

W. K. MENNS.  
STEM WINDING AND SETTING CLOCK.  
APPLICATION FILED MAR. 24, 1919.

1,331,163.

Patented Feb. 17, 1920.

Fig. 2.

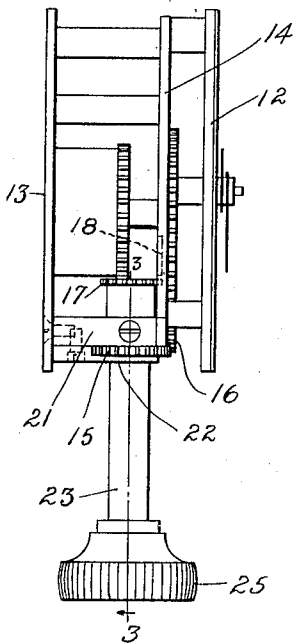


Fig. 1.

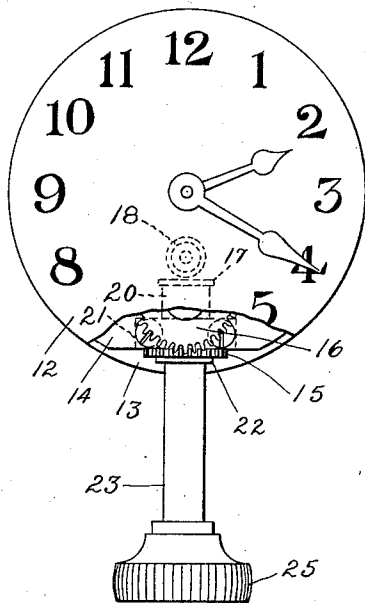


Fig. 3.

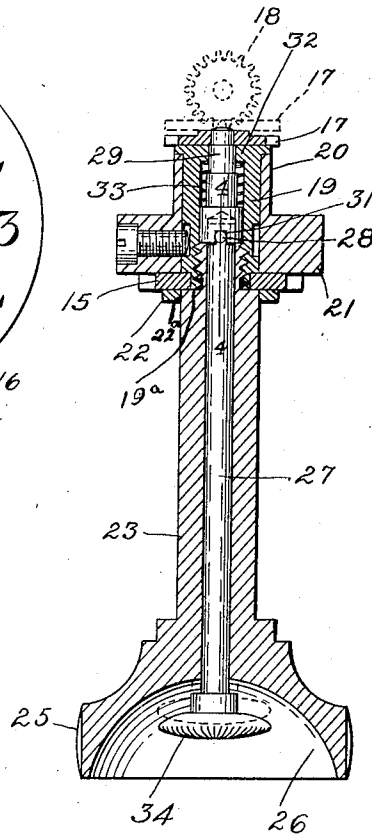


Fig. 4.

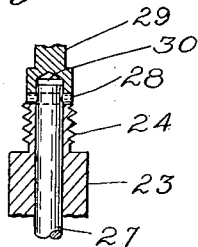


Fig. 5.

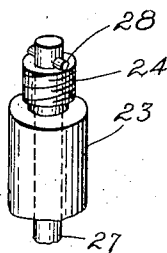
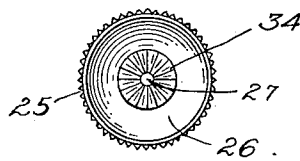


Fig. 6.



Inventor  
Walter K. Menns  
by *Wright Brown Linsley May*  
Attorneys

# UNITED STATES PATENT OFFICE.

WALTER K. MENNS, OF CHELSEA, MASSACHUSETTS, ASSIGNOR TO BOSTON CLOCK COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

## STEM WINDING AND SETTING CLOCK.

1,331,163.

Specification of Letters Patent.

Patented Feb. 17, 1920.

Application filed March 24, 1919. Serial No. 284,522.

*To all whom it may concern:*

Be it known that I, WALTER K. MENNS, a subject of the King of Great Britain, residing at Chelsea, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Stem Winding and Setting Clocks, of which the following is a specification.

This invention relates particularly to a stem-winding and setting clock attachable to the instrument board or plate of an automobile, a flying machine or the like, and provided with winding and hands-setting trains which are operated to wind and set the clock by a winding-stem and a setting-stem projecting radially from the clock frame, the winding-stem being tubular, the setting-stem being movable endwise and rotatable in the bore of the winding-stem, and each of the stems being provided at its outer ends with a crown whereby it may be manipulated, said crowns being at any desired distance from the clock frame.

One object of the invention is to enable the crown of the necessarily slender or attenuated setting-stem to be protected by the crown of the relatively stiff and bulky winding-stem, so that a chauffeur or aviator, in manipulating the setting-stem, will not be liable to bend and injure the same.

Another object is to enable the two stems to be applied and removed as a single part in assembling and taking apart the members of the clock.

Another object is to provide improved means for supporting and connecting with the clock frame the members of the winding and hand-setting trains which are directly engaged with the winding and setting stems.

To these and other related ends the invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a front view of a clock embodying the invention, a part of the dial and dial plate being broken away.

Fig. 2 is an edge view, showing the instrument board and casing in dotted lines.

Fig. 3 is an enlarged section on line 3—3 of Fig. 2.

Fig. 4 is a section on line 4—4 of Fig. 3.

Fig. 5 is a perspective view showing the

inner end portions of the winding and setting-stems.

Fig. 6 is an end view showing the crowns of the two stems.

The same reference characters indicate the same parts in all of the figures.

