April 28, 1953 H. DINSTMAN 2,636,283

COMPASS CRYSTAL FOR WATCHES

Filed March 6, 1951

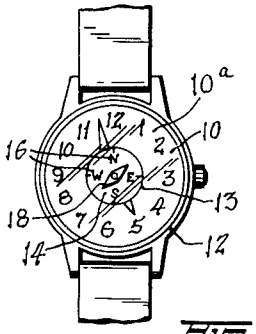


Fig. 1.

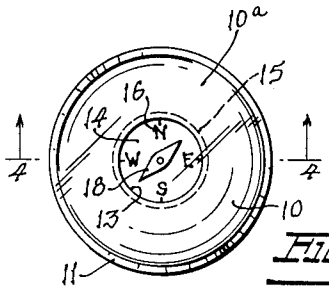


Fig. 2.

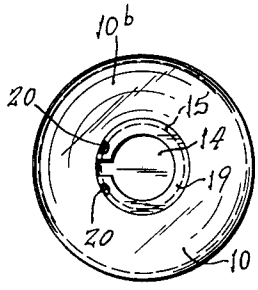


Fig. 3.

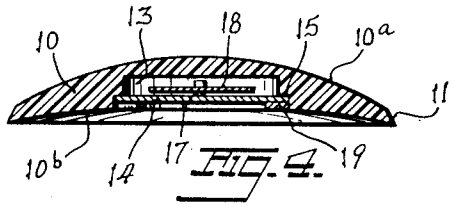


Fig. 4.

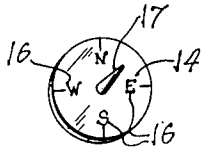


Fig. 5.

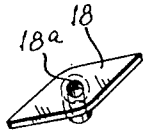


Fig. 6.

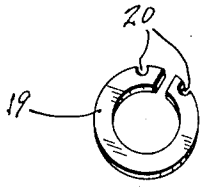


Fig. 7.

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COMPASS CRYSTAL FOR WATCHES

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3 Claims. (Cl. 33—222)

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This invention relates to new and useful improvements in watch crystals.

More specifically, the present invention proposes the construction of an improved watch crystal which includes as an integral part thereof an indicating or similar instrument having an independently operating portion in a manner to be viewed whenever a watch provided with such a crystal is looked at for determining the time.

A further object of the present invention proposes constructing the crystal as a transparent body of synthetic resin or plastic material with a recess extended in from the inner face thereof in a manner to have the indicating or similar instrument mounted therein.

Still another object of the present invention proposes employing a compass as the indicating or similar instrument in a manner so that the wearer can easily and quickly determine directions while motoring, hiking, during camping and hunting trips or when suddenly surrounded by unfamiliar terrain.

The invention further proposes forming the recess with an inner shoulder facing the inner face of the transparent body and positioning a metallic disc of non-magnetic material within the recess and against the shoulder and which has its outer face inscribed with the letters denoting the four directions of a compass and upon which a magnetic needle is pivotally mounted.

Another object of the present invention proposes using a split ring of non-magnetic material which is positioned within the recess in a manner to retain the disc removably in position therein.

Still further, the present invention proposes forming the transparent body to have a smoothly rounded convex outer face and a smoothly rounded inner concave face in a manner so that the transparent body will also serve to magnify the numerals on the face of the watch over which it is positioned.

It is a further object of the present invention to construct an improved watch crystal which is durable and which can be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

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Fig. 1 is an elevational view of a watch having an improved crystal in accordance with the present invention.

Fig. 2 is an enlarged elevational view of the watch crystal per se.

Fig. 3 is a rear elevational view of Fig. 2.

Fig. 4 is an enlarged cross-sectional view taken on the line 4—4 of Fig. 2.

Fig. 5 is an enlarged perspective view of the disc, per se.

Fig. 6 is an enlarged perspective view of the magnetic pointer, per se.

Fig. 7 is an enlarged perspective view of the split ring, per se.

