To all whom it may concern:  

We have not in the drawings indicated 55 all of the gearing for transmitting motion from the mainspring to the hands of the clock, as such gearing forms no portion of our present invention.

The inner or movement-case 3 has a back 60 or base 9 provided with an annular flange 10, the purpose of which will be explained hereafter. This movement case is arranged to be rotated back and forth within the outer case 2, its motion being limited by a 65 pin 11 secured to a centrally bossed plate 12, itself secured to base 1, this pin 11 projecting through a slot 13, in the back 9 of the movement-case 3. A helical spring 14 is connected at one end to this pin 11, and at 70 its other end is provided with an outturned projection 15 engaging one side of an opening 16 in back plate 9, the arrangement being such that when the movement-case 3 is rotated clockwise, such rotation is opposed by a spring 14, and as soon as the movement-case is released, said spring 14 will move the movement-case back to first position.

17 designates the main spring-winding 80 arbor. This arbor has a bearing in plate 12, above mentioned, and in the rear movement plate 7, and has secured to it a ratchet wheel 18, the ratchet 19 of which is pivoted to the plate 12 at 30. Said ratchet is provided with the usual ratchet spring 21, and with a tooth 22, to engage the teeth of the ratchet wheel 18. The arbor 17 is further provided with a gear wheel 23 which, when the parts are in normal position, is in mesh 90 with the gear 24 on the arbor 25 of the main-spring, the latter being, as usual, within the barrel 8.

The movement case 3 is provided with a screw-connected ring 33, by which said movement case may be rotated for winding the clock or for setting the hands. This ring 33 carries the usual glass 35 which protects the hands and dial of the clock. During clockwise rotation of the movement case one of the teeth of ratchet wheel 18 is engaged by the tooth 22 of ratchet 19 and the ratchet wheel is held stationary; but during the backward rotation of the movement case the ratchet wheel slips idly under the ratchet: the result being that motion is transmitted to gear 24 and the spring is wound. For setting the clock the entire movement case 3
with the movement within it, is arranged to be drawn forward so as to bring a pinion 26 on a shaft 27 into mesh with a gear 28 on the main spring winding arbor 17. To so pull the movement case 3 forward, the ring 33, screw connected to the case 3, as shown particularly in Figs. 2 and 6, is grasped and drawn forward. Fig. 6 shows the movement case in the resulting setting position.

While this movement of the movement case draws the gear 26 into mesh with the gear 28, the same movement draws the winding gear 24 out of mesh with the winding gear 23. The result is therefore to throw the winding gear out of action and throw the setting mechanism into action; for shaft 27, upon which pinion 26 is mounted, connects with the usual hand-driving train 29 located between the front movement plate 5 and the dial 4.

When the movement case 3 is drawn into the forward or setting position shown in Fig. 6, the flange 10 on the back 9 of the movement case 3 embraces the ratchet 19 of the winding mechanism so closely that the tooth 22 of that ratchet cannot move out of engagement with the teeth of the ratchet wheel 18. Said flange, so holding the ratchet, in engagement with the ratchet wheel, in effect locks the gear wheel 28 stationary, against movement in either direction, so that rotation of the movement case when in the position shown in Fig. 6, affects rotation of the pinion 26, shaft 27 and the operation of the hand-driving train 29.

Normally the movement case is held in the position shown in Fig. 2 by a spring 30 shown particularly in Figs. 2 and 5; the arms of which spring tend to press the back of the movement case 3 backward. During the operation of setting the hands, the movement case 3 is held forward in the position shown in Fig. 6, against the tension of this spring; and as soon as the movement case is released, the spring 30 throws it back into the position shown in Fig. 2.

The operation of the winding and setting mechanism is therefore as follows: To wind the clock the ring 33 is rotated forward and back through an angle represented by the slot 13, or through any convenient smaller angle; and during each forward or counterclockwise rotation of the ring 33 (and therefore of the movement case 3 and the movement within it) the ratchet 19 engages the teeth of ratchet wheel 18, and holds said ratchet wheel stationary, so causing gear 23 to impart motion to gear 24 and to wind the main spring, while during the backward rotation said ratchet 19 slips over the ratchet wheel 18 stationary. To set the hands, the movement case 3 is drawn forward by means of the ring 33, thus disconnecting gears 23 and 24 of the spring winding train and intermeshing gears 26 and 28 of the hand setting mechanism, and then, by rotating ring 33 in either direction, as circumstances may require, the hands are set, after which the ring 33 is released, and the spring 30 draws the movement case back to the position shown in Fig. 2.

