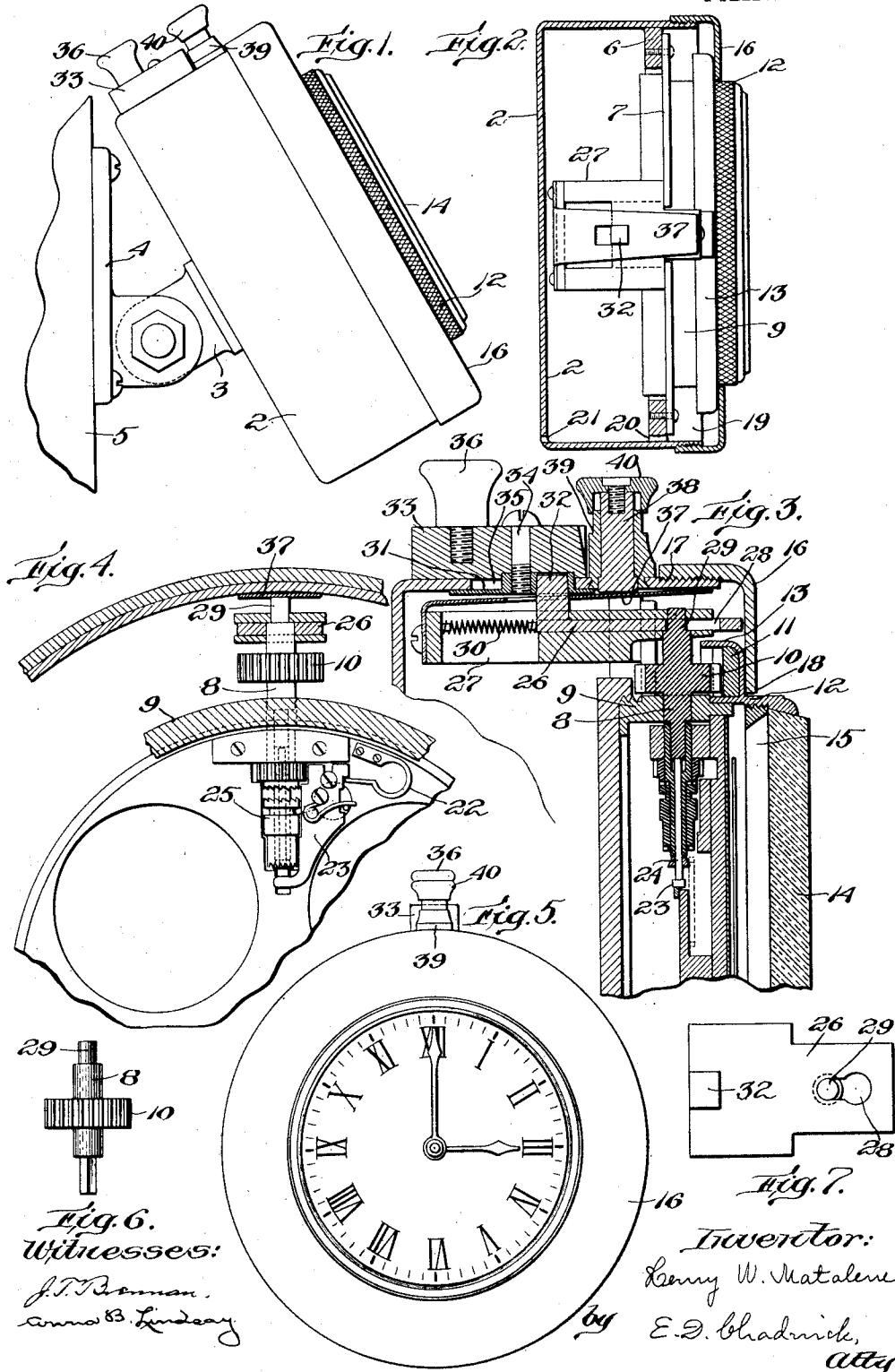


H. W. MATALENE.
CLOCK FOR AUTOMOBILES AND THE LIKE.
APPLICATION FILED DEC. 9, 1910.

1,023,383.

Patented Apr. 16, 1912.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 8.

