April 30, 1940. R. H. WHITEHEAD ET AL 2,199,017

SETTING MECHANISM FOR CLOCKS

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Fig. 1.

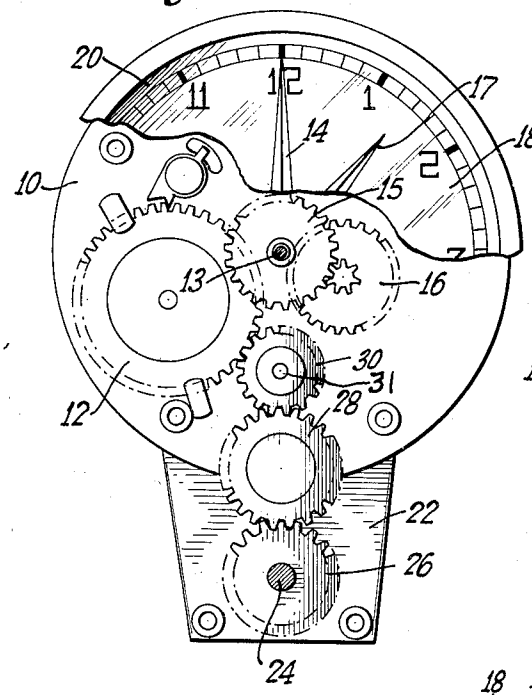


Fig. 2.

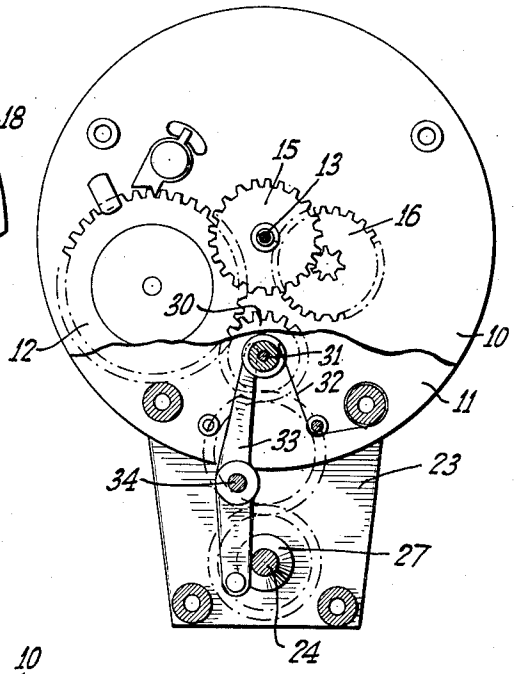
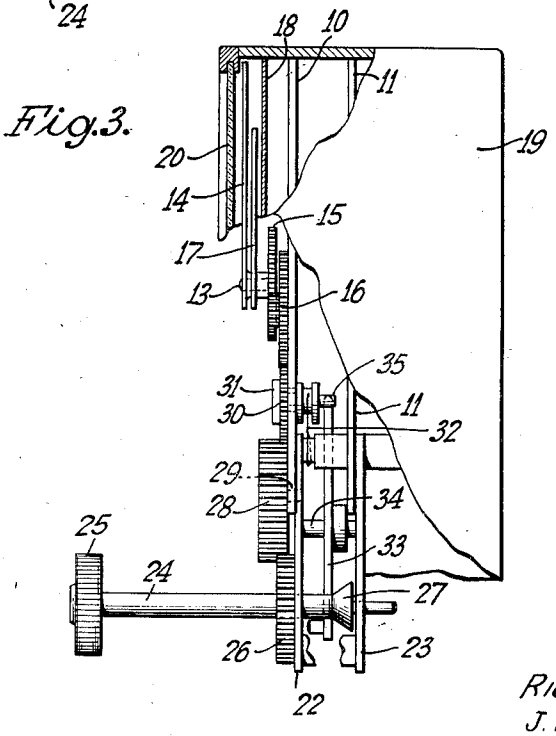


Fig. 3.



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Fig. 4.

