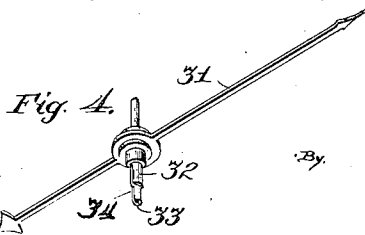
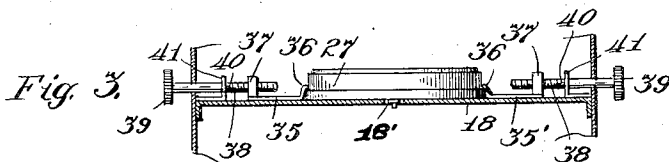
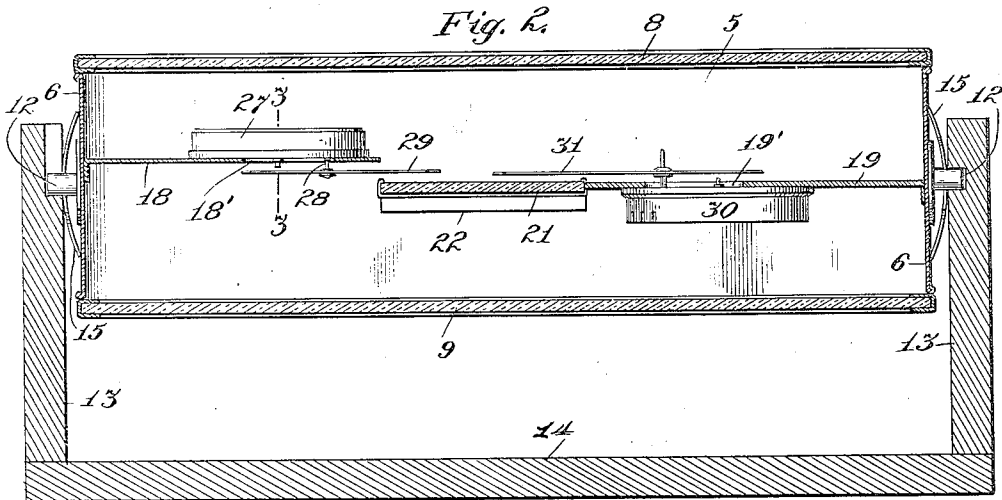
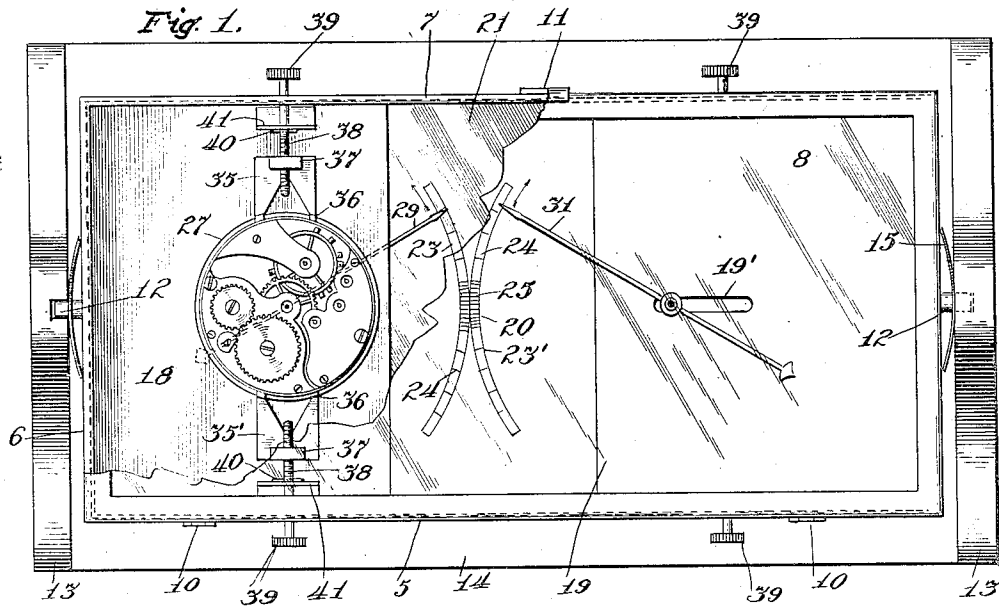


P. SCHOLL.
 DEVICE TO FACILITATE THE REGULATION OF WATCHES.
 APPLICATION FILED DEC. 7, 1911.

1,042,609.

Patented Oct. 29, 1912.



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UNITED STATES PATENT OFFICE.

PETER SCHOLL, OF CHICAGO, ILLINOIS.

DEVICE TO FACILITATE THE REGULATION OF WATCHES.

1,042,609.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed December 7, 1911. Serial No. 664,391.

