Dec. 9, 1941. H. JACOT GUYOT 2,265,906

CHRONOGRAPH WATCH MECHANISM

Filed Aug. 5, 1940 2 Sheets-Sheet 1

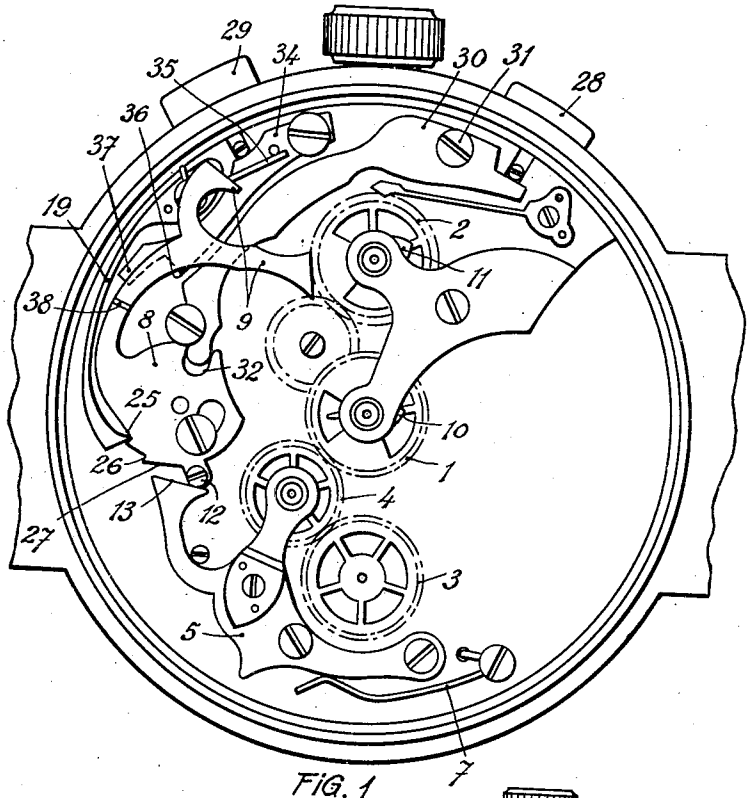


FIG. 1

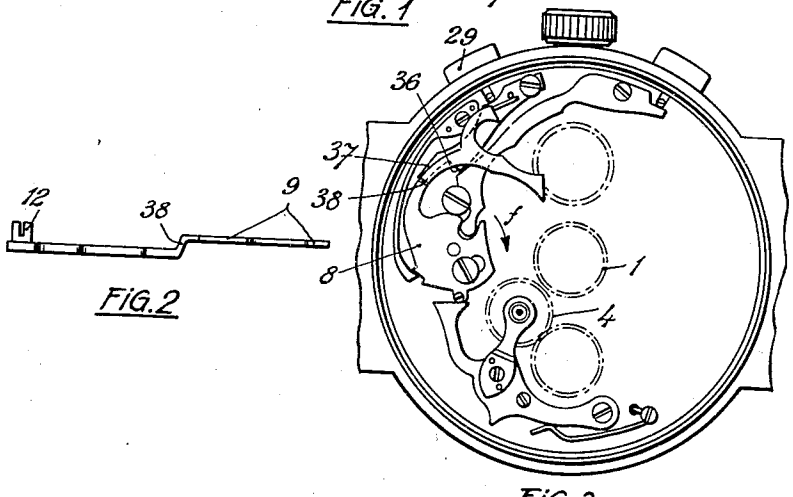


FIG. 2

FIG. 3

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2 Sheets-Sheet 2

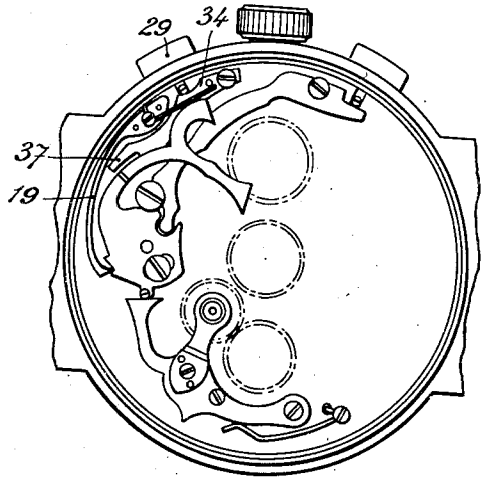


FIG. 4

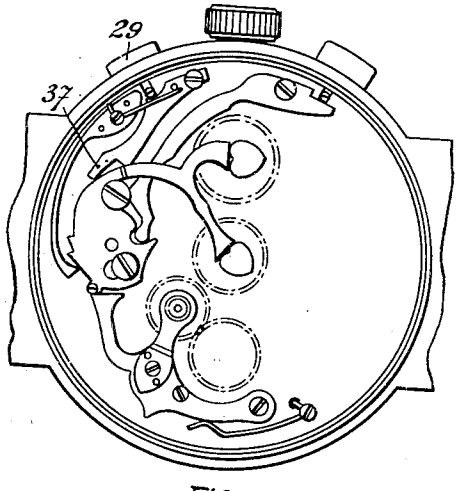


FIG. 5

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Patented Dec. 9, 1941 2,265,906

UNITED STATES PATENT OFFICE

2,265,906

CHRONOGRAPH WATCH MECHANISM

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Application August 5, 1940, Serial No. 351,492
In Switzerland September 26, 1939

1 Claim. (Cl. 58—76)

The present invention relates to chronograph watch mechanisms of the type comprising a driving wheel mounted on the axle of and above the ordinary seconds wheel, a spring pressed rocking lever carrying an intermediate wheel which is constantly in gear with said driving wheel and which for starting the chronograph is put into gear with a chronograph counter wheel carrying indicating means, and an alternatively turnable tappet adapted to control said rocking lever and forming a hammer for effecting the resetting to zero of the chronograph indicating means.