What we claim is:

1. A clock comprising in combination a base, a movement case rotatable with respect to said base and adapted to receive and carry the movement of said clock, a winding train for a movement so carried comprising gears carried by said case for winding a main spring of such movement, and a ratchet and ratchet wheel, one of which is mounted on the driving member of the winding train, and the other on a portion of the clock which is stationary with relation to the base, and means enforcing alternate forward and backward rotation of the movement case for winding the clock.

2. A clock comprising in combination a base, a movement case rotatable with respect to said base and adapted to receive and carry the movement of said clock, a winding train for a movement so carried comprising gears carried by said case for winding a main spring of such movement, and a ratchet and ratchet wheel, one of which is mounted on the driving member of the winding train, and the other on a portion of the clock which is stationary with relation to the base, and a spring tending to return the movement case when the latter is rotated.

3. A clock comprising in combination a base, a movement case rotatable with respect to said base and adapted to receive and carry the movement of said clock, a winding train for a movement so carried comprising gears carried by said case for winding a main spring of such movement, and a ratchet and ratchet wheel, one of which is mounted on the driving member of the winding train, and the other on a portion of the clock which is stationary with relation to the base, a spring tending to return the movement case when the latter is rotated, and means enforcing alternate forward and backward rotation of the movement case for winding the clock.

4. A clock comprising in combination a base, a movement case rotatable with respect to said base and adapted to receive and carry the movement of said clock, a winding train for a movement so carried comprising gears carried by said case for winding a main spring of such movement, and a ratchet and ratchet wheel, one of which is mounted on the driving member of the winding train, and the other on a portion of the clock which is stationary with relation to the base, and a pin secured to said base and projecting through said slot.
and serving, with the slot, to enforce alternate forward and backward rotation of the movement case for winding the clock.

5. A clock comprising in combination a base, a movement case rotatable with respect to said base and adapted to receive and carry the movement for said clock, said movement case having in it a curved slot, a winding train for a movement so carried comprising gears carried by said case for winding a main spring of such movement, and a ratchet and ratchet wheel, one of which is mounted on the driving member of the winding train, and the other on a portion of the clock which is stationary with relation to the base, a pin secured to said base and projecting through said slot and serving, with the slot, to enforce alternate forward and backward rotation of the movement case for winding the clock, and a spring, one end of which is connected to said pin and the other end of which is connected to said movement case, said spring tending to return the movement case when the latter is rotated.

6. A clock comprising a base, a movement case rotatable with respect to said base and adapted to receive and carry the movement of said clock, a winding train for a movement so carried comprising gears carried by said case, and a gear and an arbor therefor carried by said base, a ratchet wheel and a ratchet therefor, one of which is mounted upon said arbor and the other upon a portion of the clock which is stationary with respect to said base, said movement case adapted to be moved axially with respect to said base, thereby disconnecting two of the gears of the winding train, a hand-driving train, and a gear drivingly connected to such hand-driving train and arranged to be moved axially with the movement case, said arbor provided with a gear with which the said gear of the hand-driving train intermeshes when the case is moved axially from the winding to the setting position, and a spring tending to return the movement case from setting to winding position.

9. A clock comprising in combination a base, a movement case mounted to rotate with respect thereto and also to be moved axially with respect thereto from winding to setting position, a spring winding train comprising gears and an arbor, the latter coaxial with the case, a ratchet wheel on said arbor and in driving connection with the winding train, a ratchet for said ratchet wheel, pivoted to the base, said winding train arranged to be thrown out of operation when the movement case is moved axially from winding to setting position, and a hand-driving train comprising a gear arranged to be moved axially with the movement case, said arbor provided with a gear with which the said gear of the hand-driving train engages when the movement case is moved to setting position, said movement case provided with a flange which embraces the ratchet when the movement case is in setting position, and holds said ratchet against disengagement from its ratchet wheel, said flange being out of position to engage said ratchet when the movement case is in winding position.

10. A clock comprising in combination a base, a movement case rotatable about its central axis with respect to said base and adapted to receive and carry the movement of said clock, a winding train for a movement so carried operated by rotation of the movement case, and automatic means for returning said case to normal position.

11. A clock comprising in combination a base, a movement case rotatable about its central axis with respect to said base and adapt-
ed to receive and carry the movement of said clock, a winding train and a hand setting train for the movement so carried operable, the one or the other at will, by rotation of the movement case, and automatic means for returning said case to normal position.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

ELMER E. WILKINSON.
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Witnesses:

M. R. REDMOND,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."