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ROTARY INDICATOR

Sol Goldstein, 18 Falcon Road, East Hills, N.Y.

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3 Claims 5

ABSTRACT OF THE DISCLOSURE

A rotary calculator or indicator, including a disc and a supporting element, the disc being supported for rotation by cut lines forming tabs which extend radially inwardly over the edges of the disc.

This invention relates to rotary disc mounting means and relates more particularly to a novel means for mounting a circular disc for rotative movement on a carrier sheet or backing element. The principal object of the invention is to provide a centerless supporting structure which permits the circular disc to be manually rotated to a desired, fixed location, usually for the purpose of making calculations by relating data on the rotary chart to complementary data on a fixed chart, constituting the carrier sheet.

Devices of this character, which are essentially analogue computers, perform a variety of calculations such as telling a housewife how long a turkey of given weight should be cooked and at what temperature, and providing a perpetual calendar.

The simplest and most usual way of mounting a disc for rotation is to employ a central pivot element connecting the carrier to the disc while allowing relatively free rotation of the latter. This requires the use of a grommet or eyelet which has substantial thickness.

The principal object of the present invention is to provide a rotary calculator or indicator of this character made from paper or other sheet material and which can be incorporated into a periodical, publication or book without increasing the thickness of the publication by an amount greater than the actual thickness of the two sheets.

A further object of the invention provides a centerless supporting means for a disc wherein the assembly can be incorporated into a publication without interfering with the operation of binding the pages. Yet another object is to provide a device of this character which is exceedingly inexpensive.

In accordance with the present invention, a plurality of tabs, preferably four, are arranged in a circular pattern, the tabs being formed by cut lines, these tabs facing inwardly towards an imaginary center. Each cut line is of U-shape and has lateral extensions forming shoulders which engage and support the peripheral edges of the disc.

In the drawing:

FIG. 1 is a plan view of a device of the present invention;

FIG. 2 is a broken section taken on line 2—2 of FIG. 1;

FIG. 3 is a broken section taken on line 3—3 of FIG. 1.

A circular disc or chart 10 is mounted for manual rotation on a carrier sheet or backing element 11, the latter having an edge 12 which is located inside the outer periphery of the disc so that an edge section of the disc indicated at 14 can be grasped between the thumb and forefinger to facilitate rotation of the disc.

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The means for supporting the disc for relatively free rotation without adding to the thickness of the chart and carrier sheet includes the formation of a plurality of cut lines which can be performed by conventional die cutting means without the need for removing any material. Each cut line produces a tab which is directed radially inwardly toward the center of the disc. The cut line also includes the two arcuate sections whose edges engage the periphery of the disc to retain it centered during rotation.

Each cut line has a U-shaped section 16 forming the tab 18 and the U-shaped cut line also has opposed curved lateral extension 19 which form short arcs of a circle of the same diameter as the disc, thus providing shoulders for additional support to keep the disc centered.

The disc has a plurality of sight openings 20 with data imprinted alongside the openings and the backing sheet has imprinted thereon certain data. If desired a stop means shown at 21 may be provided for limiting rotation of the disc, although this is an alternative construction and is not normally necessary.

The particular indicator illustrated is one which could be used by skin divers as a guide for duration of submersion.

It will be apparent from the foregoing that an inexpensive rotary indicator has been provided and the disc can be readily inserted under the tabs by slightly bending the disc. The number of tabs is a matter of choice but it should have at least three and four gives better results.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. The combination of a circular disc forming the movable component of an indicator and providing with sight openings therein, and a backing element for mounting the disc and supporting it for rotation relative to the backing element, said backing element being provided with a plurality of cut lines arranged in a circle and forming tabs which are directed radially inwardly towards the center of the disc-supported area, each cut line including a central U-shaped section and sections extending laterally from the ends of the U-shaped sections whose edges are arcs of a circle of substantially the same diameter as that of the disc and which form shoulders which engage the periphery of the disc and retain it centered relative to the disc supporting area.

2. The structure defined in claim 1 wherein the supporting element has no less than three tabs.

3. The structure defined in claim 1 wherein a portion of the disc extends beyond an edge section of the supporting element to permit the edge of the disc to be grasped and rotated.

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60 RICHARD B. WILKINSON, Primary Examiner.

S. A. WAL, Assistant Examiner.

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