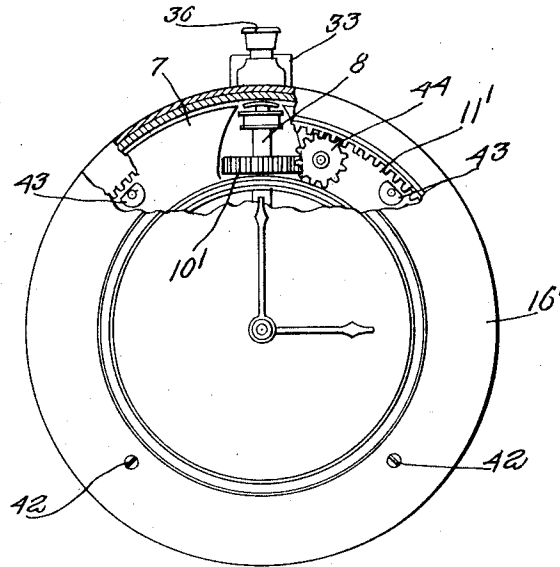
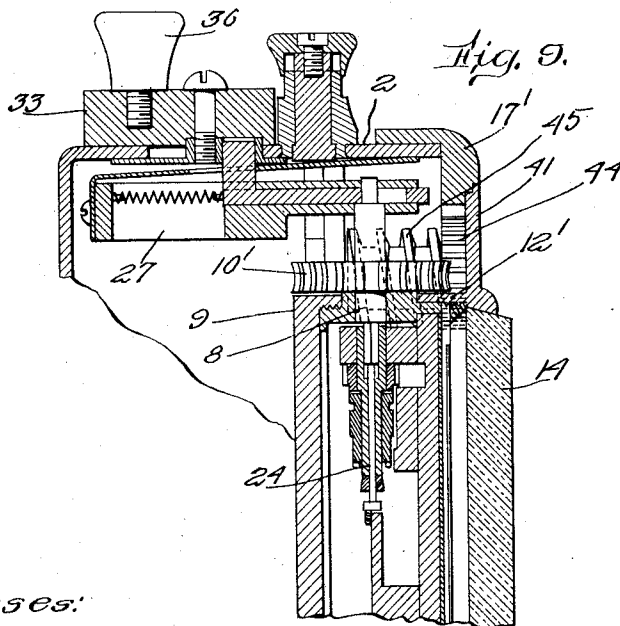


Fig. 9.



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UNITED STATES PATENT OFFICE.

HENRY W. MATALENE, OF NEW YORK, N. Y.

CLOCK FOR AUTOMOBILES AND THE LIKE.

1,023,383.

Specification of Letters Patent.

Patented Apr. 16, 1912.

Application filed December 9, 1910. Serial No. 596,431.

To all whom it may concern:

Be it known that I, HENRY W. MATALENE, a citizen of the United States, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Clocks for Automobiles and the Like, of which the following is a specification.

My invention is particularly intended to provide a clock which will be well adapted for use in exposed situations, as on automobiles and in the cabs of locomotives, for example, and comprises certain improvements, hereinafter described and claimed, by means of which the time-keeping mechanism is provided with a substantially waterproof and dustproof casing and is adapted to be wound and set from the exterior of the casing without opening the latter.

In the accompanying drawings:—Figure 1 is a side elevation of one form of automobile clock embodying my improvements, as preferably constructed; Fig. 2 is a transverse sectional view, showing in plan certain internal parts at the top of the clock; Fig. 3 is a central section from front to back through the upper portion of the clock; Fig. 4 is a sectional view at right angles to the plane of Fig. 3, showing certain parts in elevation; Fig. 5 is a front elevation of the clock; Figs. 6 and 7 show details hereinafter described; Fig. 8 is a front elevation, partly broken away, showing a somewhat modified construction; and Fig. 9 is a sectional view, similar to Fig. 3, of the construction illustrated in Fig. 8.

In the construction illustrated in Figs. 1 to 4 inclusive, the body portion of the casing of the clock is shown at 2, being provided with any convenient supporting device such as a lug 3 projecting from its back and suitably mounted on a bracket 4 adapted to be secured to the dashboard 5 of an automobile. The part 2 of the casing has an upwardly-projecting annular rib 6 to which is secured a flange 7 carrying the time-keeping movement, and preferably this movement is a large-size stem winding and setting watch movement having the so-called American system of setting, but the particular type of movement employed is not material so long as it embodies a winding stem or equivalent part which may be rotated as hereinafter described. In the form of movement illustrated the winding stem 8 is mounted to rotate and to move longitudi-

nally in the center 9 to which the flange 7 is attached, and that portion of said stem which is external to said center is provided with a pinion 10, the teeth of which mesh with the teeth of an annular rack 11 carried by a ring 12, which is mounted to rotate on the front edge portion of the center 9 and projects outward therefrom, or toward the front of the clock.

