May 21, 1963 K. H. JENSEN 3,090,193

CLOCK HOUSING

Filed Dec. 9, 1958

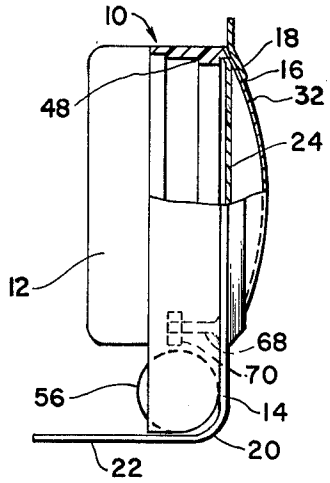


FIG. 1.

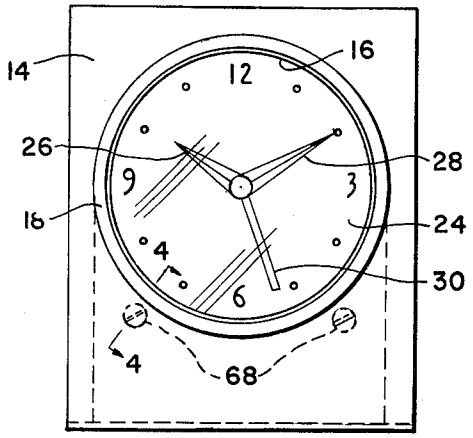


FIG. 2.

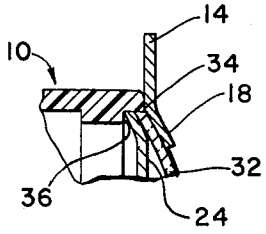


FIG. 3.

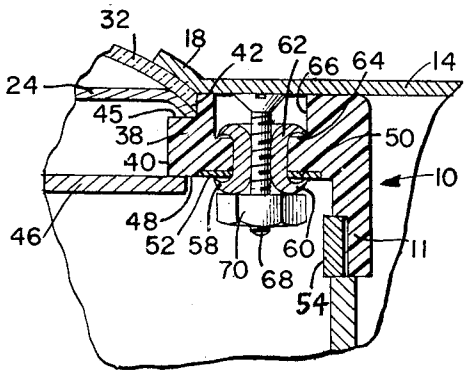


FIG. 4.

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CLOCK HOUSING

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This invention relates generally to a battery driven electric clock and more particularly relates to an improved mounting for such a clock.

In assignee's copending application entitled "Clock Housing" Serial No. 749,163, filed July 17, 1958, now Patent No. 3,049,861, there is disclosed a clock housing for a battery driven clock which may be formed primarily of molded plastic and which may be sold to jewelers as a unit for mounting in a wide variety of clock cases. Thus it is possible for the same movement to be incorporated into clocks having various price ranges depending upon the cost of the case itself.

The present invention constitutes an improved mounting assembly for the clock housing disclosed in the aforementioned application in which the entire assembly may be accomplished by simply attaching a pair of nuts to a pair of screws. The invention contemplates the use of a novel bezel which is integral with the front mounting plate of the housing rather than the use of a separate bezel which must either be screwed or snapped into position as is presently the custom.

It is accordingly a primary object of the present invention to provide an improved mounting for a battery operated clock.

It is another object of the present invention to provide a novel bezel for retaining the crystal and dial of a clock in place.

These and further objects and advantages of the present invention will become more apparent upon reference to the following specification and claims and appended drawings wherein:

FIGURE 1 is a side elevation view, partially in section, showing a clock assembly constructed according to the present invention;

FIGURE 2 is a front view of the clock shown in FIGURE 1;

FIGURE 3 is an enlarged detail sectional view showing the manner in which the crystal and dial of FIGURE 1 are retained in place; and

FIGURE 4 is a detailed vertical section taken along the lines 4—4 of FIGURE 2.

