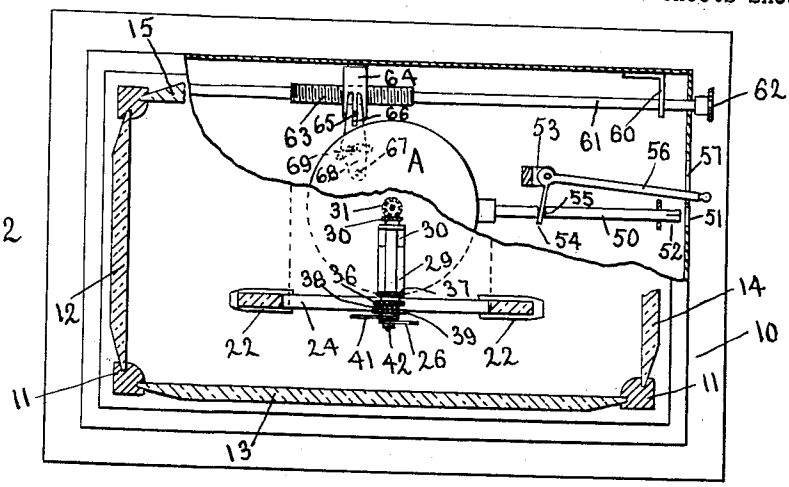
March 18, 1941. G. GERRITSMA 2,235,068

MANTEL CLOCK

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Fig. 2



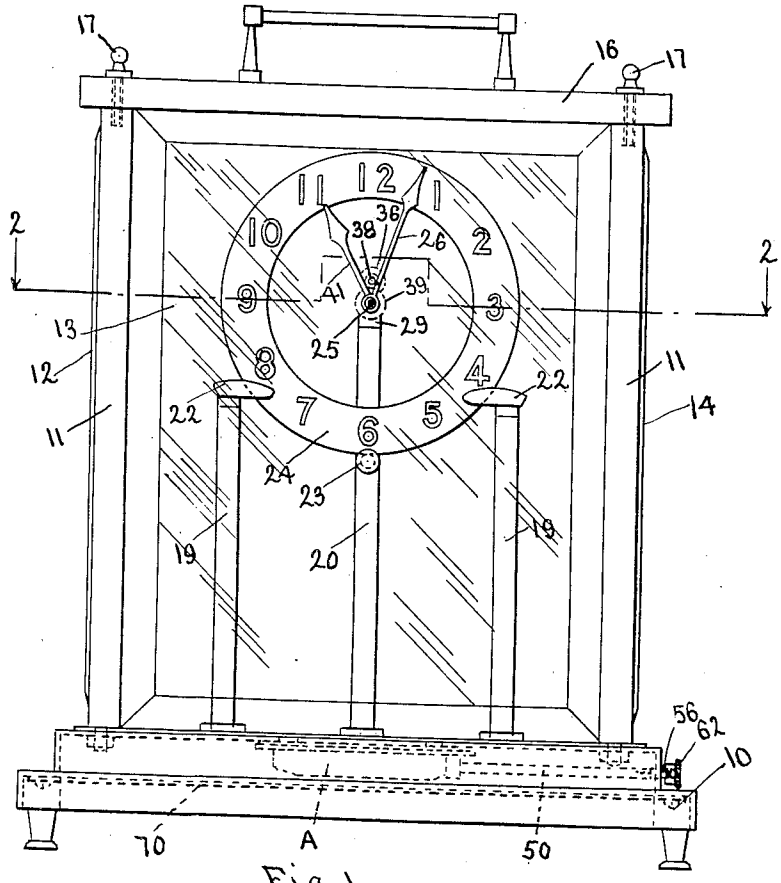


Fig. 1.

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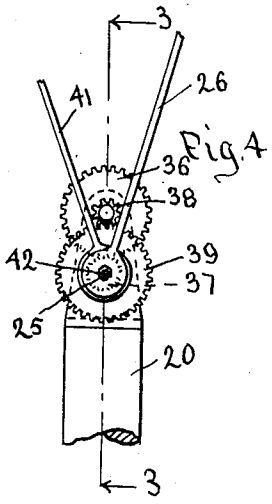


