May 24, 1932. A. H. NEUREUTHER 1,860,153

MICROMETER ADJUSTING DEVICE FOR CLOCKS AND SIMILAR MECHANISMS

Filed April 6, 1929

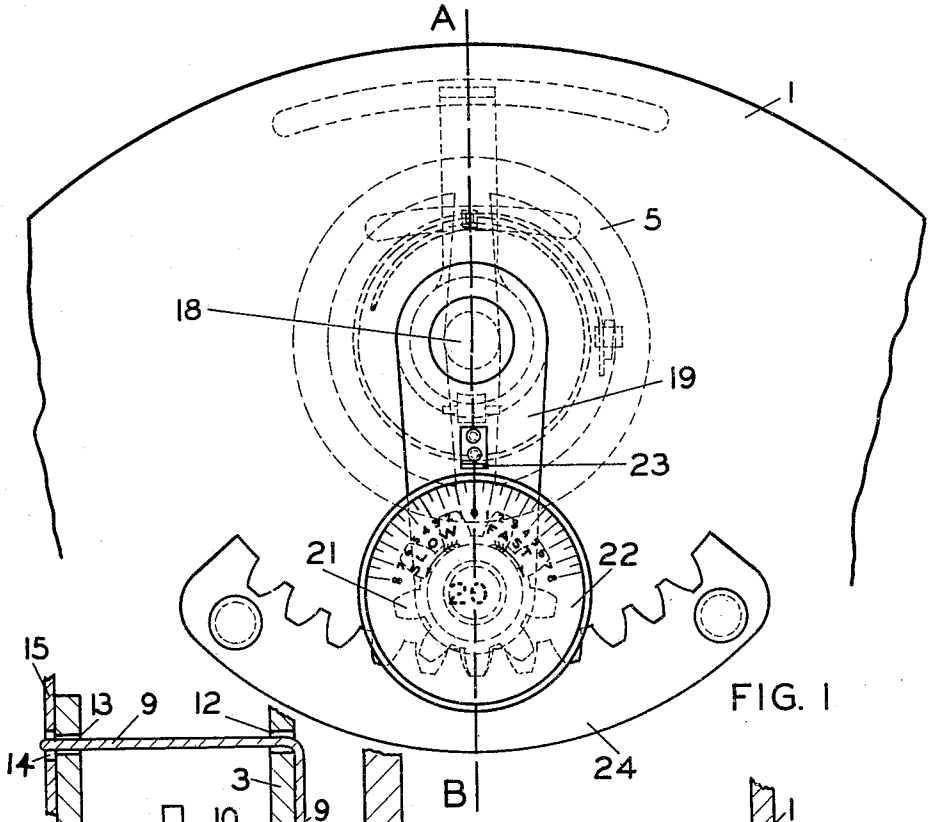


FIG. 1

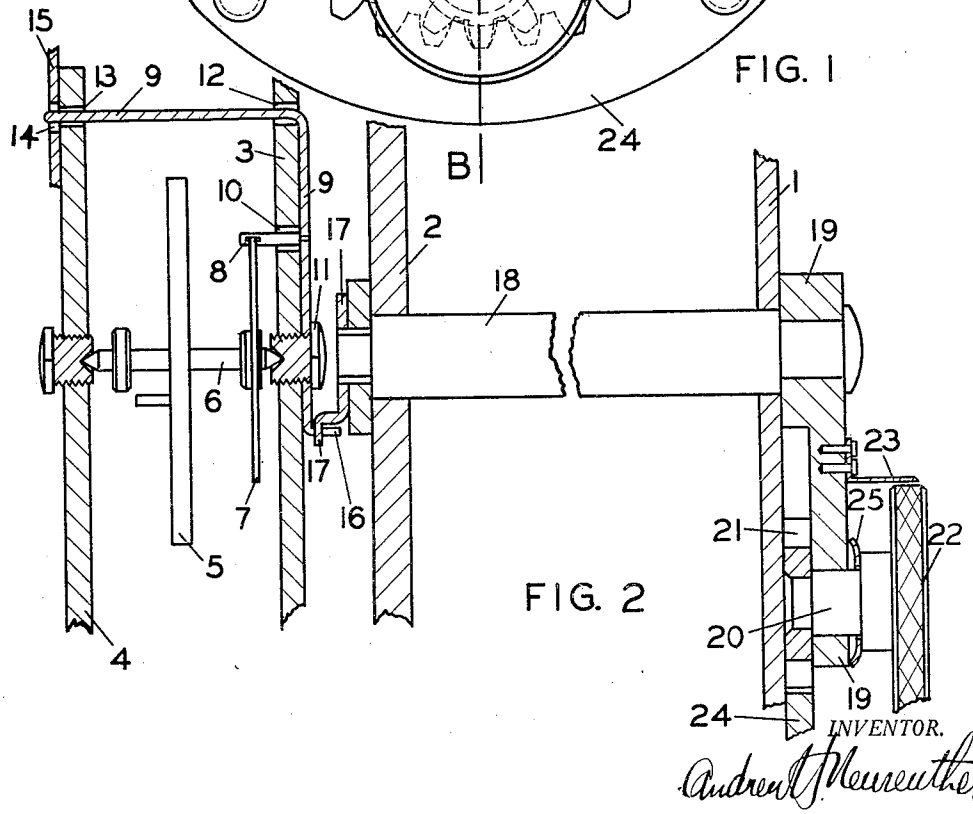


FIG. 2

INVENTOR.