Referring now more particularly to FIGURES 1–3 of the drawing, the clock housing consists of a lower half or base generally indicated at **10** and a cover **12**. These elements are preferably formed of molded plastic material as described in the aforementioned copending application. A front mounting plate **14** has a stamped out portion forming an opening **16** and is provided with an upwardly sloping surface forming a bezel **18** adjacent this opening **16**. The front mounting plate **14** is bent at **20** to provide a mounting base **22** which may serve as the sole support of the clock or which may facilitate mounting the clock in an additional case or frame. A dial is shown at **24** through which is mounted an hour hand **26**, a minute hand **28** and a second hand **30** in customary fashion. A transparent crystal for the clock is shown at **32** overlying the dial **24** which is visible therethrough along with hands **26**, **28** and **30**.

Reference is now made to FIGURE 3 which shows the manner in which the dial **24** and the crystal **32** are retained in place. Reference to this figure discloses that dial **24** which is a completely rigid member has a downturned periphery **34** which rests upon and is supported by an annular ledge **36** of base **10**. The downturned periphery

34 of dial **24** engages the underside of crystal **32** the outside surface of which is engaged by bezel **18**. The mounting plate **14** is retained in position in a manner to be described hereinafter so that both the dial **24** and the crystal **32** are rigidly held in position.

Referring now to FIGURE 4, the base **10** of the housing has a side wall **11** and a bottom or floor **38** provided with a centrally located aperture **40** and a counter-bore **42** concentric therewith to provide a shoulder **45**. The housing is designed to hold a battery operated clock of the type shown in Koehler Patent No. 2,662,366. The dial plate of this Koehler type clock is shown at **24** and the pillar plate is shown at **46**. The dial plate **24** is connected to the pillar plate **46** in a manner shown and described in the referenced copending application.

A ledge **48** (see FIG. 1) supports the pillar plate **46** and is recessed at **50** for a depth substantially equal to the depth of a contact foot **52** which is an extension of a contact arm **54** which in turn is connected to a battery **56** in a manner described in the copending application. An eyelet or grommet **58** passes through a suitable aperture in the foot **52** and a similar aperture in floor **38** to secure the contact foot **52** to the floor **38**. One end **60** of the eyelet **58** engages the foot **52** while the other end **62** of the eyelet **58** engages a shoulder **64** formed by a counter-bore **66** in the floor **38**.

According to the invention the eyelet **58** and a corresponding eyelet in the other corner of the clock housing provide a convenient means for fastening the housed clock movement to the front mounting plate **14**. A flat headed screw **68** is brazed, silver soldered or otherwise secured to the front mounting plate **14**. A nut **70** is threaded onto screw **68** to engage the end **60** of eyelet **58** and compress this end against the contact foot **52**. As will be seen in FIGURE 2, only two such screws **68** and associated nuts **70** are required for the entire assembly operation. That is to say, these screws and nuts lock the movement in the housing, the housing to the mounting plate, and the crystal and dial in position.

As will be seen from the foregoing explanation, the clock assembly is complete with only four basic parts. These include the plastic housing containing the clock movement, the dial **24**, the crystal **32** and the front mounting plate **14**. Thus the housing is brought into abutting relation with the front mounting plate **14** with the dial **24** and crystal **32** contained between the ledge **36** and bezel **18** which is integral with the front mounting plate **14**. The nuts **70** are drawn tight on the screws **68** and the assembly is complete.

With the number of different sub-assembly parts thus held to a minimum and the assembly effected so simply, a substantial saving in time and money is obtained in the practice of the present invention. The clock assembly is conveniently mounted in a wide variety of casings or frame members to provide, for example, desk clocks, wall clocks, alarm clocks and numerous other types.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by United States Letters Patent is:

1. In a battery driven clock having a dial train and dial plate, a housing comprising: a base having a floor and a side wall extending therefrom; said floor having an inner and outer side and a large opening therein for re-

ceiving said dial train of said clock; said outer side having an annular ledge formed therein co-axially with said opening; said annular ledge being adapted to releasably receive the peripheral edge of said dial plate about said floor opening; a support plate releasably engaging said outer side of said floor about said floor opening; a transparent crystal for said clock overlying said peripheral edge of said dial plate and having inner and outer surfaces; said crystal extending away from said base and dial plate; said support plate having an opening through which said crystal may protrude; said support plate opening being defined by an annular flange for engaging said outer surface of said crystal; said inner surface of said crystal releasably engaging said peripheral edge of said dial plate about said floor opening; and screw means removably connecting said support plate to said base so as to compress said crystal and dial plate between said annular ledge and annular flange.

