wall of the box for electrical conduit means; locating and connecting means carried by side walls of the box for locating, guiding and attaching a removable clockwork and motor in operative relation to a magnetic core held on the supporting means; means carried by the front edge portions of the box for attaching a dial face thereto; and a removable clockwork and motor adapted to be slidably received by said locating and connecting means, said clockwork including frontal means for setting the clock.

7. A unitary outlet box for facilitating the installation and repair of permanently installed, electrically driven clocks and the like in a supporting wall having a recess therein, comprising: an outlet box provided with side walls, a back wall and an open front; means carried by the front edge portions of the box for attaching the box in a wall with the edge portions adjacent the surface of the wall; supporting means integral

with the back wall for holding a field coil and magnetic core in a predetermined position; a port in the wall of the box for electrical conduit means; locating and connecting means carried by the box for locating, guiding and attaching a removable clockwork and motor in operative relation to a magnetic core held on the supporting means; and means for attaching a face to the box.

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