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ADJUSTABLE AND MOVABLE SUNDIAL

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1 Claim. (Cl. 33—62)

1. My invention relates to an adjustable sundial, and more particularly to a sundial which may be moved from one place to another.

The new sundial according to my invention is essentially adapted to be carried around.

The usual generally known sundials are stationary. They consist of a plate with the time scale and a fixed pointer connected with the plate, the shadow of which falls on the time scale of that plate. In the course of a day, the tip of the shadow describes a curve on the plate which has a greater or lesser circumference depending on the seasonal sun's altitude. In consequence, the graduation of hours on the time scale is not uniform, which disturbs the reading. The plate or time scale of these known sundials must be adjusted only in the north-south direction at its installation.

This invention relates to a movable sundial readable everywhere, for instance a portable sundial for use as a watch or a wrist-watch. Portable sundials of this kind are intended mainly for play and sport, where a good mechanical watch is endangered by pressure, sand, and water, and therefore not always adapted to be carried around. As play and sport are mostly exercised during sunny weather, a portable sundial can well replace a mechanical watch on these occasions.

According to the invention my new sundial comprises a time scale and a shadow-pointer both revolvable around a common axis, said axis to be held in vertical position during the reading of the dial. A magnetic needle is provided in order to bring the time scale in the north direction before each reading.

In order to allow general use of the sundial according to the invention means are provided for eliminating the difference between the actual meridian of the place of reading and the meridian of the corresponding standard time. For that purpose, the plane of the shadow-indicator can be turned in a horizontal direction with respect to the bottom of the upper part or to the time scale, e. g. by a turnable ring carrying the pointer-threads, and the parts adjustable against each other may be provided with corresponding marks, e. g., the bottom having marks for the geographic meridians and the ring having marks for the meridians of special standard times.

An embodiment of the invention is to be described in the following, by way of example, with reference to the accompanying drawing.

The portable sundial of the invention comprises a casing a. If the dial is formed as a wrist-watch, this casing a has bails a1 for the fastening of the watch-band.

Mounted within casing a is a freely turnable magnetic needle b carrying a ring c on which the time scale is attached. The casing a has a turnable upper part d with a glass disc e and a bottom h.

In addition, the turnable upper part d comprises a turnable ring l carrying the shadow indicator. In the embodiment as shown, the shadow indicator is formed by two threads f, one above the other, and stretched by small springs. With parts d and l in the proper relation, the time can be read through an opening g if the shadows of both these threads coincide on the bottom h of the upper part d.

The arrangement of ring l in the upper part d permits shifting of the shadow-indicator f with respect to the reading-aperture g. The difference between the actual meridian of the place of the reading and the meridian of the corresponding standard time can be corrected for before reading the time by shifting the shadow-indicator. In order to simplify this correction, the ring l carries on the inner side marks m of different standard times, e. g. E. S. T., C. S. T., M. S. T., P. S. T., etc. Furthermore, on the bottom h of part d the geographic meridians are marked in such a manner that any mark m of the ring l can be adjusted selectively on the meridian corresponding to the place of reading.

As long as the user of the sundial is staying in the proximity of the local meridian the correcting ring l is to be adjusted only once. The adjustment has to be changed only if the user essentially moves away from that meridian.

The sundial as illustrated can be used in wide areas, e. g. all of North America, etc., or also over the whole world without any difficulties depending on the number and the kind of the marks.

The rather extensive pendulation of the magnetic needle b and of ring c may delay or disturb the reading. Consequently, it is advisable to make the casing a liquid-tight and to fill it with a liquid, as e. g. alcohol, which damps the pendulation of the magnetic needle and ring. In this form, the bottom h is made of transparent material or at least provided with a transparent section in place of the aperture g in order that ring c is well visible.

The invention is not restricted to the embodiments as shown and described but relates to all changes of form which are possible or desirable within the scope of the invention as defined by the claim.

What I claim is:

An adjustable sundial comprising a casing, a
turnable upper part on said casing and a bottom on said upper part, a transparent cover supported by said upper part for rotation relative thereto, a magnetic needle pivoted centrally in said casing, a ring having a time scale marked thereon disposed on said magnetic needle, said bottom having an opening and an index thereat for permitting the reading of the time on said time scale ring, a shadow indicator fixed on said turnable cover on top of the casing, said shadow indicator consisting of two elongate thread-like elements the shadows of which should coincide when the time is read through said opening, means for correcting for the difference between the geographical meridian of the place of reading and the meridian of the corresponding time, including standard and daylight saving times, which means of correction comprises marks on the bottom of the upper casing part for the geographical meridian, and on the cover for the meridian of the special time.

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