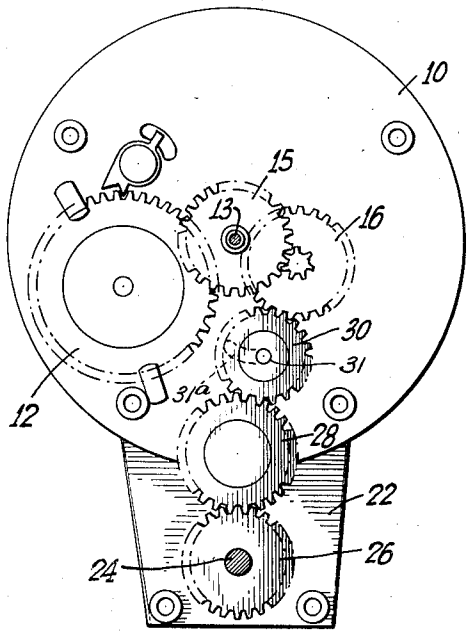


Fig. 5.

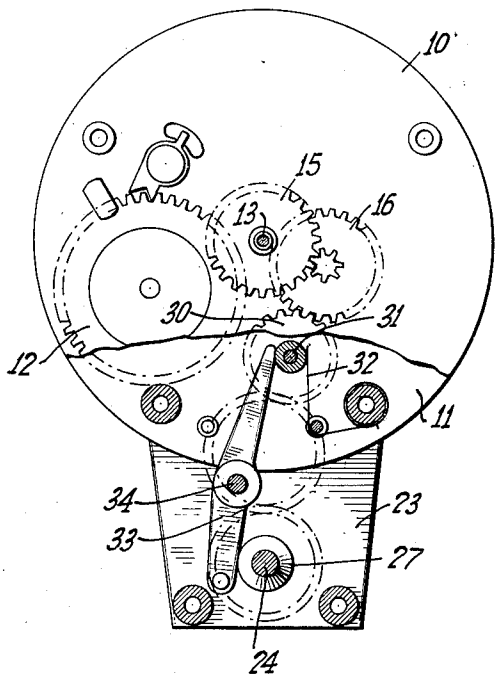
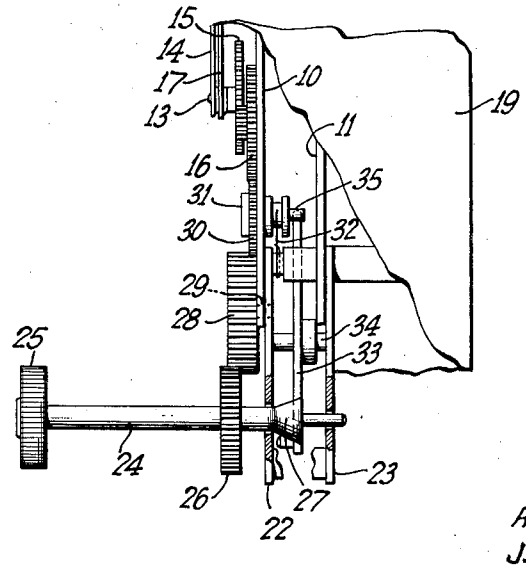


Fig. 6.



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UNITED STATES PATENT OFFICE

2,199,017

SETTING MECHANISM FOR CLOCKS

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Application January 15, 1938, Serial No. 185,128

4 Claims. (Cl. 58—80)

This invention relates to mechanism for setting the hands of a clock or other instrument, particularly of clocks intended for use on an instrument panel, as for example automobile clocks where the works are not readily accessible.

It is an object of this invention to provide a new and improved setting mechanism which will enable the hands to be set from a point outside the periphery of the dial proper without placing any additional driving load upon the clock motor.

For the purpose of transferring the setting shaft at a point distant from the time train it is appropriate to connect them by a setting gear train connected at one end to the setting shaft and at the other meshing with the works. Such a gear train, however, when driven by the works imposes an unnecessary load upon the motor.

It is an object of this invention to provide a setting train that is all automatically thrown out of mesh with the works as soon as setting is completed.