As shown in Fig. 3, the rack 11 is held within a recess bounded at the inner edge of the rack by the ring 12 and at its front face and outer edge by an annular flange 13 which extends outward and backward from said ring 12 and thus forms a sort of housing for the rack, and said ring 12 is preferably utilized as the bezel of the clock, being so formed at its front edge as to receive and hold the crystal 14, which is secured in place by the reflector 15 screwed into the ring 12 behind the crystal, as shown. The ring 12 is held on the bearing provided therefor by the center 9 by means of a cover 16 having at its periphery a ring-shaped portion 17 which is screwed on to or otherwise connected to the front portion of the body 2 of the casing, said cover being provided with a central aperture at 18 through which the front or outer portion of the ring 12 projects into position to be grasped and rotated from the exterior of the clock.

As thus constructed, assuming that the parts of the movement are in winding relation, the clock can be wound by grasping the outwardly-projecting portion of the ring 12 and rotating the same in the proper direction, whereupon the pinion 10 and the winding stem 8 will be rotated to wind the clock, and the ratchet mechanism usually provided in watch movements will also permit the ring 12 to be rotated in the opposite direction, so that the winding of the clock may be accomplished by alternately turning said ring backward and forward without letting go of the same. Provision is thus made for winding the clock without opening the casing at any point and in a most convenient manner, since in an automobile clock the front of the same is the most readily accessible part, and the described construction also provides an effectively dust-proof and water-tight casing for the movement, since the only point of access to the interior of the casing is at the edge of the aperture 18 in the cover 16, and any dust or water which finds its way into the casing at

this point will be deflected by the flange 13 and ultimately deposited in the annular space 19, Fig. 2, which surrounds the center 9, from which space any accumulation of water may be drained by providing the rib 6 and the back of the casing with perforations 20 and 21 located at the bottom of the casing, the movement being further protected by the close fit between the ring 12 and the front edge portion of the center 9 on which said ring turns.

In addition to the means above described for winding the clock, my invention also includes an arrangement by means of which the hands may be set by rotating the ring 12, to which end the rack 11 is made wide enough to permit the pinion 10 to slide thereon, lengthwise of its teeth, when the winding stem is moved outward to bring the parts of the movement into setting relation, and a spring is provided for forcing the winding stem outward whenever such movement is permitted. Watch movements constructed according to the American system of setting contain such a spring as a part of the winding and setting mechanism, said spring being shown at 22, Fig. 4, and being arranged to operate through the sliding plate 23 on the lower end of the pin 24 located beneath the winding stem 8 in such manner as to lift said pin and stem and simultaneously move the clutch 25 in the opposite direction to bring it into the position shown in Fig. 4, which is the setting position. The details of construction of the setting mechanism just referred to are well known and therefore need not be further described, but when such a movement is combined with a watch case in the usual manner the pin 24 is normally held in its lowermost position, shown in Fig. 3, by the sleeve contained in the pendant of the watch case. In the construction herein represented, however, this sleeve is omitted, so that the spring 22 will lift the pin 24 and the winding stem 8 unless such movement is resisted, and for this purpose I provide a plate 26 mounted to slide in a fixed frame 27 located in the upper part of the casing 2, which plate has a key-hole slot 28 located directly over the stem 8, the upper end of said stem being reduced in diameter as at 29 to fit the narrow portion of the slot 28, while the larger portion of said slot is of such size as to receive the stem 8 below the shoulder at the lower end of the portion 29. When the plate 26 is in its forward position and the stem 8 is in its lowermost position, as shown in Fig. 3, the parts of the movement being then in winding relation, the reduced upper end 29 of the stem 8 is located in the narrow portion of the slot 28 and said stem is prevented from rising by the engagement of the plate 26 at the edges of said slot with the shoulder at the lower end of the portion

29 of the stem, but if said plate 26 is slid backward the larger portion of the slot 28 will be brought into alinement with the stem 8 and said stem will immediately be forced upward into the same by the spring 22, thus bringing the parts into setting relation, whereupon the hands of the clock may be set by suitably rotating the ring 12 from the exterior of the clock. A spring 30 is arranged to force the plate 26 forward, and for moving said plate backward against the spring 30 I provide another plate 31 mounted to slide on the inside of the top of the casing and having a recess which receives an upwardly-projecting stud 32 formed on said plate 26, the plate 31 being secured to a block 33 mounted to slide on the exterior of the casing by means of a screw 34 passing into a hub carried by said plate 31 and arranged to slide in a slot 35 formed in said casing. The block 33 covers the slot 35 and thus prevents dust and water from entering the casing at this point, and is provided with an operating knob 36.

