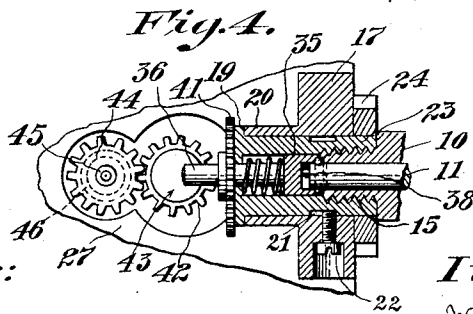
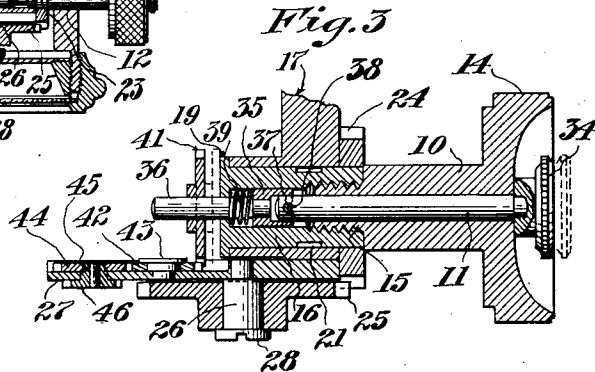
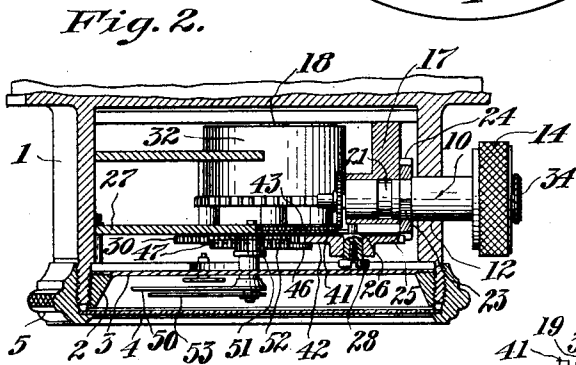
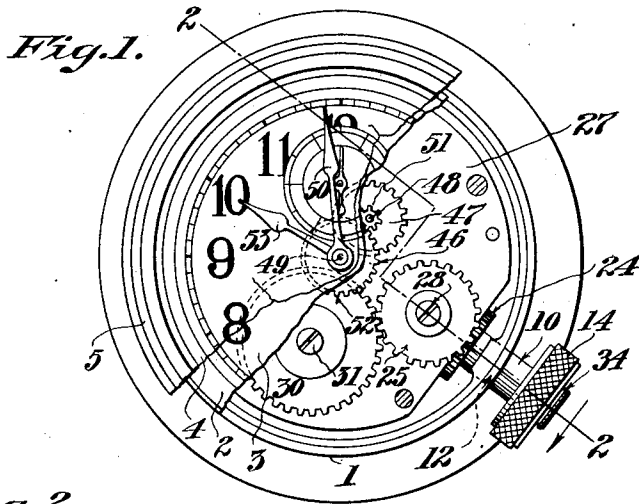


W. K. MENNS.
 STEM WINDING AND STEM SETTING MECHANISM.
 APPLICATION FILED JUNE 28, 1912.

1,094,582.

Patented Apr. 28, 1914.



Witnesses:
M. G. Crozier,
J. E. Graw

Inventor,
Walter K. Menns

UNITED STATES PATENT OFFICE.

WALTER K. MENNS, OF CHELSEA, MASSACHUSETTS.

STEM-WINDING AND STEM-SETTING MECHANISM.

1,094,582.

Specification of Letters Patent.

Patented Apr. 28, 1914.

Application filed June 28, 1912. Serial No. 706,366.

To all whom it may 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 Stem-Winding and Stem-Setting Mechanisms, of which the following is a specification.

This invention relates to stem winding and stem setting mechanism for clocks, and watches, and is particularly adapted for use in clocks subjected to exposure to the weather, as when mounted upon automobiles, motor boats, and the like.

One object of the invention is to provide a clock having a dust and weather proof case which can remain permanently closed, and having an improved stem winding and stem setting mechanism whereby the clock may be wound and set without opening the case.

A further object of the invention is to provide a clock or watch having a winding stem and an improved setting stem, each capable of operation independent of the other, said setting stem being normally held outward in inoperative position, it being necessary to push said setting stem inward to render it operative.

Other features of the invention will be referred to in connection with the specific description of the illustrated embodiment of the invention.

With the above objects in view the invention consists in the improved stem winding and stem setting mechanism hereinafter described and 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 drawings in which—

Figure 1 is a plan view with a portion of the case and face broken away; Fig. 2 is a vertical section taken on the line 2—2 in Fig. 1; Fig. 3 is a sectional elevation on an enlarged scale of the winding and setting stems and mechanism connected therewith, the setting stem being in operative position; and Fig. 4 is a fragmentary sectional plan view of the same with the setting stem in inoperative position.