The invention accordingly comprises the features of construction, combination of elements, and arrangements of parts, which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description, taken in connection with the accompanying drawings, in which:

Figure 1 is an elevation of a clock embodying this invention, parts being broken away.

Figure 2 is a similar view with the front supporting plate broken away.

Figure 3 is a side elevation, parts being broken away.

Figures 4, 5 and 6 are views similar to Figures 1, 2 and 3, showing the parts in setting position.

It is a further object to provide a setting mechanism that may easily be assembled with standard time trains, so that the same time train may be used for various timing purposes, without undue change of construction.

While the invention is applicable to any form of movement, I have chosen to illustrate it as applied to a spring drive clock, but the principal parts of the time train are omitted for the sake of simplicity.

In the drawings the numerals 10 and 11 are used to designate the front and back supporting plates in which the time train is mounted, of which I have illustrated only the main spring gear 12, minute wheel shaft 13 driving minute-hand 14 and hour wheel 15 driven by reducing gear 16 and carrying an hour-hand 17. The numeral 18 is the face and 19 the case of the clock having a glass 20. As will be understood, the hands will preferably be driven through the medium of a slip connection or ratchet.

When the setting mechanism is attached to existing or standard movements there may be provided two auxiliary supporting plates 22 and 23 carried by the time train supporting mechanism, having pivoted therein a set shaft 24 carrying at its outer end a suitable handle here shown as a knurled knob 25. The shaft 24 has also fixed upon it a pinion 26 and a cone shaped cam 27.

The pinion 26 meshes with a pinion 28 pivoted on a shaft 29 fixed in plates 10 and 22 and a gear 30 mounted on a floating shaft 31 is arranged to move about the pinion 28, the shaft 31 moving in a slot 31*a* long enough to enable pinion 30 to engage the reduction gear 16 on the one hand and to move away from gear 16 on the other. Where the mechanism is spring wound the off position of pinion 30 will be such as to engage and drive the main spring. The shaft 31 is normally urged away from gear 16 by a spring 32.

A lever 33 is pivoted on a shaft 34 in plates 22, 23 and has one arm disposed to engage the surface of cone cam 27 and another arm engaging a projecting end 35 of floating shaft 31, the lever being so shaped that when the lever 33 engages the smaller end of cone 27 the shaft 31 is free to permit spring 32 to urge gear 30 to its position away from gear 16, but when lever 33 engages the large end of the cone the gear 30 is urged into mesh with gear 16.

The shaft 24 is movable endwise in its bearings by an amount sufficient to slide cone 27 in its engagement with lever 33 from the little end of the cone to the big end, thus moving gear 30 into and out of mesh with gear 16.

Any convenient means desired may be employed to keep shaft 24 normally in its position to disengage gears 30 and 16, but ordinarily the effect of spring 32 on cone 27 will be sufficient to achieve this result.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A setting mechanism adapted for use with clocks having a main shaft, an hour hand and an hour hand reduction gear comprising a shaft parallel to the main shaft of the clock, a gear train connecting said shaft with the hour hand reduction gear and including a movable shaft having a gear mounted thereon and movable into and out of mesh with said reduction gear, a spring for moving said shaft to move said gear out of mesh, a lever for moving said gear into mesh and a conical cam upon said parallel shaft adapted to engage said lever and move it in position to cause the engagement of said gear when said parallel shaft is moved along its axis.

2. A device in accordance with claim 1 in which the spring for moving said movable gear and said lever and said conical shaft are so designed and constructed that said spring will be apt to move said shaft in response to said spring to bring said movable gear out of mesh with said reduction gear.

3. A clock including a time train, a main spring shaft and gear for driving said time train and an hour hand reduction gear, a gear movable from a position to engage said main spring gear to a position to engage said reduction gear, a shaft parallel to the main shaft of said train, means including a gear for connecting said parallel shaft to said movable gear and means responsive to endwise movement of the parallel shaft for bringing said movable gear from a position in contact with the main spring gear to a position in contact with the hour hand reduction gear.

4. A device in accordance with claim 3 and having spring means for returning said parallel shaft to its initial position after it has been moved endwise.

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