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UNITED STATES PATENT OFFICE

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MICROMETER ADJUSTING DEVICE FOR CLOCKS AND SIMILAR MECHANISMS

Application filed April 6, 1929. Serial No. 352,993.

My invention relates to micrometer adjusting devices for clocks and similar mechanisms and has for its object the production of a simple and efficient means whereby a predetermined and extremely small amount of movement can be imparted to a clock regulator or a similar mechanism from a comparatively large movement initiated by the fingers of the operator.

It is a well known fact that when one tries to move the end of the ordinary regulator lever of a marine clock the small amount that may be necessary, for instance to make the clock go faster and keep time more accurately, one finds it very difficult to move the lever the small amount required, and generally moves the lever end more than is necessary and then finds, after several days, that the clock is running too fast and is ahead of the correct time. One then again moves the end of the lever in the opposite direction and again finds that he has moved it too far and the clock is again running too slow. With my invention one can move the external initially rotating regulating means a perceptably large amount which movement will produce a correspondingly similarly, but materially smaller movement on the internal mechanism to be adjusted.

I accomplish the above results by the means shown in the accompanying drawings in which:

Fig. 1 is a front view of my micrometer adjusting device.

Fig. 2 is a cross-sectional view of same along a line AB of Fig. 1.

Similar numerals represent the same part throughout the several views.

In the drawings 1 represents the back of the usual clock case or the rear plate of a frame for retaining a power mechanism not shown for driving a clock movement, said rear plate forming the back or exposed part of a suitable casing not shown. 2 is one of the intermediate plates that with plate 1 assists in retaining said power mechanism. 3 and 4 represent the rear and front plates of a clock movement in which is mounted the usual balance wheel 5 having a shaft 6 and a hair spring 7 mounted on said shaft in the usual manner. 8 is the usual regulator loop associated with the hair spring 7 which regulator loop passes through the aperture 10 in plate 3 where it is fastened to the lever 9. Said lever 9 is pivotally mounted on the screw 11 and is farther bent as shown and passes through the elongated apertures 12, 13 and 14 in plates 3 and 4 and dial plate 15 respectively. Lever 9 has a part projecting below the pivotal screw 11 which has a slot 16 as shown.

Slot 16 engages the end of a lever 17 which is fastened to the left hand end of a shaft 18 which shaft passes through an aperture in each of the plates 2 and 1 as shown. Fastened on the right hand end of the shaft 18 adjacent to plate 1 is a lever 19 which has an aperture in its lower end into which is rotatably fitted an arbor 20 which has a gear 21 fastened on its inner (left hand) shouldered end between lever 19 and plate 1 and a large knurled thumb nut 22 on the outer right hand side of lever 19. The large thumb nut 22 has the indicator marks shown and a pointer 23 assists the operator in indicating the amount of motion given. A rack or internal gear segment 24 mounted on plate 1 or in the back of the clock case which meshes with the small gear 21 causes the lever 19 to move when the knurled thumb nut 22 is rotated by the thumb and fingers and a suitable spring washer 25 locked between the shouldered end of said nut 22 and lever 19 on arbor 20 supplies the necessary resistance against easy rotation.

It is evident that by making the gear 21 very small and the knurled thumb nut 22 comparatively large that a large amount of motion on the thumb nut will produce only a small amount of motion of the end of lever 19 and that said motion will be transmitted to the regulator loop and that very small amounts of motion can readily be transmitted by means of the thumb nut 22.

It is evident that the slot 16 and its associated connecting part 17 can be just as conveniently located above the pivoting screw 11 as the position in which it is shown in the drawings.

It will be understood, of course, that while

I have here shown one form of my device I do not wish to be limited to exact construction shown but desire to have it taken in a sense illustrative of any or all the forms of same that come fairly within the scope of my claim.

I claim:

In a micrometer adjusting device of the type that is used in regulating the operative length of the hair spring of a clock, said clock having a casing, a frame in the casing and a regulator loop member for said hair spring, in combination, a shaft journaled in the casing and frame of said clock, a slot and pin device connecting said shaft to the regulator loop member of said hairspring, a lever fastened to the other end of said shaft external to the clock casing, a knurled actuating arbor having index markings and a smaller shouldered end journaled in said lever, a pinion fastened on the smaller shouldered end of said arbor, a resilient cupped washer mounted on said arbor between the knurled part of said arbor and said lever for frictionally positioning said arbor, an indicating pointer mounted on said lever adjacent to the markings on said arbor and a stationary rack externally mounted on said clock casing engaging the pinion on said arbor.

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