

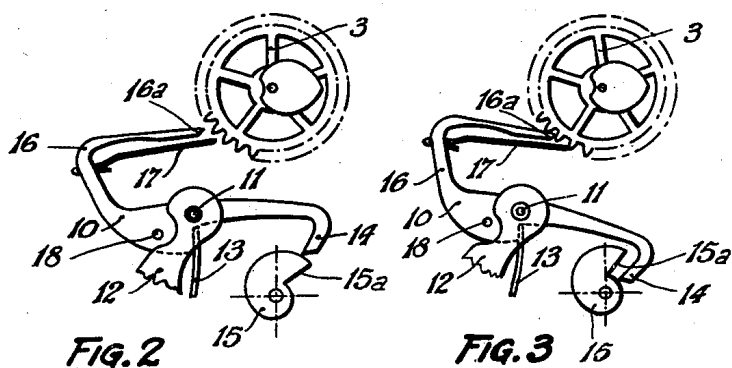
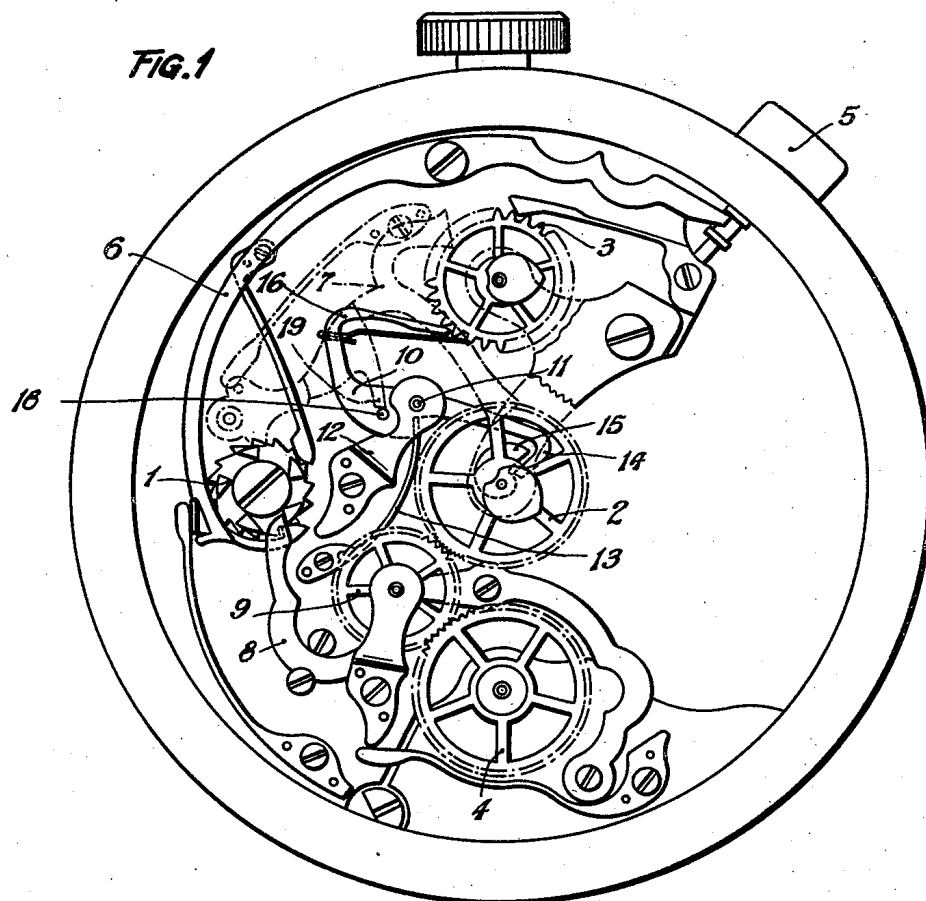
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WATCH

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WATCH

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2 Claims. (Cl. 58—76)

This invention relates to watches, and more particularly stated, to chronograph movements of the type having a minutes counter device, wherein the counter wheel and the indicating organ advance intermittently, by jerks.

The object of the present invention is the provision of a chronograph mechanism of the above-mentioned type, comprising a cam revolving on the axle of the chronograph center wheel and a spring controlled lever operated by said cam for intermittently imparting a shock to the counter wheel, whereby means are provided on said lever for limiting the advance of the counter wheel at each shock, to one tooth for instance.

Another object of the invention is the provision of a nose on said lever for permitting to the resetting hammer to disconnect the lever from the center wheel cam and from the counter wheel before effecting the resetting to zero.

In the drawing:

Figure 1 is a plan view of an embodiment of the present invention.

Figures 2 and 3 are plan views of a detail, seen in two different working positions.