Fig. 4

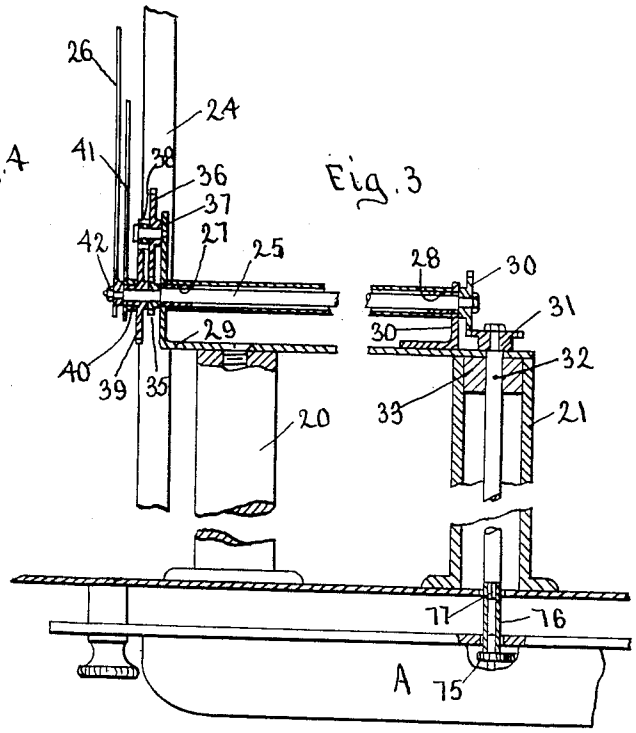


Fig. 3

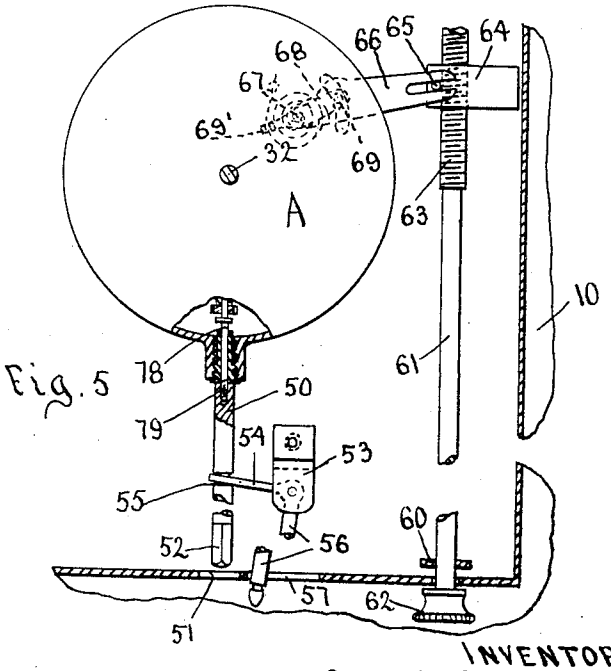


Fig. 5

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UNITED STATES PATENT OFFICE

2,235,068

MANTEL CLOCK

Girard Gerritsma, Malden, Mass.

Application June 20, 1940, Serial No. 341,483

1 Claim. (Cl. 58—2)

My invention relates to timepieces and particularly to ornamental mantel clocks.

The type of clock in which my invention is embodied, in general comprises a clock case in which the front and sides are of plate glass mounted in metal corner frames with a metal top and base, the dial being visible from both front and sides, and the clock movement being mounted behind and connected with the dial.

In such a clock, the movement is either enclosed in a housing or in some cases is left exposed within the glass case.

In the clock in which my invention is embodied, the dial is formed as a glass ring with the hours inscribed on the face, and is supported on posts independent of any part of the movement, the movement being concealed with only inconspicuous connections to the hands of the clock, being visible.

One object of my invention is to provide a mantel clock in which the dial and hands are mounted independently, in a clock case having glass sides, the movement except for the connections to the hands, being concealed within the base of the case.

A second object is to provide a clock of the above character in which the movement may be adjusted, and wound or set from the outside of the clock case.

My invention consists in the novel construction and means employed for accomplishing the foregoing objects and providing an artistic and reliable mantel clock.

In the accompanying specification and claim and the drawings forming a part thereof, I have described and illustrated a clock in which my invention is embodied, but do not confine myself to the form shown, as modifications may be made within the scope of the claim.

In the drawings,

Fig. 1 is a face view of a clock in which my invention is embodied.

Fig. 2 is a sectional plan substantially on the line 2—2 of Fig. 1, a portion of the base being broken away to show means for regulating, winding and setting the movement.

Fig. 3 is an enlarged fragment substantially on the line 3—3, Fig. 4.

Fig. 4 is a front view enlarged, featuring the reduction gearing for the hour hand.

Fig. 5 is a fragmental plan, normal size, showing the relation of the winding, setting and regulating means, relative to the movement.

Referring to the drawings,

10 is a chambered clock base, to which are secured the corner posts 11, each formed with grooves in which plate glass panels 12, 13, 14 and 15 are held, forming the front, sides and back of the clock case.