The watch crystal, according to the present invention, includes a transparent body 10 formed of a synthetic resin or plastic material and provided about its perimeter with the usual beveled edge 11 to be fitted into the usual retaining bezel of a watch 12. Suitable synthetic resin or plastic materials of which the transparent body 10 can be formed are methyl methacrylate (a thermoplastic polymerization product of methacrylic acid esters) or polystyrene (a thermoplastic synthetic resin, polymer of styrene, usually prepared from ethylene and benzene).

The transparent body 10 is formed to have a smoothly rounded convex outer face 10^a and a smoothly rounded concave inner face 10^b. The inner face 10^b has a greater radius than the outer face 10^a so that the transparent body 10 will serve as a magnifying glass to magnify the numerals of the watch face over which it is positioned.

Extended inward from the inner face 10^b of the transparent body 10, there is a recess 13 within which there is positioned an indicating or similar instrument including an independently operating portion. As illustrated in Figs. 1 to 4 of the drawing, the recess is arranged concentric within the transparent body so that the indicating or similar instrument is positioned over the pivot point of the watch hands, as shown in Fig. 1. However, it is appreciated that the recess 13 can be formed at any other desired position within the transparent body.

The compass is constructed to include a disc 14 of non-magnetic material positioned within the recess 13 and against an inwardly facing shoulder 15, see Fig. 4, formed within the recess. The outer face of the disc has the four letters 16 denoting the four directions of the compass imprinted on the face thereof and a pin 17 projecting from the imprinted face thereof and into the recess 13. A needle 18 of magnetized ma-

terial, as is generally known in the construction of compasses, is positioned within the recess and pivotally positioned on the pin 17. As shown in Fig. 6, the needle 18 has a recess 18a extended in from the bottom face thereof into which the free end of the pin 17 is received.

A split ring 19 of resilient non-magnetic material is frictionally positioned in the open inner side of the recess 13 against the inner face of the disc 14 retaining the disc in position in the recess against the shoulder 15. The split ring 19 is of a diameter just slightly greater than the diameter of the inner open side of the recess to frictionally engage the material of the transparent body 10 defining the recess. The ends of the split ring 19 are formed with outwardly facing notches 20 into which the end of a pointed member can be engaged for obtaining a grip on one of the ends of the ring 19 to lift it out of the recess 13 to free the disc 14 to be removed.

From the foregoing, it is apparent that the present invention provides a novel arrangement whereby any desired indicating member or instrument having an independently operating portion may be mounted within a watch crystal in position over the face of the watch to be viewed simultaneously with the face of the watch whenever the watch is looked at for determining the time. The indicating member or instrument being an integral part of the watch crystal is always available to be viewed whenever information is to be obtained therefrom either simultaneously with a time determination or independently thereof.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A watch crystal comprising a transparent body, a concentric recess extended into said body from the inner face thereof, said recess having a shoulder therein facing toward the inner face of said transparent body, a disc positioned within said recess and against said shoulder, a compass needle rotatively mounted on said disc and within said recess, and a split ring positioned in said recess and against said disc retaining it in position within said recess, said transparent body

having a smoothly rounded convex outer face, the inner surface of said body bounding said recess being flat to form a magnifying glass with the portion of the outer surface lying over the recess, and the remainder of the inner surface of said body being smoothly concave.

2. A watch crystal comprising a transparent body, a concentric recess extended into said body from the inner face thereof, said recess having a shoulder therein facing toward the inner face of said transparent body, a disc positioned within said recess and against said shoulder, a compass needle rotatively mounted on said disc and within said recess, the inner and outer surfaces of said body over said recess forming a magnifying glass, and a split ring positioned in said recess and against said disc retaining it in position within said recess, and outwardly directed notches formed in the ends of said ring providing a grip for removing said ring from said recess.

3. A watch crystal comprising a transparent body, said body being made of polystyrene, a concentric recess extended into said body from the inner face thereof, said recess having a shoulder therein facing toward the inner face of said transparent body, a disc positioned within said recess and against said shoulder, a compass needle rotatively mounted on said disc and within said recess, and a split ring positioned in said recess and against said disc retaining it in position within said recess, said transparent body having a smoothly rounded convex outer face, the inner surface of said body bounding said recess being flat to form a magnifying glass with the portion of the outer surface lying over the recess, and the remainder of the inner surface of said body being smoothly concave.

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