The frame and time mechanism of the clock may be of any suitable construction. As here shown the frame includes a dial plate 12, a back plate 13, an intermediate plate 14, and suitable connections between said plates. 15 represents the first gear or member of the winding train, this being the member which is directly connected with the winding-stem and meshes with the second gear or member 16 of the winding-train. 17 represents the first gear or member of the hand-setting train, this being the member which is directly connected with the setting-stem and is shiftable to either mesh with, or be separated from, the second gear or member 18 of the setting train. Further description of the winding and setting trains is deemed unnecessary, since they are organized to operate as usual in this class of clocks.

As here shown a hub 19 is journaled in a bearing 20 attached to a bridge 21 between the plates 13 and 14, the hub being tubular and internally threaded, as shown by Fig. 3. The winding-train member has a polygonal opening fitting a polygonal portion 19<sup>a</sup> of the hub and separable therefrom. A fixed ear 22 attached to the bridge 21 projects under the train member 15 and confines it against the inner end of the hub, said ear being provided with an orifice 22<sup>a</sup> (Fig. 3), surrounding the winding stem 23. The function of the ear 22 is to retain the train member 15 in its operative position when the stem 23 is removed. The winding-stem is tubular and is provided at its inner end with a reduced externally threaded portion 24 engaged with the internal thread of the hub 19, provision being thus made for separably securing the winding-stem to the winding-train member 15. The direction of the screw threads is such that the rotation of the winding-stem in winding the clock, tends to turn the stem into the hub and thus tighten the connection.

The outer end of the winding-stem 23 is provided with a knob or crown 25, the outer side of which is cupped to form a recess 26,

the portion of the crown surrounding said recess constituting an annular guard and guide for purposes hereinafter described. The periphery of the crown is preferably milled to enable it to be effectively grasped and rotated to wind the clock.

27 represents the setting stem which is a relatively slender rod, adapted to be rotated and moved longitudinally in the bore of the winding-stem. The setting-stem is connected with the setting-train member 17 to both rotate and move the latter sidewise, the connection between said stem and member being preferably separable and including a clutch part on each. The clutch part on the stem may be provided by the opposite ends of a pin 28 fixed to the stem and projecting from opposite sides thereof. The clutch part on the train member 17 may be the enlarged end of an arbor 29, constituting the axis of said member, and provided with a socket 30 receiving the inner end of the setting-stem, and with notches 31 receiving the ends of the pin 28. The bearing 20 has an inwardly projecting annular flange 32, forming a bearing for the arbor 29, and an abutment for a spring 33.

Said spring, which bears on a shoulder on the arbor 29, normally holds the winding-train member 17 in an inoperative position (disconnected from the train member 18) as shown by full lines in Fig. 3. The spring also acts to normally project the setting-stem 27 to the extreme of its outward longitudinal movement, this movement being limited by the bearing of the pin 28 on the winding-stem. The setting-stem 27 is provided with a push piece 34, formed as a crown adapted to be engaged by the tip of the thumb, or other digit of the operator. The depth of the recess 26 is such that the mouth of the recess is in a plane below the outer face of the push piece 34, when the hands-setting stem is normally projected, so that the push piece is always contained wholly within the recess 26, and is surrounded by the annular guard provided by the crown 25. The push piece 34 is therefore protected against accidental force or pressure tending to move the setting stem to the dotted line position, and to turn the setting stem accidentally. The mouth of the recess 26 constitutes a guide, adapted to direct a digit to a bearing on the outer face of the push piece 34.

When the winding-stem is rotated in the proper direction, the main spring is wound, the setting-train member 17 being now held by the spring 33 in its inoperative position. To set the hands the operator presses his thumb against the push piece 34 until the latter is moved to the dotted line position Fig. 3, and the train member 17 is shifted sidewise into engagement with the train

member 18. The setting-stem and the train member 17 are then turned to set the hands, by imparting a turning movement to the thumb while it is pressed against the push piece, the outer face of the latter being preferably knurled radially, as shown by Figs. 3 and 6, and thus adapted to be effectively engaged by a digit inserted in the recess 26.

The described separable connections between the winding-stem 23 and the winding-train member 13, and between the setting-stem 27 and the setting-train member 17, enable the two stems to be applied and removed as a single part, the setting-stem being confined in the winding-stem by the clutch pin 28 and push piece 34.

The pin 28 and the stem portion 24 constitute a means for limiting the outward endwise movement of the setting-stem 27. The concave recess 26 forms the inner surface of a relatively deep cup. The push piece or crown 34 is formed to be contained wholly between the mouth and the bottom of the said cup. The arrangement of the means for limiting the endwise movements of the setting-stem is such that when the outward movement is arrested, and the setting-stem is in its normal position, the crown 34 is offset inwardly from the mouth of the cup, and its entire periphery is surrounded and guarded by said cup. Moreover, the mouth of the cup constitutes an annular guide adapted to direct a finger or a thumb, or both a finger and a thumb, to the outer face of the crown 34. It is often desirable in practice to apply the tips of the fore finger and thumb of one hand to the crown 34, these, after pushing the crown inwardly, resting on the annular mouth of the cup, and being supported by said mouth while the operator, by a twisting movement of the hand, rotates the stem 27 to set the hands.

I claim:

A stem-winding and setting clock including a tubular winding-stem, and a setting-stem movable endwise in the winding-stem, means being provided for limiting the endwise movement of the setting-stem, the winding-stem being provided with a cup constituting a crown whereby the stem may be rotated, the setting-stem being provided with a crown formed to be contained wholly between the mouth and the bottom of the said cup, and the said limiting means being adapted to confine the setting-stem crown wholly within the cup, so that the cup guards the setting-stem crown and is adapted to guide operating digits to said crown, and to support the digits when rotating the crown.

In testimony whereof I have affixed my signature.

WALTER K. MENNS.