To all whom it may concern:

Be it known that I, PETER SCHOLL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Devices to Facilitate the Regulation of Watches, of which the following is a specification.

My invention consists in a device to facilitate the regulation of watches, and provides a simple efficient device for that purpose available to jewelers and repair men.

Ordinarily when a watch is undergoing regulation it is compared, at relatively infrequent intervals, with the time indication of some standard time piece, and an experimental change of adjustment is made in accordance with the result of each such comparison. Such comparison, involving the travel of the eye from one time piece to the other, makes almost unavoidable a slight error in the comparison, and therefore requires that the time-lapse on which the comparison is founded shall be so great that such error is substantially negligible. Therefore, a great amount of time is necessarily consumed in the intervals between adjustments. In fact it is the common practice of jewelers to make trial adjustments of all of the watches being regulated once a day only, so that proper regulation of a watch often involves a matter of weeks of experimentation, and the inherent difficulty of making an accurate comparison between the indication given by the small hands of a watch and an independent time piece, makes truly accurate adjustment very difficult to say the least. Furthermore, the customary adjustment is made for one position only, whereas good practice demands that the regulation be proper for several positions.

To the best of my knowledge no simple, convenient apparatus has heretofore been available to jewelers for facilitating regulation, so that accurate results may be attained in comparatively a few minutes' time. The apparatus of my invention supplies such needs and furthermore it provides a simple and convenient structure for testing the regulation with the time piece held in various positions,—a matter of importance in regulation which is rarely taken into account except in the factory regulation of high priced watches.

In the drawing, wherein I have shown an embodiment of my invention, in simple,

convenient, and cheap form, Figure 1 is a plan view; Fig. 2 is a central vertical section; Fig. 3 is a fragmentary vertical cross section; and Fig. 4 is a detail of an exaggerated hand.

5 indicates in general a casing or carrier, which may conveniently be made of oblong rectangular shape having end walls 6 and side walls 7, with metal-bound glass covers 8 and 9 for the top and bottom, each hinged along one edge, as at 10, and provided with a catch 11 at its opposite edge for holding it in closed position. Such casing may be made substantially dust-proof. The casing is preferably provided at its end with axially alining gudgeons 12—12 mounted in bearing standards 13 secured to a common base 14, so that the casing may be completely rotated in the stationary frame, spring washers 15 being interposed between each casing end and the contiguous post 13 to frictionally hold the casing in any desired position of rotary adjustment. For convenience of description, however, I shall refer to directions with the carrier assumed to be in the position shown in the drawing.

At opposite ends of the carrier or casing there are arranged, internally, watch receiving platforms 18 and 19, preferably extending from side wall to side wall adjacent the axial horizontal plane of the casing, said platforms being longitudinally separated and in different horizontal planes, so that between the planes of the two plates there may be a free plane for unobstructed operation of the indicating hands to be described. Longitudinally between the two plates is arranged a gage-plate or dial plate 21 preferably of ground glass extending transversely of the casing from side to side thereof and secured to the side wall as by suitable clips 22 soldered or otherwise fastened to the wall. Upon the dial plate 21 I arrange a suitable dial marking preferably in the form of two tangential arcs 23—23' having marked radial divisions 24, spaced six degrees apart, and with the divisions adjacent to the point of tangency of the arcs sub-divided as at 25 into fractional divisions of any desired minuteness.

In the platforms 18 and 19 there are formed longitudinal slots 18' and 19' traversing, in longitudinal alinement with each other, the respective centers on which the arcs of the dial are struck. Upon one of the platforms, say platform 18, there is mount-

ed a standard watch movement 27 to which comparison is to be made, said movement having a second-hand-arbor 28 projecting through the slot 18' and provided with an "exaggerator" or long hand 29 arranged to sweep over the dial 23 with its point in proximity to one of the dial arcs 23.

The watch movement to be regulated, detached from the watch case, is mounted oppositely on the platform 19 so that the two watches are face to face, one above and the other below its platform, and to the second arbor is connected a long hand or exaggerator 31, of appropriate length to sweep over the other dial arc 23'. The opposite or face-to-face mounting of the two watch movements 27 and 30 at the opposite ends of the carrier disposes their respective hands 29 and 31, (each assumed to be moving in the usual clock-wise direction) to sweep over their respective dial arcs in the same direction of lateral traverse across the dial. It is for this reason that the platforms 18 and 19 are preferably arranged out of horizontal alinement with each other and at opposite ends of the carrier, although if the special standard motor were provided in which the hand rotated anti-clockwise, such arrangement would be unnecessary. The provision of the glass dial plate is intended to facilitate reading the same and to permit inspection of the position of the hands 29 and 31 from either the top or bottom of the receptacle. If reading from the bottom of the receptacle is not deemed necessary, a suitable dial-marked extension of the platform 19 would serve in lieu of the glass plate 21.