1 is a ratchet wheel having columns parallel to its axis. The chronograph wheel 2 for the seconds is disposed in the center of the watch movement and may therefore be called center wheel. It carries on its axle a heart shaped cam and the seconds hand which is not illustrated. The counter wheel 3 for the minutes carries on its axle also a heart shaped cam and the not illustrated minutes counter hand. Said heart shaped cams are provided for the resetting to zero. 4 is a seconds wheel on the axle of and above the ordinary seconds wheel of the watch movement and it is constantly in gear with the intermediate wheel 9 carried by the lever 8. The latter is operated by the ratchet wheel 1 and can put the intermediate wheel 9 into gear with center wheel 2, as shown in the drawing, or contrarily, disconnect it. The ratchet wheel 1 governs also the hammer 7 which actuates the above-mentioned heart shaped cams for resetting the counter hands to zero. This ratchet wheel itself is commanded by the pusher 5 acting by the intermediate lever 6. As this mechanism is not new, it will not be necessary to describe it more detailed.

10 is a lever pivoted in 11 between the pillar-plate and the bridge 12 and is controlled by the spring 13 which applies the end 14 of said lever 10 against a cam 15 of spiral shape presenting a plane radial face 15a and revolving on the axle of the center wheel 2. The other end 16 of the

lever 10 is adjacent to the counter wheel 3. A leaf spring 17 is fixed to this lever, the free end of which is slightly extending beyond the end 16a of said lever. A nose 18 is provided on this lever for cooperating with a heel 19 of the resetting hammer 7.

While the center wheel 2 is rotating, the cam 15 acts on the lever and removes the free end of the spring 17 successively a little from the tooth of the counter wheel 3, which is directly in front of said spring. At the end of a minute the radial face 15a will have reached the end 14 of the lever, which follows the contour of the cam by springing inwardly, imparting thus by means of the leaf spring 17 an impulse to the counter wheel 3 which makes the latter advance. The end 16a of the lever is disposed in a manner, that, immediately after the impulse has occurred, it is placed between two teeth of the wheel 3 in order to hinder the latter to rotate by more than one tooth at each shock.

For resetting the minutes and seconds hands of the chronograph to zero, the hammer 7 is actuated by means of the ratchet wheel 1. Before the hammer 7 will be applied to the heart shaped cams of the wheels 2 and 3, its heel 19 will act on the nose 18 of the lever in a manner that said lever is moved into a neutral position wherein it does neither cooperate with the cam 15 nor with the counter wheel 3.

I claim:

1. The combination with a chronograph mechanism having a seconds hand wheel and a minutes counting device wherein the counter wheel carrying the indicating member advances by jerks, of actuating means for the minutes counter wheel, comprising a cam revolving on the axis of the seconds hand wheel, a pivotally mounted fork lever with two approximately parallel arms one of which cooperates with said cam, while the other arm has its end adjacent to the circumference of the counter wheel so as to engage the teeth of said wheel, a restoring spring adapted to resiliently apply said first arm of the fork lever against said cam, and a leaf spring approximately parallel to said other arm and fixed at one end thereto, the free end of said leaf spring extending slightly beyond the end of said other arm and being adapted to act by impulse upon the counter wheel so as to rotate the same, while the end of said other arm of the fork lever is adapted to prevent said counter wheel from rotating by more than one tooth at each impulse.

2. The combination with a chronograph mech-

anism having a seconds hand wheel and a minutes counting device wherein the counter wheel carrying the indicating member advances by jerks, of actuating means for the minutes counter wheel, comprising a spiral cam revolving on the axis of the seconds hand wheel together with said wheel, a pivotally mounted fork lever being provided with a nose and having two approximately parallel arms one of which engages said spiral cam while the other arm has its end adjacent to the circumference of the minutes counter wheel so as to engage the teeth of said wheel, a restoring spring adapted to resiliently apply said first arm against said spiral cam, and a leaf spring approximately parallel to said other arm and fixed at one end thereto, the free end of said leaf spring extending slightly beyond the end of said other arm and being adapted to act

by impulse upon the minutes counter wheel so as to rotate the same, while the end of said other arm of the fork lever is adapted to prevent said counter wheel from rotating by more than one tooth at each impulse, and of resetting means for setting the seconds hand wheel and the minutes counter wheel to zero, comprising a heart-shaped cam carried by said seconds hand wheel, a heart-shaped cam carried by said counter wheel, and a hammer adapted to be applied against said heart-shaped cams, said hammer being provided with a heel adapted to act upon the nose of the fork lever so as to release said lever from engagement with the spiral cam and counter wheel before said hammer is applied against said heart-shaped cams.

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