A top member, 16 fits over these posts and panels, bolts 17 into each corner post securing rigidly the elements of the case. Rigid with the platform of the base 10 are the posts 19, 20, 21, posts 19 being provided with forked tops 22, adapted to support, in connection with the flanged element 23, the dial ring 24. The dial ring 24 is preferably formed from plate glass with the hour figures inscribed on the outer face, and no other support or fastening other than described, is required. The dial is mounted concentric with the axis of the shaft 25, Figs. 1, 3, 4, rigid with which is the minute hand 26 rotatable in a plane parallel with the face of the dial ring 24. The shaft 25 is journaled in bushings 27, 28 secured respectively in the member 29, and 30 rigid therewith. The member 29 is secured to the upper ends of the posts 20, 21 the latter being tubular in form. Secured to the shaft 25 at the end remote from the hand 26, is a pinion 30, meshing with a like pinion 31, here shown as a crown gear. This pinion 31 is rigid with the shaft 32, journaled in the bushing 33, axially secured in the end of the tubular post 21. This shaft constitutes an extension of the minute hand shaft of the clock movement A, mounted beneath the base plate or platform 18 of the case. I have found it convenient to use the type of movement known commercially as a "traveller's clock." This is an eight day stem winding and setting movement of larger size than the usual watch movement of the same general character, and it may be used without change, the shaft 32 being coupled to the minute hand shaft, thus operating through the connections described to rotate the minute hand 26. The reducing gearing between the minute hand shaft and the hour hand in the movement may be left in place but I prefer to remove this part from the movement and use it or substitute its equivalent at the clock face in the following manner: Secured to the shaft 25 is a pinion 35, Figs. 3 and 4, meshing with the intermediate gear 36, journaled on a stud projecting from the extension 37 of the member 29. Rigidly secured to and concentric with the gear 36 is the pinion 38 meshing with the gear 39, rigidly secured to and concentric with the hub 40 of the hour hand 41, and journaled on the minute hand shaft 25, limited in axial movement by the nut 42. It will be obvious that the combined reduction gearing between the minute

and hour hands is proportioned in the ratio of 12 to 1.

Returning to the movement A, Fig. 5, the element 50 constitutes an extension of the setting and winding stem of the original movement, the opening 51 in the side of the base permitting the insertion of a winding key at 52.

In order that the stem may be moved axially for winding or setting, I provide a bellcrank journaled in the element 53, rigid with the under side of the platform. One arm 54 of this bellcrank is formed to engage a groove 55 on the element 50, the other arm 56 extending through the opening 57 in the side of the base, the arm 56 operating to move the element 50 axially to engage either the winding or setting mechanism within the housing of the movement. To regulate the movement from the outside of the clock case, I employ the following means: Journaled in projections from the base at both sides as at 60, is a shaft 61 extending through one side of the base, and having the knurled button 62 to facilitate rotation. This shaft is provided with a threaded portion 63, engaging the nut 64, slidable axially. Projecting from this nut is the stud 65 adapted to engage a slot in the lever 66, journaled at 67 on the housing of the movement. An extension 68 of this lever, is adapted to engage a projection 69 from the movement regulator 69' within the housing, operative as the shaft 61 is rotated, to move the regulator micrometrically in either direction. To protect the movement and connections from dust, I employ a cover plate 70 fitted to the base and secured thereto.

The means I employ for connecting the extension shaft 32 to the minute hand shaft of the movement is as follows: The pinion 75 of the movement engages with the gearing of the movement to move the minute hand in the usual clock, and for my purpose the element 76 is secured to this pinion and extends upwardly and has a square hole broached in its upper end, a squared end 77 being formed on the end of the shaft 32 and fitted to the hole. The extension of the setting and winding shaft is connected to the movement as follows: The stem 78 of the setting and winding mechanism is formed at its outer end 79 with a threaded portion and the end of the extension 50 is tapped to engage therewith.

Having thus described my invention, I claim:

In a clock including a dial, a chambered base, a clock movement mounted therein in a plane normal to the plane of the face of the dial, an extension of the minute hand shaft of the movement, and a countershaft geared thereto and having a minute hand rigid with the end thereof, said minute hand being rotatable in a plane parallel with the face of the dial; an hour hand rotatably mounted on said countershaft; and reduction gearing between the minute hand and the hour hand, to rotate the latter in relation to the minute hand to indicate the hour and minute, in combination therewith, a pair of pillars upwardly projecting from the base, and on which the dial is supported; another pair of pillars upwardly projecting from the base and on which the countershaft is rotatably supported, and through one of which the said minute hand extension shaft passes and in which it is journaled; the reduction gearing being mounted on the other pillar.

GIRARD GERRITSMA.