As shown in the drawing the mechanism is embodied in a clock the case of which comprises a cylindrical body portion 1, closed at one end and open at the other, and which may be secured to any suitable support in

any desired manner. The works of the clock are retained within the case by means of a ring 2 threaded to fit the interior of the open end of the body portion 1, and bearing against the face 3 of the clock. The front of the case is closed by a glass 4 mounted in a ring 5, which is threaded upon the outside of the open end of the body portion 1. The above construction produces a clock case which is dust and weather proof and readily adapted for use upon automobiles, motor boats and the like.

In order that the clock may be wound and set without opening or otherwise disturbing the case, it is provided with a winding stem 10, and a setting stem 11, which extend laterally through the wall of the case. The winding stem 10 extends through a hole 12 in the wall of the body portion 1, and is enlarged at its outer end to form a knurled knob 14. The inner end of the winding stem is formed with a reduced screw-threaded neck 15, which is threaded into a sleeve 16 journaled to rotate in a block 17, which is mounted upon the back supporting plate 18 of the works. The sleeve 16 is provided with a shoulder 19, which bears against the inner end of a boss 20 on the block 17. An annular groove 21 is formed exteriorly of the sleeve 16, and receives the end of a screw 22 threaded through the block 17, and engaging one end of said groove. Thus the sleeve 16 is mounted to rotate within the block 17 but is held against endwise movement therein. The outer end 23 of the sleeve 16, which projects beyond the block 17, is polygonal to fit a correspondingly shaped hole formed in the winding gear 24 held upon said sleeve by the shoulder formed on the inner end of the winding stem 10. The winding gear 24 is thus held against relative rotation on the sleeve 16. The winding gear 24 meshes with an intermediate gear 25 rotatably mounted upon a stud or post 26 carried by the front supporting plate 27 of the works. A screw 28 is threaded into the stud 26, and is provided with a flat head which forms a shoulder to retain the intermediate gear 25 upon the stud. The intermediate gear 25 also meshes with a gear 30 which is fast upon the spring shaft 31 mounted to rotate within a spring barrel 32. By the construction above set forth it will be noted that by rotating the winding stem 10 manually the spring of the clock

will be wound, and that the clock may be readily wound at all times without opening the case.

5 The setting stem 11 is slidably and rotatably mounted within the winding stem 10, and is provided at its outer end with a milled knob 34 by which it may be manually operated, as will be hereinafter explained. The inner end of the setting stem 10 11 is received within a socket fast upon the end of a shaft 36, journaled to rotate in the inner end of the sleeve 16. The setting stem 11 is prevented from rotating relatively to the socket 35 by a pin 37 extending 15 through the stem and having its projecting ends received within recesses 38 formed upon the outer end of the socket. A coiled spring 39 embraces the shaft 36 and abuts at one end against the inner end of the 20 socket 35, and at its other end against the inner face of the bearing for the shaft 36. This spring tends normally to maintain the parts in the position shown in Fig. 4, that is, in the position in which the setting stem is 25 inoperative or free to rotate without moving the hands.

A setting gear 41 is fast upon the shaft 36, and when the setting stem is pushed in to the position shown in Fig. 3 said gear 41 30 meshes with a pinion 42 rotatably mounted upon a stud 43 carried by the front supporting plate 27 of the works. The gear 42 in turn meshes with a similar gear 44 fast upon one end of a hollow boss 45 journaled 35 in the plate 27 and projecting laterally from a pinion 46 on the opposite side of the plate 27. The pinion 46 meshes with a gear 47 rotatably mounted upon a stud 48 projecting from the front side of the plate 27. The 40 gear 47 in turn meshes with a pinion 49 carried by the post upon which the minute hand 50 is mounted. A pinion 51 is fast upon the gear 47 and mounted to rotate therewith upon the stud 48. This pinion 45 meshes with the gear 52 carried by the post upon which the hour hand 53 is mounted. Thus by means of the mechanism above set forth, when the setting stem 11 is pushed in by the engagement of the knob 34 with the 50 fingers of the operator and then turned, the

minute and hour hands may be moved in either direction depending upon the direction of rotation of the knob 34. It will also be observed that the setting and winding stems may be operated entirely independent 55 of one another, and the mechanisms by which the separate operations are performed are extremely simple and compact.

While I have illustrated and described a preferred embodiment of the invention, I 60 am aware that many modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all 65 the details of construction shown and described, but

What I claim is:—

1. The combination with a case, of works within the case, a winding stem rotatably 70 mounted in said case, a setting stem rotatably mounted in the winding stem, means connecting said winding stem and works, a shaft provided with a socket having a pair 75 of recesses, a pin projecting from said setting stem and engaging said recesses, a coiled spiral spring surrounding the shaft, and a gear on said shaft adapted to be brought into engagement with the works, 80 substantially as described.

2. A clock comprising a winding stem, a sleeve mounted on the winding stem, a gear mounted on the sleeve and rotatable therewith, a setting stem rotatably and slidably 85 mounted within said winding stem, a shaft provided with a socket for receiving the end of the setting stem, driving connections between said setting stem and socket, a gear on said shaft operatively related to the hands of the clock, and a spiral spring surrounding said shaft tending normally to 90 maintain said shaft and gear in inoperative position, substantially as described.

In testimony whereof I have affixed my signature, in presence of two witnesses.

WALTER K. MENNS.

Witnesses:

W. E. MCGRAW,
WILLIAM J. SPERL.