June 16, 1936. H. A. DUNLAP 2,044,752

FLOATING WATCH MOVEMENT

Filed Feb. 27, 1936

FIG. 1

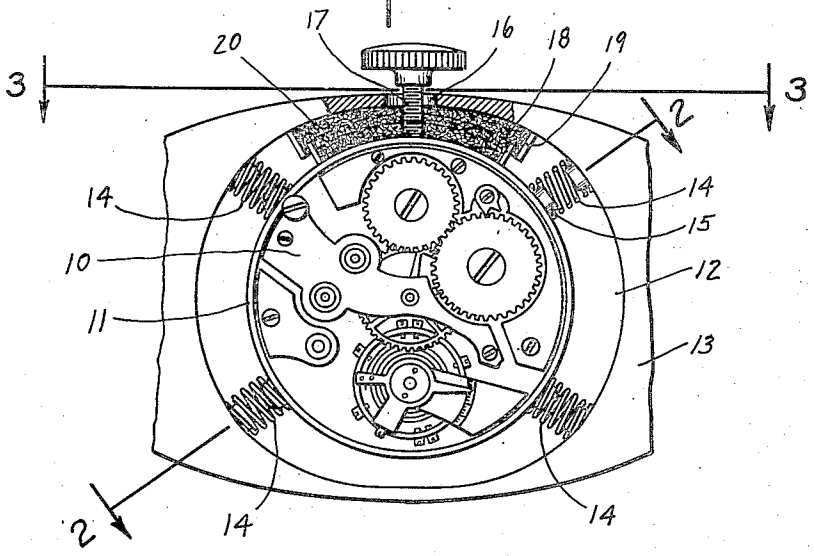


FIG. 2

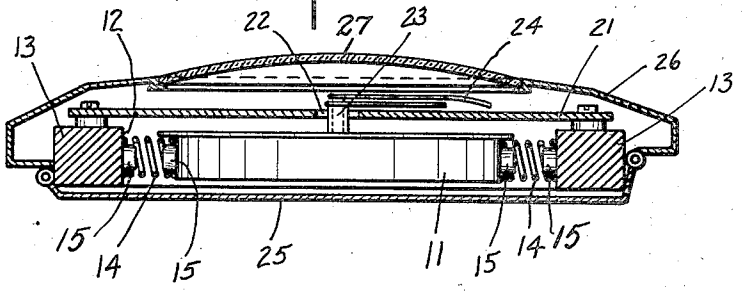
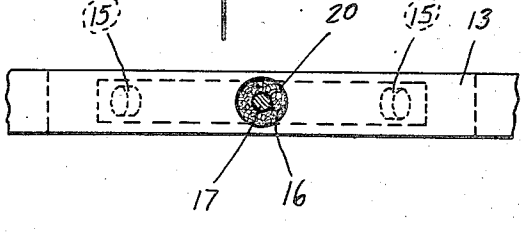


FIG. 3



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Patented June 16, 1936 2,044,752

UNITED STATES PATENT OFFICE

2,044,752

FLOATING WATCH MOVEMENT

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Application February 27, 1936, Serial No. 65,967

3 Claims. (Cl. 58—88)

This invention relates to a floating watch movement and which is particularly applicable to wrist watches and the like, although useful in connection with pocket watches and clocks of the character having a movement operated and controlled by a main spring.

It is the purpose of the invention to provide a simple and practical means of suspending the entire movement of the watch of a hair spring type within a casing in such manner that it floats therein and accordingly will be protected from sudden jars or concussions, such as striking upon an object or falling to the floor. It is recognized in this respect that heretofore containers have been provided for containing an entire watch, including its casing, within a protective cover and resiliently supporting it therein, and wherein other instruments or devices have been resiliently mounted to protect them against vibration. However, this invention distinguishes therefrom in that the hair spring operated movement of the watch, which, in the case of a wrist watch is quite small, is supported in its regular casing in spaced relation thereto and free from contact excepting its intermediate resilient supports.

Another feature of the invention resides in the arrangement of the winding stem which, being permanent and rigidly connected with the movement, extends through the casing in spaced relation thereto and is held in centered and spaced relation by the resilient supports of the movement. Also in some cases, it may be desirable to project the shaft supporting the hands through an enlarged opening in the dial so that it will have free movement relative thereto. In respect to the winding stem, it is recognized that the enlarged aperture in the casing through which it extends will permit dust and moisture to readily pass therethrough, and to that end provision is made for a resilient packing material, such as will permit freedom of movement while preventing passage therethrough of dust and moisture.