Any suitable means for securing the two watch movements respectively to their platforms may be employed, the arrangement which I have shown and prefer contemplating the provision in appropriate relation to each platform of a clamp structure consisting of two opposed jaw members 35 and 35' slidable on the platform, each jaw having upturned holding points 36 and an upturned lug 37, screw threaded for engagement with an adjusting screw 38 having a handle 39 projecting through the side of the casing, and provided with a transverse pin 40, exerting its trust against a bearing bracket 41 secured upon the platform. By suitable adjustment of the pair of clamps, the movement of a watch of any ordinary size may be clamped with its second arbor alining with the slot in the platform and so positioned that its exaggerator hand may coact with the dial. The hands provided for attachment to each such second arbor of the watch movement should be long, light, and balanced, and each may have a stem of the construction shown in Fig. 4, wherein the hand proper of the exaggerator 31 is mounted upon a stem 32 centrally bored as at 33 and transversely slotted as at 34 to interfit

with any size of second-hand arbor and to retain itself by a frictional clamp in action on the arbor.

The standard movement may, of course, be left in place whether in use or not, as the closed casing gives it effective protection. The watch movement to be tested is secured in place in the platform 19 by the operation of the adjustable clamping mechanism, and the long hand, or exaggerator, 31 is applied to its second arbor. In making a regulation-test, the two hands are adjusted to start in unison from position of alinement centrally of the dial until the other hand catches up to it. Both hands start off in the direction indicated by the arrows in Fig. 1, and each makes a circuit in approximately a minute. Where a watch to be tested is badly out of time the hands will be perceptibly out of alinement at the completion of their first circuit. Even a very slight variation from proper regulation in the watch undergoing test will show at the expiration of two or three revolutions of the second hand arbor, as a difference of a small fraction of a second is plainly to be seen owing to the great exaggeration of the dial. When the watch undergoing test has been so preliminarily regulated that the hands will rotate in unison for several minutes, the watch may yet be subjected to further tests with the carrier turned upside down and at different angles, to determine the effect of position upon the regulation.

It will be noted that in effecting the reading, the eye is not compelled to jump from one position to another involving an inevitable consequent corrigium, of greater or less degree, only to be guessed at, but attention may be concentrated upon the median line of the dial markings, and the matter of relative displacement of the exaggerators is easily determinable as they pass such point in like direction and at nearly uniform speed. The fact that the hands travel in the same general direction, rather than meeting and passing each other, greatly assists in the accuracy of the observation. In general it will be apparent that by the facilities described accurate regulation may be accomplished in a very brief time, and with minimum effort.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. In an appliance for facilitating watch regulation, the combination of means of support, a standard watch movement and a watch movement to be tested supported thereby, exaggerator hands associated with the second arbors of said respective movements and a dial having suitable markings to cooperate with both said hands in common.

2. Means for effecting regulation compari-

sons between a standard watch movement and a watch movement to be tested, comprising a frame, a carrier mounted in said frame for relative adjustment, a standard watch movement and a watch movement to be tested mounted in said carrier, exaggerator hands associated with the second arbors of the two watch movements, a suitable graduated dial, and means for positioning the two watch movements in the carrier with their exaggerator hands in operative association with the common dial.

3. In a device of the character described, the combination of a suitably graduated dial, a standard watch movement and a watch movement to be tested, means for supporting said two watch movements in reversed relation to each other at opposite ends of the dial, and exaggerator hands associated with the second-hand arbors of said two watch movements, whereby said exaggerator hands may sweep over the common dial in like direction of travel with respect to the dial.

4. In a device of the character described, a casing, platforms at opposite ends of said casing in non-alining planes, two watch movements, means to secure said two watch movements on said respective platforms in reverse relation to each other for presentation of their second arbors to the space between the planes of said platforms, exaggerator hands associated respectively with

the second arbors of said watch movements, and a suitably marked dial longitudinally between said platforms over which said hands move in common in the same direction with reference to the dial.

5. In a device of the character described, the combination of a frame, a casing pivoted for rotative adjustment to different positions in the frame, slotted platforms in opposite ends of said casing, two watch movements, clamping means on said platforms to hold said two watch movements respectively thereon with their second arbors alining with the slots in said platforms, exaggerator hands associated with the second arbors of the two movements, and a common dial for said hands.

6. In a device of the character described, the combination of two watch movements, long exaggerator hands associated with rotating arbors of said two watch movements, a large dial providing finely divided arc portion, and means to secure said watch movements in relation to the dial to cause the exaggerator hands of both watch movements to traverse the dial in one direction.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

PETER SCHOLL.

In the presence of—
MARY F. ALLEN,
W. LINN ALLEN.