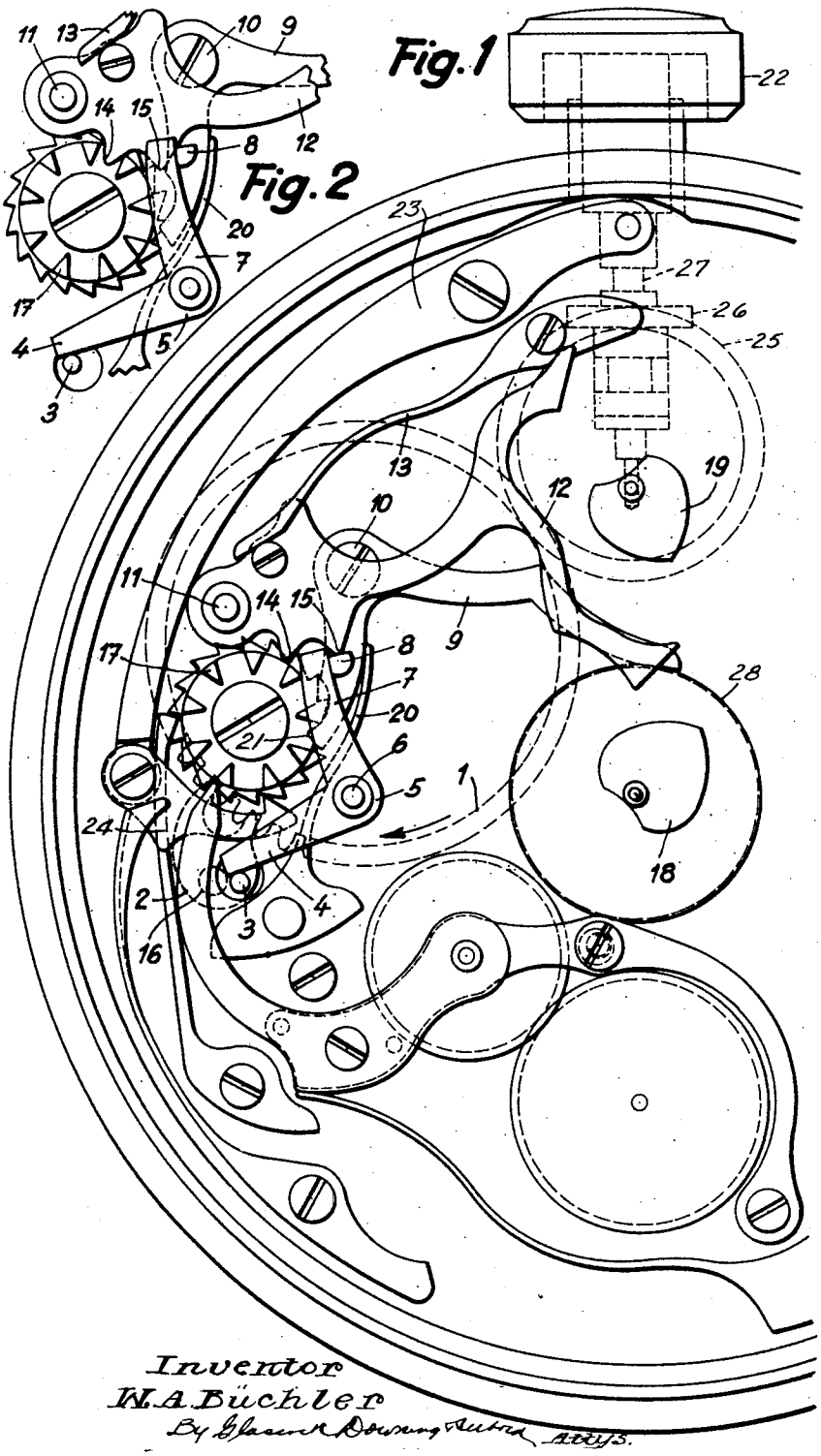
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CHRONOGRAPH

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CHRONOGRAPH

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1

This invention relates to chronographs, that is, to timekeepers leaving a record of their going, comprising a winding stem arranged to start, stop and flyback flyback-hands.

An object of my invention is to induce or release flyback-motion of the flyback-hands by rotating the winding stem.

Other objects and features will be apparent as the following description proceeds, reference being had to the accompanying drawings, showing by way of example one embodiment of my invention, and wherein

Fig. 1 shows the position taken by the organs operating the chronograph when the flyback hands have been stopped in any place, and

Fig. 2 shows the position of a part of said organs including a castle ratchet, after the flyback hands have been brought back.

