

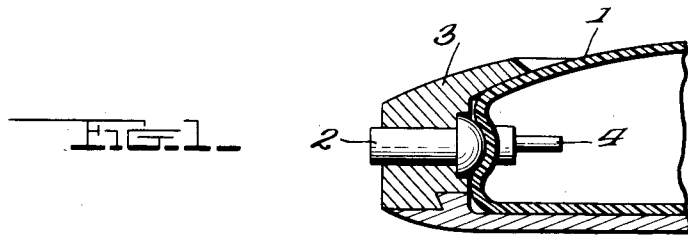
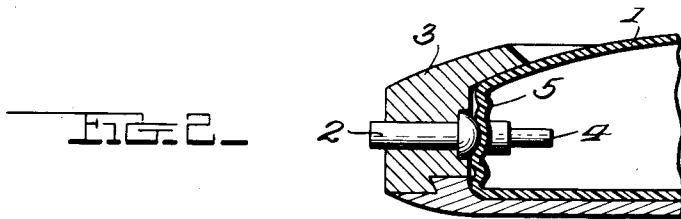
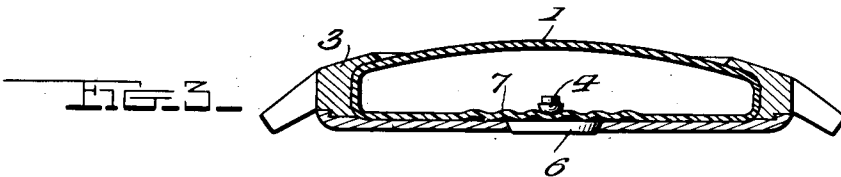
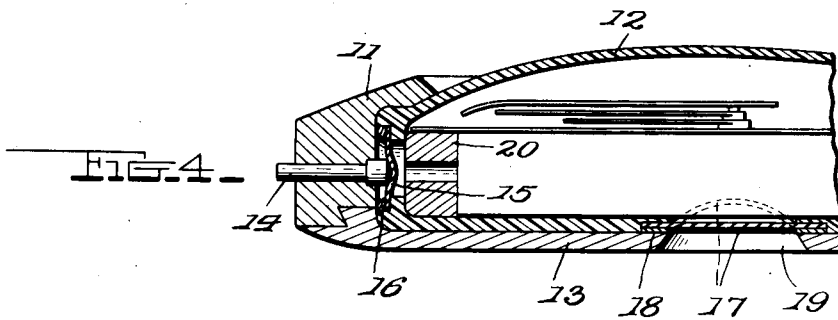
Jan. 15, 1952

S. M. KUDELSKI

2,582,706

WATCH

Filed June 20, 1950



INVENTOR.
S. M. Kudelski
BY
Mason, Porter, Wilke & Skumiel
attys.

UNITED STATES PATENT OFFICE

2,582,706

WATCH

Stefan M. Kudelski, Geneva, Switzerland

Application June 20, 1950, Serial No. 169,229
In Switzerland June 23, 1949

4 Claims. (Cl. 58—90)

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The present invention relates to a time piece, preferably to an automatically wound watch enclosed in a sac made of plastic material entirely closed and sealed and filled with a neutral gas. The sac is itself enclosed in an ordinary watch-case.

One of the objects of the invention is to allow regulation of the running of the watch-movement by operating the adjusting lever from the outside, by deforming a part of the sac.

A further object of the invention is to allow the setting of the watch also by deforming the casing surrounding the movement, by means of plungers, preferably two lateral ones. A further object of the invention is to enclose the watch-movement in a sealed sac which can be resiliently deformed.

A still further object of the invention is to provide a watch with a sac intended to contain the movement and at least a part of which is resilient and of a smaller thickness in order to make easier the deformation of this part only.

A further object of the invention is to use a sac made of transparent and plastic material, the portions of which are fastened together electrically by means of a high-frequency current. The various portions of the sac may also be sealed by means of polymerizable adhesive. If the watch has to be put in repair or regulated, it will be easy for the man skilled in the art to cut the sac and to replace it by another according to one of the processes mentioned.

The technical advantages due to the invention are the following:

(1) The watch is completely impervious to dust, liquids and even for gas. It can be exposed to all climates.

(2) The imperviousness of the sac with regard to gas makes it possible to fill with a neutral gas which does not attack either the parts of the watch-movement, or the oil, thus preserving the viscosity of the latter and its lubricity.

(3) The thermal insulating property of the plastic materials makes it possible to regulate the temperature inside the sac even if it varies suddenly outside.

(4) The possibility of regulating the running of the watch without having to open the sac, solely by deforming it, constitutes an important advance with respect to known sealed watches, the frequent opening and the closing of which reduce the seal.

The fact that the watch does not include a winding stem is not a drawback since automatic winding movements are now common.

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The annexed drawing shows diagrammatically and by way of example the preferred embodiments of the invention.

Figure 1 is an axial section of a part of a time piece showing my improved device.

Figure 2 is an axial section of a part of a modified form.

Figure 3 is an axial section of a second embodiment and,

Figure 4 is an axial section of a part of a modification.

In Figure 1, a tight sac 1 made of thermoplastic material has been welded or sealed in such a way that it is completely impervious to air. This sac is resiliently deformable by means of an outside plunger 2 guided in a rigid case-rim 3, the pressure thus applied being transmitted to an inside element 4 such as a plunger, a spring, a lever or the like, which operates the setting, the winding or the regulating mechanism of the movement, not shown.

It is evident that only the members which are necessary for the understanding of the invention have been shown and described.

In Figure 2, the sac 1 has been provided with corrugations which increase the surface deformed by the plunger 2, which makes possible an easier deformation of the sac.

In Figure 3, the plunger 2 has been replaced by a washer 6 in contact with the corrugated bottom of the sac designated by 7.

Figure 4 shows an automatically wound watch. In this figure, the sac designated by 12 comprises two resiliently deformable parts, viz. one part 15 situated laterally and one part 17 situated in the bottom of the sac. These parts are sealed to the sac by means of an adhesive 16 and 18 respectively such as a polymerizable material; each of these parts is a diaphragm of smaller thickness than the walls of the sac. Part 15 is deformed by a plunger slidably mounted in the case rim 11. This part 15 is intended to operate a plunger not shown, slidably mounted in an annular part 20 of the movement, for the setting of the watch. The part 17 is adapted to be deformed by a pressure directly applied on it through an aperture 19 provided in the bottom 13 of the watch case. This part 17 makes it possible to displace the lever for regulating the watch.

What I claim is:

1. In a watch, having a movement and control members for operating said movement, a resiliently deformable, sealed sac enclosing said movement and said control members, in a neutral gas, said sac being deformable opposite the control members for operation of the latter.

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2. In a watch, having a movement and control members for operating said movement, a resiliently deformable sealing sac enclosing said movement and said control members, said sac being deformable opposite the control members for operation of the latter, a watch case surrounding said sac and operating devices mounted in the watch case for actuating the control members from the outside of the watch case when the sac is depressed.

3. In a watch, having a movement and control members for operating said movement, a partly rigid and partly resiliently deformable sealed sac enclosing said movement and said control members, said sac being corrugated and deformable opposite said control members for operation of the latter from the outside of the sac.

4. In a watch having a movement and control members for operating the movement, a resiliently deformable sealed sac enclosing said

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movement and said control members, a watch case surrounding said sac, and a plunger mounted in the watch case for actuating the control members from outside the case, when the sac is depressed by the plunger.

STEFAN M. KUDELSKI.

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