The full nature of the invention will be understood from the accompanying drawing and the following description and claims:

Fig. 1 is a rear elevation of a watch movement mounted within its support. Fig. 2 is a section taken on the line 2—2 of Fig. 1 with the movement in elevation and enclosed within a casing. Fig. 3 is a section taken on the line 3—3 of Fig. 1.

In the drawing there is illustrated a watch movement 10 of the main spring type, surrounded by a circular band 11. The movement is supported within an annular opening 12 in the supporting body 13 of the watch.

As illustrated herein the movement is spaced from the body 13 and is substantially concentric with the opening 12. It is supported in such concentric and spaced relation through the medium of a plurality of springs 14 spaced about its periphery and extending between the band 11 and the inner wall of the body 13. Said springs are anchored in position by means of the lugs or pins 15 secured to the band 11 and the wall of the body 13, the respective lugs being in alignment so that the opposite ends of the springs 14 seat thereabout.

The upper portion of the body 13 is provided with an opening 16 through which the winding stem 17 extends from the movement. The opening 16 is enlarged to substantially greater diameter than the stem so as to permit free lateral movement of the stem which is maintained in spaced relation by the supporting springs 14.

In order that the movement be protected from dust and moisture passing through the enlarged opening 16, there is provided thereon an upstanding receptacle or guard 18 telescoping within a downwardly-extending corresponding receptacle or guard 19, said guards being spaced from each other to permit relative movement therebetween and filled with a resilient packing material 20, such as sponge rubber, loose wool or the like.

As illustrated in Fig. 2, the dial 21 is mounted on the body 13 in spaced relation to the movement and has an enlarged central aperture 22 through which the shafts 23 extends for supporting the hands 24, whereby substantial relative movement is permitted between the shafts and the dial.

Enclosing the entire assembly there is a casing secured to the body 13, as illustrated in Fig. 2, comprising the back side 25, the front rim 26, and the crystal 27, all of which are substantially spaced laterally from the watch movement.

With the above construction, any sudden jar or concussion applied to the casing or crystal 25, 26 or 27, will be directly transmitted to the body 13 but absorbed by the springs 14 and, therefore, not transmitted to the floating movement 10. Inasmuch as such jar or concussion will cause a flexing of the springs and relative movement between the casing and body, on the one hand, and the clock movement, on the other hand, such relative movement will be permitted as between the stem 17 and the body, on the one

hand, and between the shafts 23 and the dial 21, on the other hand.

Whereas the invention has been herein shown and described as pertaining to the usual wrist watch, but enlarged for convenience, it is equally applicable to a pocket watch or a main spring actuated clock, such as the usual alarm clock and the like.

The invention claimed is:

1. A timepiece having a supporting body having an aperture therein, a main spring actuated movement positioned within said body, means for resiliently supporting said movement in spaced relation to said body to permit it to have relative movement with respect thereto, a winding stem freely extending through said aperture to permit relative movement between the stem and body, a dial having an opening therein secured to said body and spaced from said movement, a shaft for driving the timepiece hands freely extending through said opening in the dial to permit relative movement therebetween, and casing secured to and enclosing said body but spaced from said movement whereby shocks or sudden jars will be substantially absorbed by said means.

2. A timepiece having a supporting body having an aperture therein, a main spring actuated movement positioned within said body, means for resiliently supporting said movement in spaced relation to said body to permit relative movement therebetween, a winding stem extending from said movement through said aperture and spaced from said body, resilient packing material positioned between said body and movement adjacent to and surrounding said stem, cooperative means associated with said movement and body adjacent said stem for retaining the packing material in position to prevent passage of moisture or dust through said aperture, and a casing secured to and enclosing said body but spaced from said movement whereby relative movement is permitted between the casing and body and said stem and movement.

3. A timepiece having a supporting body provided with a radial aperture and an annular opening therein, a main spring actuated movement concentrically positioned within said opening and spaced from the inner wall thereof, shafts driven by said movement, hands on said shafts, a plurality of radially disposed coil springs for supporting the movement within said body, radially aligned pins on said body and movement for anchoring the ends of said coil springs, a winding stem extending from said movement through said aperture and spaced from said body, resilient packing material positioned between said body and movement and surrounding said stem to prevent moisture and dust entering through said aperture, a dial secured to said body and having an enlarged aperture through which the shafts freely extend from said movement, and a casing secured to and surrounding said body but spaced from said movement whereby said movement, winding stem and hands will be flexibly mounted within said body and casing to permit relative movement therebetween.

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