

HOROLOGICAL MOVEMENT HAVING GUIDE MEANS
FOR A CONTROL MEMBER SUCH AS A SHAFT

The present invention relates to a horological movement having, on the one hand, horometric means formed by gear trains adapted to supply a time information and, on the other hand, of at least one control member, such as a shaft, adapted to act on these horometric means.

In particular the invention relates to a horological movement of the above-mentioned type provided with means designed to permit guidance of the shaft.

In conventional horological movements the control shaft is generally guided by means of its free extremity which is lodged in a guide orifice provided in a plate of the movement.

The guide orifice is formed by a lateral drilling provided directly in the plate.

This drilling is expensive to make since it requires several handling operations as well as machining work that is lengthy and necessarily very precise.

It is thus an object of the present invention to overcome the disadvantages of the prior art by providing a movement having shaft guide means which are easy to produce and of a very low cost.

It is thus an object of the invention to provide a horological movement having horometric means capable of supplying a time information and at least one control member adapted to act on these means, this control member being guided axially and/or in rotation by the intermediary of guide means, characterized in that said guide means are composed of three guide pieces mounted and maintained sandwiched on one another to form therebetween a seating in which said control member is freely received.

Other features and advantages of the invention will emerge from study of the following detailed description provided with reference to the appended drawings which are given solely by way of example, and in which :

- Figure 1 is a cross section of a horological movement of the invention shown in part herein, this view being taken along the line I-I of Figure 2; and

- Figure 2 is a top view taken along the arrow II of Figure I, but only showing one train bar and one center bar of the movement of the invention.

As shown in Figure 1, the movement of the invention which is indicated with the general reference M has a plate 1, a centre bar 2 and a train bar 4 which support horometric means H able to supply a time information, such as the hours, the minutes and in this example the second.

The horometric means H have a certain number of trains composed respectively of a motion-work 6, a seconds countershaft 8 and a dial-train wheel 10.

The motion-work 6 has an hours cylinder 12 carrying a wheel 14 meshing with the dial-train wheel 10 which is mounted directly on a post 16 provided on the plate 1.

The motion-work 6 also has a canon-pinion 18 which carries the hours cylinder 12 and which comprises, driven thereon on the one hand a minute pinion 20 meshing with the dial-train wheel 10 and, on the other hand, a minutes wheel 22 meshing with the seconds countershaft 8.

The canon-pinion 18 is moveably mounted in rotation on a fixed canon 24, the seating 26 of which is driven into the centre bar 2.

The centre bar 2 thus ensures the support of the hours cylinder 12 and of the canon-pinion 18 by means of the fixed canon 24.

The train 6 also comprises a seconds staff 28 which is also supported by the centre bar 2 by being rotatably lodged in the fixed canon 24.

The seconds staff 28 is in addition guided by the train bar 4 in which it is rotatably mounted.

The seconds staff 28 has, driven thereon, a seconds pinion 30 meshing with the seconds countershaft 8, and a drive wheel 32 engaged with the motor means of the movement M (not shown).

It will also be noted that the seconds countershaft 8 is guided by the train bar 4 and by the plate 1 between which it is freely mounted in rotation.

The movement M of the invention also has a hand-setting shaft 34 forming a control member adapted to act on horometric means H in conventional manner.

Also mounted on this shaft 34 in conventional manner is a sliding pinion 36 capable of meshing with the dial-train wheel 10 which serves here as the hand-setting countershaft. The shaft 34 is adapted to be able to move axially along a geometric axis A as well as in rotation about this axis. The invention is not limited to a control member of this type and can be applied to control members which only present either an axial displacement or a displacement in rotation.

The shaft 34 has a free extremity E which is guided by the plate 1, by the centre bar 2 and by the train bar 4.

As a matter of fact and as can be seen in Figure 2, the centre bar 2 which forms an intermediary part between the two other parts 1 and 4 has a opening groove 38 oriented along the geometric control axis A and in which the free extremity E is lodged and can travel.

This groove 38 ensures the lateral guidance of the free extremity E which is, in addition, confined on both sides by the train bar 4 and by the plate 1.

For this purpose the plate 1 and the train bar 4 have bosses 40 and 42 respectively which project into the groove 38.

It will be noted (Figure 2) that the centre bar 4 is composed of a dished part with three feet 44, 46 and 48 provided thereon.

The feet 44 and 46 rest directly on the centre bar 2 and are fixedly maintained thereon whereas the foot 48 rests directly on the plate 1 (not shown in Figure 2).

It will be noted that the boss 42 is provided on the foot 44, near the anchorage point 50 which ensures the attachment of the train bar 4 to the centre bar 2.

The bosses 40 and 42 are provided near the edges of the train bar 4 and of the plate 1 respectively.

It will thus be understood that the free extremity E of the shaft 34 is lodged and retained between the train bar 4 and the plate 1, but also in the centre bar 2 which is sandwich mounted between the train bar 4 and the plate 1.

So the train bar 4, the centre bar 2 and the plate 1 form three guide parts mounted and sandwiched against each other to form a seating therebetween in which the control member 34, and more particularly its free extremity E, is freely received.

More precisely, by virtue of their function as bar or plate, these three guide parts 1, 2 and 4 also form supports for the rotation of at least one train 6, 8 or 10 belonging to the horometric means H.

It will thus be understood that guide means of the control member 34 have been created which are of low cost and which require no precise machining of the material or any additional handling operation.

CLAIMS

1. Horological movement having horometric means (H) capable of supplying a time information and at least one control member (34) adapted to act on these means (H), this control member (34) being guided axially and/or in rotation by the intermediary of guide means, characterized in that said guide means are composed of three guide pieces (38, 40, 42) mounted and maintained sandwiched on one another to form therebetween a seating in which said control member (34) is freely received.

2. Movement according to Claim 1, characterized in that the three guide parts also form supports for the rotation of at least one train (6, 8, 10) belonging to the horometric means (H).

3. Movement according to Claim 1 or 2, characterized in that one (2) of the three guide parts which form an intermediary part mounted between the two others (1, 4) has a opening groove (38) which is oriented along the axis (A) of the control member (34) and which guides this member laterally.

4. Movement according to Claim 3, characterized in that said intermediary part (2) is composed of a centre bar which ensures the support of a motion-work (6).

5. Movement according to any of the preceding claims, characterized in that the three guide parts are composed respectively of a train bar (4), a plate (1) and a centre bar (2) which is sandwiched between the train bar and the plate.

6. Movement according to Claims 3 and 5, characterized in that the plate (1) and the train bar (4) have respectively bosses (40, 42) which penetrate the groove (38) of the centre bar (2).

