## W. K. MENNS.

WINDING AND SETTING MECHANISM,
APPLIOATION FILED APR. $30,1913$.
$1,099,307$.
Patented June 9, 1914.

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# UNITED STATES PATENT OFEICE. 

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

WINDING AND SETIING MEGHANISM.
1,099,307.
Specification of Letters Patent. Patented June 9, 1914.
Application filed April 30, 1913. Serial No. 764,567.

To whll whom it maty concern:
Be it known that I, Walter K. Menns, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Winding and Setting Mechanisms, of which the following is a specification.

This invention relates to a winding and setting mechanism for clocks, and is particu0 larly adapted for clocks mounted on automobiles, and the like.

The object of the invention is to provide a clock having a dust and weather - proof case which can remain permanently closed, 15 and having an improved winding and setting shaft or stem, which extends at right angles to the face of the clock, so that the clock case can be mounted in an apron, or the like, on an automobile, yet have said 0 shaft always readily accessible for operation.

With the above object in view, the invention consists in the improved winding and setting mechanism hereinafter described and 5 claimed, the advantages of which will be obvious to those skilled in the art from the following description.

The invention will be clearly understood from an inspection of the accompanying 30. drawing in which-

Figure 1 is a front elevation of a clock, with parts broken away, having an illustrative embodiment of the invention applied thereto; Fig. 2 is a central vertical section 35 taken on the line $2-2$ in Fig. 1; Fig. 3 is a fragmentary rear elevation: and Fig. 4 is a fragmentary vertical section, on an enlarged scale, through the winding mechanism.

As illustrated in the drawing, the mechanism is embodied in a clock the case of which comprises a cylindrical body-portion 10 , closed at one end and open at the other, said open end being closed by a cylindrical 45. glass closure 12, preferably screwed in place to provide a case which is dust and weatherproof, and is particularly adapted for use upon automobiles and the like.

The works of the clock are of well known 50 construction, and as shown comprise a front plate 14 and a back plate 16, suitably spaced apart by pins and mounted within the cylindrical portion of the case 10 . A spring drum 18 is mounted on an arbor 20 , jour-
naled in the front and back plates, and the 55 rear end of this arbor is squared to fit a correspondingly shaped hole in a gear 22 , said gear being held in place upon said arbor by a screw 24 threaded into the end of the arbor. The gear 22 is rotatable in a counter clock-wise direction as viewed in Fig. 3, and is held against rotation in the opposite direction by a pawl 25 held pressed against said gear by a spring 27. The gear 22 meshes with an idler gear 26 mounted on a stud 28 carried by the back plate 16, and said idler meshes with a winding gear 30 on the winding and setting shaft 32.

The shaft 32 is squared at its rear end to fit a correspondingly shaped hole formed in the gear 30, said gear being held in place on said shaft by a screw 34 threaded into the end of said shaft. The shaft 32 is slidably and rotatably mounted in brackets 36 and 38 affixed to the front and back plates 14 and 16, respectively.. A coiled spring 40 surrounds the shaft 32 and bears at one end against the bracket 36 , and at its other end against a collar 42 on said shaft. 'This spring tends normally to maintain the shaft 32 with its collar 42 in engagement with the bracket 38 , and the gear 30 in mesh with the idler gear 26 , so that the shaft is normally always in a position to wind the clock. The shaft 32 extends through the front wall of the lower portion or extension 44 of the clock case, and is provided at its front end with a knob 46 , whereby the shaft may be rotated or pulled out to disengage the gears 30 and 26 .

A gear 50, which may be termed the setting gear, is fast on the shaft 32 , and is adapted to be brought into mesh with a gear 52 rotatably mounted on the front plate 14, when said shaft is pulled out longitudinally argainst the tension of the spring 40 . The gear 52 meshes with a gear 54 rotatably mounted on the front plate, and the latter gear in turn meshes with a pinion 56 carried by the center arbor, said pinion controlling the minute hand 57 . A pinion 58 is fast upon the gear 54 and meshes with a gear 60, which controls the hour hand 62.

It will be observed that the winding and setting shaft 32 extends at right angles to 105 the face of the clock and is readily accessible at the front of the clock, thus enabling the clock to be mounted in an apron or other
inclosure at the front end of an automobile, said apron fitting closely about the case of the clock.

In operation, when it is desired to wind the clock, the knob 46 is turned clockwise, the spring 40 acting to maintain the winding gear 30 and the idler gear 26 in mesh. When it is desired to set the clock, the shaft 32 is pulled out sufficiently to disengage the gear 50 and the gear 52 in mesh. The shaft is held thus drawn out against the tension of the spring 40 , and rotated as desired to turn the hands to set the clock. When the knob nally.
3. A clock comprising a casing having a lateral extension, an arbor to which the
main spring is attached, a gear on said arbor and rotatable therewith, gears arranged to control the movements of the hands, a winding and setting shaft slidably and rotatably mounted within said extension and operable from the front of said casing extending at right angles to the plane of the face of the clock, a winding gear and a setting gear mounted on and movable with said shaft, said winding gear being normally in driving relation with the gear on said arbor,- and said setting gear being adapted to be brought into driving relation with said gears which control the movements of the hands, when said shaft is moved longitudinally, and means for automatically returning said shaft to normal position when the setting operation is completed.
4. A clock comprising a casing having a lateral extension, front and back plates, a 8 spring arbor journaled in said plates, a gear on said arbor rotatable therewith, an idler gear meshing with said gear, a winding and setting shaft slidably and rotatably mounted in bearings on sajd plates within said ex- 8 tension and extending at right angles thereto, gearing which is connected to the hands of the clock, a winding gear and a setting gear on said shart and movable therewith, said winding gear being normally in mesh 9 with said idler, said setting gear being adapted to be brought into driving relation with said hand controlling gearing when said shaft is pulled out longitudinally.
5. A clock comprising a casing having a 9 lateral extension, an arbor to which the main spring is attached, a gear on said arbor and rotatable therewith, gears arranged to control the movements of the hands, a shaft slidably and rotatably mounted within said 1 extension and operable from the front of said casing extending at right angles to the plane of the face of the clock, gearing mounted on and rotatable with said shaft, said gearing being adapted to be brought into driving relation with the gear on said arbor when said shaft is moved longitudinally in one direction, and adapted to be brought into driving relation with said gears-which control the movements of the 1 hands when said shaft is moved longitudi. nally in the opposite direction.

In testimony, whereof $I$ have affixed my signature in the presence of two witnesses. WATTER K. MENNS.

## Witnesses:

George W. Jackson,
Hidith M. Cabot.