The object of the invention is to devise a chronograph mechanism of this type having improved operating and control means for setting the mechanism to work, for stopping said mechanism and for resetting the chronograph indicating means to zero.

More specially the invention comprises a main lever controlling the alternatively turnable tappet and hammer of the chronograph mechanism, a secondary lever presenting two projections cooperating, one with the main lever for turning the alternatively turnable tappet into the stop position, and the other with the hammer on said tappet so as to arrest said hammer in said stop position and to turn said tappet into the position for resetting the indicating means to zero, a first operating member adapted to operate said main lever for setting the chronograph mechanism to work, a second operating member adapted to operate said secondary lever for stopping the chronograph mechanism and for resetting the indicating means to zero, and spring means acting upon said secondary lever and tending to approach the same towards said second operating member.

The accompanying drawings illustrate, by way of example, one embodiment of the invention.

Fig. 1 is a plan view of the chronograph mechanism the members of said mechanism being shown in the position ready to start the operation;

Fig. 2 illustrates a detail;

Figs. 3 and 4 are plan views on a reduced scale showing the mechanism in its stop position;

Fig. 5 is a similar view showing the mechanism in its position for resetting the indicating means to zero.

In the drawings 1 represents the seconds counter wheel or center wheel of the chronograph mechanism, carrying the seconds hand in the center, and 2 is the minutes counter wheel carrying the minutes hand. 3 designates a driving wheel mounted on the axle of an above the ordinary seconds wheel of the watch movement. This driving wheel is constantly in gear with an intermediate wheel 4 carried by a rocking lever 5, and the latter is acted upon by a spring 7 tending to bring said intermediate wheel into gear with the center wheel 1. The numeral 8 designates an alternatively turnable tappet which forms also the double hammer 9 adapted to act on heart shaped cams 10 and 11 carried by the counter wheels 1 and 2, respectively, for resetting the counter hands on said wheels to zero. The tappet 8 is provided with a slot 32, with two notches 25, 26 followed by a cam surface 27 and with an excentric projection formed, as shown, by the head 12 of a screw and cooperating with a plane face 13 of the rocking lever 5. A spring pawl 19 cooperating with the notches 25, 26 and the cam surface 27 of the tappet maintains the latter in its different working positions.

A main lever 30 pivoted at 31 engages with a rounded end the slot 32 of the tappet. There is also provided a secondary lever 34 acted upon by a spring 35 and presenting two projections 36 and 37 cooperating the first with the main lever 30 and the second with the double hammer 9. Moreover, there are provided two pushers 28 and 29 for the operating of the tappet 8, the first of said pushers being arranged to act upon the main lever 30 while the second pusher is disposed to act upon the secondary lever 34. The double hammer 9 is cranked at 38 as best seen in Fig. 2.

To set the chronograph mechanism to work, the pusher 28 is pressed down to bring the tappet 8 by the intermediary of lever 30 into the position shown in Fig. 1. To stop the chronograph mechanism, the pusher 29 is pressed down a first time whereby the first projection 36 of the secondary lever 34 comes into contact with the main lever 30 and pushes the same inwardly so as to cause the tappet 8 to turn in the direction of the arrow *f* until the cranked portion 38 of the hammer 9 abuts the second projection 37 of the secondary lever. In that moment, all the members of the mechanism are stopped (see Fig. 3), but the tappet 8 has been displaced to an extent sufficient to lift the intermediate wheel 4 out of engagement with the center wheel 1. When the pusher 29 is now released, the secondary lever 34 acted upon by its spring is removed from the hammer 9 and the latter as well as the tappet 8 continue to turn for-

wardly owing to the action of the spring pawl 19 (see Fig. 4). When the pusher 29 is again pressed down, the projection 37 (see Fig. 5) assumes a position behind the hammer and pushes the same forwardly so as to bring said hammer and the tappet into the position for resetting the counter hands to zero.

From the foregoing, it is believed that the construction and advantages of the present invention may be readily understood by those skilled in the art without further description, it being borne in mind that numerous changes may be made in the details disclosed without departing from the spirit of the invention as set out in the following claim.

What is claimed and desired to be secured by Letters Patent is:

Chronograph mechanism, the combination, with a driving wheel mounted on the axle of and above the ordinary seconds wheel and at least a counter wheel provided with a heart cam and carrying a counter hand, of a spring pressed rocking lever carrying an intermediate wheel constantly in gear with said driving wheel and adapted to be brought into gear with said counter wheel, an alternatively turnable tappet having notches followed by a cam surface, said tappet being adapted to control said rocking lever and forming a hammer adapted to act upon said heart cam for effecting the resetting to zero of said counter hand, a spring pawl cooperating with said notches and cam surface for maintaining said tappet in determined positions, a main lever controlling said tappet, a secondary lever presenting two projections cooperating, one with the main lever for turning the tappet into the stop position, and the other with the hammer on the tappet so as to arrest said hammer in said stop position and to turn said tappet into the position for resetting the counter hand to zero, a first operating member adapted to operate said main lever for setting the chronograph mechanism to work, a second operating member adapted to operate said secondary lever for stopping the chronograph mechanism and for resetting the counter hand to zero, and spring means acting upon said secondary lever and tending to approach the same towards said second operating member.

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