2. In a battery driven clock having a dial train, pillar plate and dial plate, a housing comprising: a base having a recessed floor and a side extending therefrom; said floor having an inner and outer side and a large opening therein for receiving said dial train of said clock; said outer side of said floor having an annular ledge formed therein co-axially with said opening; said pillar plate releasably engaging said inner side of said floor about said floor opening; said annular ledge being adapted to releasably receive the peripheral edge of said dial plate about said opening; a support plate removably mounted to said base and releasably engaging said outer side of said floor about said floor opening, a transparent crystal for said clock overlying said peripheral edge of said dial plate and having inner and outer surfaces; said crystal extending away from said base and dial plate; said support plate having an opening through which said crystal may protrude; said support plate opening being defined by an annular flange for releasably engaging said outer surface of said crystal; said inner surface of said crystal engaging said peripheral edge of said dial plate about said floor opening; and screw means removably attaching said support plate to said base so as to compress said crystal and said dial plate between said annular ledge and said annular flange.

3. In a battery driven clock having a dial train, pillar plate and dial plate, a housing comprising: a base having a recessed floor and a side extending therefrom; said floor having an inner and outer side and a large opening therein for receiving said dial train of said clock; said outer side of said floor having an annular ledge formed therein; said pillar plate releasably engaging said inner side of said floor about said floor opening; said annular ledge being adapted to releasably receive the peripheral edge of said dial plate about said opening; a support plate removably mounted to said base and releasably engaging said outer side of said floor about said floor opening, a transparent crystal for said clock overlying said peripheral edge of said dial plate and having inner and outer surfaces; said crystal extending away from said base and dial plate; said support plate having an opening through which said crystal may protrude; said support plate opening being defined by an annular flange for releasably engaging said outer surface of the peripheral edge of said dial plate about said floor opening; and screw means removably attaching said support plate to said base so as to compress said crystal and said dial plate between said annular ledge and said annular flange; said screw means comprises: at least two screws fixedly attached to said support plate; at least two eyelets mounted in said base for passing said screws through said base; and at least two nuts threadably engaging said screws for removably connecting said support plate to said base.

4. In a battery driven clock having a dial train, pillar plate and dial plate, a housing comprising: a base having a recessed floor and a side extending therefrom; said floor having an inner and outer side and a large opening therein for receiving said dial train of said clock; said outer side of said floor having an annular ledge formed therein; said pillar plate releasably engaging said inner side of said floor about said floor opening; said annular ledge being adapted to releasably receive the peripheral edge of said dial plate about said opening; a support plate removably mounted to said base and releasably engaging said outer side of said floor about said floor opening, a transparent crystal for said clock overlying said peripheral edge of said dial plate and having inner and outer surfaces; said crystal extending away from said base and dial plate; said support plate having an opening through which said crystal may protrude; said support plate opening being defined by an annular flange for releasably engaging said outer surface of said crystal; said inner surface of said crystal engaging said peripheral edge of said dial plate about said floor opening; and screw means removably attaching said support plate to said base so as to compress said crystal and said dial plate between said annular ledge and said annular flange; said screw means comprises: at least two screws fixedly attached to said support plate; at least two eyelets mounted in said base for passing said screws through said base; and at least two nuts threadably engaging said screws for removably connecting said support plate to said base; said support plate comprises: a planar vertical portion which is removably attached to said base and has said support plate opening formed thereon; and a planar horizontal portion connected to said vertical portion and forming an angle less than ninety degrees with said vertical portion for supporting said clock in an upright position upon said horizontal portion.

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