March 11, 1969 P. HAAS 3,431,722

TIMEPIECE CASE

Filed July 27, 1967

FIG. 1

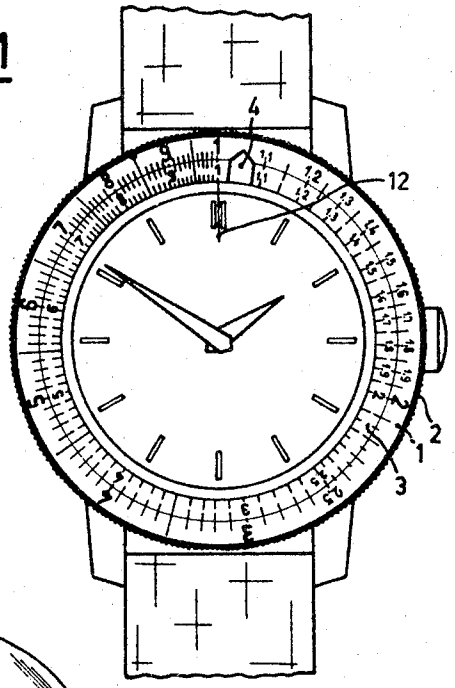
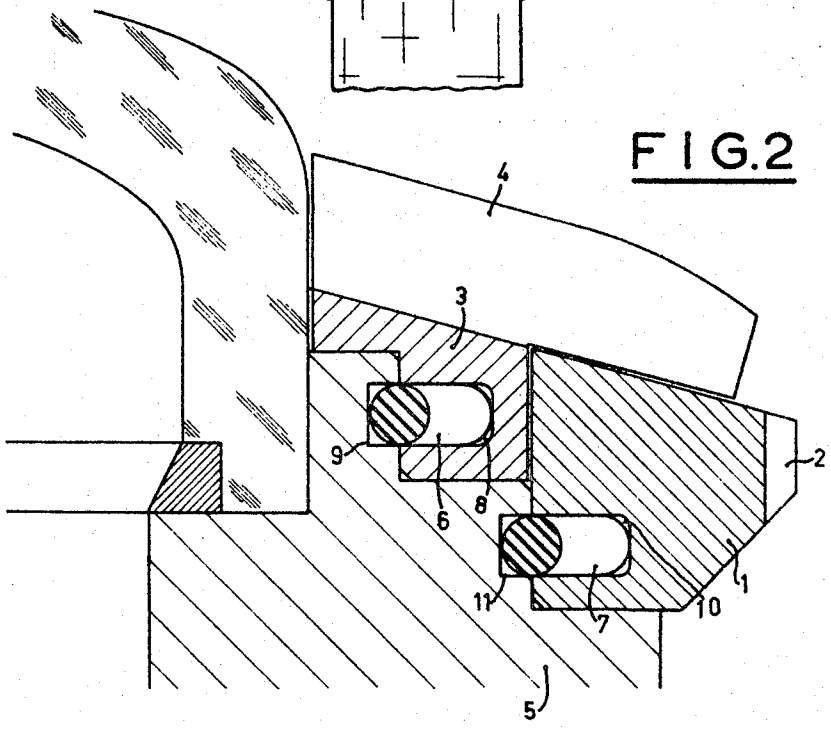


FIG. 2



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TIMEPIECE CASE

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ABSTRACT OF THE DISCLOSURE

Timepiece case having outside its crystal two concentric graduated bezels rotatably mounted on the case by means of a spring housed in two annular grooves, one made in the bezel the other made in the case in such a way that the two bezels can turn independently one of the other for the purpose of making slide rule calculations and wherein one of the annular grooves of the case cooperating with the outer bezel is disposed at least partially under the inner bezel.

It has already been suggested to provide a timepiece case with two bezel at least one of which is movable, these bezels bearing graduations making possible to use them either as counters in relation with the indicia on the dial or as independent slide rules. In this latter application, it is necessary that the two bezels turn independently one from the other. In a construction fulfilling this requirement, the two bezels are frictionally set in grooves made in the upper surface of the case. In another construction, the frictional fit is ensured by a polygonal spring, the outer bezel being mounted not on the case but on the first bezel, in such a way that if it is desired to turn the inner bezel alone, it is necessary to hold the outer bezel.

The present invention has for its object a timepiece case comprising outside the timepiece glass or crystal two graduated concentric bezels rotatably mounted on the case by means of a spring housed in two annular grooves made in the bezel and in the case respectively in such a way that the two bezels can turn independently one of the other, characterised by the fact that one of said annular grooves of the case cooperating with the outside bezel is disposed at least partially under the inner bezel.

This arrangement permits on the one hand to substantially reduce the overall diameter of the case and on the other hand to have two adjacent bezels permitting to make their graduations coincide exactly, which is necessary when the bezel are used as a slide rule.

The accompanying drawing represents by way of example one embodiment of the present invention.

FIGURE 1 shows in top plan view a watch provided with a double bezel and used as a slide rule.

FIGURE 2 shows in cross-section a detail of FIGURE 1.

The watch shown on FIGURE 1 has an outer bezel **1** which can be rotated by peripheral knurling **2**, and an inner bezel **3** which can be turned by means of a projection **4** fast on this bezel. On bezels **1** and **3** have been placed the graduations in logarithmic scale of a circular slide rule.

The partial cross-sectional view of FIGURE 2 shows the way in which the two bezels **1** and **3** are mounted on the case **5**. Bezel **3** is held in place by an elastic ring formed by an open polygonal spring **6** bearing on the one hand in groove **8** of bezel **3**, and on the other hand in

groove **9** of the case **5**, the polygonal form of the spring ensuring the axial retention of the bezel on the case. The same is true for the external bezel **1** retained by a similar spring **7** cooperating with grooves **10** and **11** made respectively in the bezel and in the case. This construction also is noteworthy in that the groove **11** is made under bezel **3** which permits to dispose these two bezels edge to edge and thereby provide a simple, massive and robust construction of reduced volume.

In order to facilitate the reading of the slide rule, there will preferably be made on the dial or on the crystal a mark **12** (FIGURE 1), for example at twelve o'clock.

Additionally, instead of an integral projection **4**, which is difficult to machine, there may be made in the inner crown a small radial groove in which would be fixed a small point or a lip.

What is claimed is:

1. In a timepiece having a case, a crystal and a dial, inner and outer concentric bezels carrying graduations and being rotatably mounted on said case outwardly of said crystal: said bezels having means thereon for independently rotating the same; said case having an upper and lower peripheral groove and each of said bezels having a peripheral groove cooperating with one of said grooves of said case to form an upper and lower housing: and a spring in each housing for retaining said bezels in place.

2. Timepiece according to claim **1**, wherein said inner bezel has a projection for rotating the same, said projection overlapping said outer bezel.

3. Timepiece according to claim **1**, where said outer bezel has peripheral knurls.

4. Timepiece according to claim **1**, wherein said dial has an index mark incised therein for facilitating the reading of said graduations.

5. Timepiece according to claim **1**, wherein said graduations are in a logarithmic scale.

6. Timepiece according to claim **1**, wherein said crystal carries an index mark for reading said graduations.

7. Timepiece according to claim **1**, wherein said springs are polygonal.

8. Timepiece according to claim **1**, wherein said groove of said outer bezel cooperates with said lower groove of said case.

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