For forcing the winding stem 8 downward against the pressure of the spring 22, I provide a leaf spring 37 secured at one end to the frame 27 and extending forward therefrom, with its front end located over the upper end of said stem 8, and a plunger 38 is mounted to slide in a bearing 39 carried by and extending upward from the top of the casing and bears at its lower end upon the top of the spring 37. Said plunger is preferably provided on its upper end with a recessed cap 40 adapted to receive the upper end of the bearing 39 and serving to keep dust and water out of the latter. After the hands of the clock have been set the plunger 38 is pressed downward, whereupon the free end of the leaf spring 37 engages the upper end of the winding stem 8 and forces it downward until the spring 30 moves the plate 26 forward and locks said stem in winding position as already described.

In the modification shown in Figs. 8 and 9 the bezel is fixed and other means are provided for rotating the winding stem from the exterior of the clock. Thus, as shown in Fig. 9, the ring 12' on which the bezel is formed surrounds the front edge portion of the center 9, as in the construction first described, but is fitted tightly thereto and carries a circular cover plate 41, which is secured by screws 42 to posts 43 extending forward from the plate 7. A ring-shaped member 17' is mounted to rotate on the front edge portion of the body 2 and is confined thereon by the plate 41, which is preferably fitted at its periphery to a recess cut in the front face of said ring as shown in Fig. 9. The ring 17' is provided with an inwardly facing rack 11' which meshes with a pinion 44 journaled in

the plates 7 and 41, and the shaft of the pinion is provided with a worm-gear 45 which meshes with the pinion 10' on the winding stem 8 and permits said pinion to move axially. Rotational movements imparted to the ring 17' in either direction will thus be transmitted to the winding stem, said stem and the other parts of the mechanism being constructed and arranged to operate as previously described. The construction shown in Figs. 8 and 9 is also adapted to render the clock dust-proof and waterproof, since the bearing surfaces on which the cover moves may be accurately fitted together, while the ring 12' is fitted tightly to the center 9 and thus effectively seals the space within which the movement is contained.

Various other modifications may be made in the construction and arrangement of the parts of the clock without departing from the substance of my invention, as will be evident.

The combination of a watch movement having a spring for moving its winding stem into setting position and a spring-actuated sliding catch operable independently of the winding stem from the exterior of the case for holding said stem in winding position is not broadly claimed herein, as a watch mechanism having these characteristics forms the subject-matter of another application filed by me on the 10th day of June, 1911, Serial No. 632,312.

I claim as my invention:—

1. The combination with a time-keeping mechanism comprising a rotatable winding stem, a pinion thereon, and a center in which said winding stem is journaled, of a casing containing said parts, a rotatable ring located at the front portion of the casing and exposed for operation from the exterior thereof, an annular rack carried by said ring and adapted to rotate said pinion, and a cover overlapping said ring and holding the same in place.

2. The combination with a time-keeping mechanism having a rotatable winding stem, a pinion thereon, and a center in which the stem is journaled, of a casing containing said parts and providing an annular space around said center, and means for closing the front of said annular space, comprising ring-shaped members mounted respectively on the front of the casing and the front of said center and a cover extending from one of the ring-shaped members to the other, one of said ring-shaped members

being rotatable and having a rack adapted to rotate the pinion on the winding stem.

3. The combination with a stem-winding and setting watch movement of a casing containing the same, a rotatable ring located at the front portion of said casing, connections between said ring and the winding stem for rotating the latter, and means for moving the winding stem into and out of setting position.

4. The combination with a watch movement having a winding and setting stem with a pinion mounted thereon, of a casing containing said movement, means for moving said stem into and out of setting position, a rotatable ring exposed for operation on the exterior of the casing, and a rack carried by said ring and arranged to rotate the pinion on the winding stem.

5. The combination with a watch movement having a winding and setting stem provided with a pinion and a spring adapted to move said stem outward into setting relation, of a casing containing said movement, means for moving said stem into winding relation from the exterior of the casing, a spring-actuated catch adapted to hold said stem in winding relation, means operative from the exterior of the casing for releasing said catch, a rotatable ring located at the front portion of the casing, and an annular rack carried by said ring and adapted to rotate the pinion on the winding stem.

6. The combination with a stem-winding and setting watch movement having its winding stem provided with a pinion and a spring tending to move said stem outward into setting relation, of a casing containing said movement, a sliding plate having a key-hole slot adapted to control the outward movement of said winding stem, means for operating said plate from the exterior of the casing, a plunger operative from the exterior of the casing for forcing the winding stem into winding relation, a rotatable ring located at the front portion of the casing, and an annular rack carried by said ring and adapted to rotate the pinion on the winding stem.

In testimony whereof, I have hereunto subscribed my name this 8th day of December, 1910.

HENRY W. MATALENE.

Witnesses:

E. D. CHADWICK,
JOSEPH T. BRENNAN.