The numeral 1 indicates the winding pinion in which the click 2 engages, thereby impeding the turning back of said winding pinion which meshes with the wheel 25. This latter engages in the wheel 26 of the winding stem 27 which carries the crown 22. Thus, by rotation of the crown 22 the winding pinion 1 may be rotated. This click bears a pin 3 which cooperates with the arm 4 of a bent lever 5. This bent lever is pivoted at 6, and its arm 7 is disposed so that it may modify the position of the bolt 8. This bolt 8 is fixed to a brake member 9 which is formed as a double lever, and is pivoted at 10. The resetting or flyback member 12 is pivoted in its turn at 11 and is submitted to the action of the spring 13, and it is provided with a lip 14 as well as with a boss 15, that lies on the bolt 8 under conditions mentioned further. The lip 14 engages the hollow spaces of the castle ratchet 17 constituting a flyback hand-return member, so that the position of the resetting member 12 depends as well on the action of spring 13 as on the castle ratchet 17, said position depending furthermore on the motion of click 2 transmitted to bolt 8.

By pressure upon the crown 22 the castle ratchet 17 may be turned through the intermediary of the lever 23 and the pawl 24 mounted on the latter and engaging the teeth of the castle ratchet 17. If by such pressure upon the crown the castle ratchet 17 is brought into a position in which the end 21 of the brake member 9, under the action of spring 20, is allowed to enter a pawl of the castle ratchet, the brake member 9 stops the wheel 28 and thereby the center-seconds hand not shown. On a further pressure upon the crown 22, the castle ratchet 17 is again turned, and the end 21 of the brake member 9

2

disengaged from the space of the ratchet and thereby the wheel 28 and with it the center-seconds hand released to continue its motion.

The two possible positions of the resetting member 12 are shown in Figs. 1 and 2. In Fig. 1 it is cocked; that is, the flyback hands to which the heart-shaped cams 18, 19 belong, having been stopped in any position, said resetting member is ready for bringing them back to their zero position. Fig. 2 relates to the position which it takes after the flyback hands have been brought back.

The working of the device according to this invention, i. e. the releasing of the cocked resetting member by a rotation of the winding stem, will be described by starting from Fig. 1. This Fig. 1 corresponds to the position at which the flyback-hands, for instance a center seconds hand and any other flyback hand, on account of a pressure upon the crown, have just been stopped by the brake. Then the lip 14 of the resetting member 12 is in reach of a hollow space of the castle ratchet or flyback hand-return member 17, at the very time when the resetting member 12 is retained in this position by the bolt 8, which is shoved under the boss 15. If the winding stem is operated in the winding up direction, then the winding pinion rotates in the arrow direction, the click 2 slides along the teeth and is so caused to turn about its fulcrum 16. The pin 3 which is connected fast with the click 2 and therefore moves in the same direction, pushes the bent lever 5 and causes a rotation of said lever about 6. The other arm 7 is thereby swung out and takes along the bolt 8 in its swinging movement. Now, this bolt motion causes two different effects. First it releases the brake member 9, since as said already the bolt 8 is rigidly connected with an arm of the brake member 9, which is formed as a double lever and is pivoted in 10; secondly, the bolt 8 escapes the boss 15 of the resetting member 12, and this member is therefore released. The lip 14 lying in reach of an engaging space of the castle ratchet or flyback hand-return member 17, the resetting member under the action of the spring 13 will rotate and act upon the heart-shaped resetting cams 18 and 19, to turn the latter and thereby to bring back to their zero position the flyback hands not shown (Fig. 2).

For cocking the resetting member 12, i. e. in order to bring it back to the position shown in Figure 1, the castle ratchet is rotated by half a pitch by well-known means causing, apart from the releasing of the flyback hands, the raising of the lip 14 out of the engaging space of the castle

ratchet. Thereby the bolt 8 snaps again below the boss 15 under the action of the brake spring 20, whereby said resetting member remains seized in this position until the flyback hands are stopped, i. e. until the castle ratchet is again rotated for half a pitch. Now the relative position of the different parts is again that shown in Fig. 1.

What I claim is:

1. In a chronograph, a flyback hand-return member, a pivoted resetting member engageable with and disengageable from said flyback hand-return member, a stop means for holding said resetting member in disengaged position with regard to said flyback hand-return member, a winding stem, a toothed wheel, transmission gears connecting said winding stem with said toothed wheel to rotate the latter on rotation of the winding stem, and control means connecting said toothed wheel with said stop means to move the latter out of holding position with regard to said resetting member on rotation of said winding stem.

2. In a chronograph, a flyback hand-return member, a pivoted resetting member engageable with and disengageable from said flyback hand-return member, a stop means for holding said resetting member in disengaged position with regard to said flyback hand-return member, a winding wheel, a click in engagement with said winding wheel, transmission gears connecting said winding stem with said winding wheel to rotate the latter on rotation of said winding stem, and control means coupled with said click and said stop means to move the latter out of holding position with regard to said resetting member on rotation of said winding stem.

3. In a chronograph, a flyback hand-return member, a pivoted spring-loaded resetting member engageable with and disengageable from said flyback hand-return member, a movable spring-loaded brake member in disengageable connection with said flyback hand-return member, a stop on said brake member engaging said resetting member to hold it in disengaged position with regard to said flyback-hand return member on said brake member being in braking position, a winding wheel, a click in engagement with said winding wheel, transmission gears connecting said winding stem with said winding wheel to rotate the latter on rotation of said winding stem, and a lever engaging said click and said stop to move the latter out of holding position with regard to said resetting member and said brake member out of braking position on rotation of said winding stem.

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