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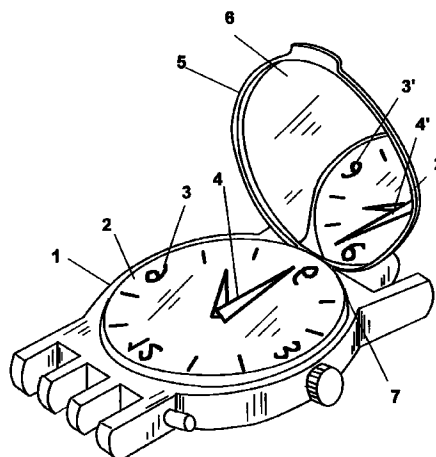
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(54) **Clock structure**

(57) A new clock structure comprising time indication means (4) and reference means (3) associated to a dial (2) in a specularly inverse way. In clocks with hands (4), the latter rotate anticlockwise, whereas in liquid crystals clocks and the like, figures are specularly inverse. Mirror means (6) may be provided to read the time through the reflected image (2', 3', 4') of the dial (2). The mirror means may comprise a mirror (6) pivoted to the dial (2) and having a reflecting side which, in use faces the dial, whereby the mirror rotation lets the observer to find a position in which he can see in the dial the reflected image (21) of the time to read (31,41). The mirror means may comprise on it reference means (22) to read the time, auxiliary reference means (20) being provided on the dial and on the mirror means (21), whereby the coincidence of the former on the latter allows a right time reading.

**Fig. 1**



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## Description

### Field of the invention

[0001] The present invention relates to a clock.

[0002] More precisely it relates to a new clock structure, either a wrist watch, or a table clock, or a wall clock, and to a system to read time on it.

### Brief description of the prior art

[0003] Most of current clocks include a dial on which reference signs are present together with time indication means that rotate with respect to the reference signs, such as, normally, one or more hands.

[0004] Reference signs are usually figures, Arabic numerals or sometimes roman numerals, one for each hour. Sometimes the figures either are used only for some hours, for example 3, 6, 9, 12 o'clock, whereas for other hours only marks are provided, or only marks are provided without any figures on the whole dial. Other clock types have the dial with figures that appear on liquid crystal substrates.

[0005] Designers always look for new dial shapes and new clock structures, desiring to establish new fashions and to launch creative products.

[0006] It is an object of the present invention to provide a new clock type that is at the same time useful, easy to read, creative and attractive.

### Summary of the invention

[0007] These and other objects are achieved by the new clock, according to the present invention, comprising hour indication means and reference means associated to a dial in a specularly inverse way.

[0008] In particular, in clocks with hands, the latter rotate anticlockwise, whereas in digital clocks and the like, digits are specularly inverse.

[0009] Preferably, mirror means are provided to read the time through the reflected image of said dial.

[0010] According to a preferred embodiment, mirror means comprises a mirror pivoted to the dial and having a reflecting side which, in use, faces the dial, whereby the mirror rotation lets the observer to find a position in which he can see the time to read in the reflected image of the dial.

[0011] The mirror means may comprise on it reference means to read the time, auxiliary reference means being provided on the dial and on the mirror means, whereby the coincidence of the former on the latter allows a correct time reading.

[0012] Advantageously, the support means of the mirror means comprises a joint ring that allows them to rotate in the mirror plane. This way it's possible to adjust the mirror position according to the user viewpoint. Moreover, when reference signs are placed on the mirror means it's possible to change the indication of the

time zone simply rotating the mirror in its plane, without having to set the clock hands. If the clock has the minute hand too, it's possible to provide a mirror rim integral to the fixed joint ring portion comprising a minutes reading scale.

### Brief description of the drawings

[0013] Further features and the advantages of the clock according to the present invention, will be made clearer with the following exemplifying description, but not limitative, of one of its embodiments with reference to attached drawings, wherein:

- figure 1 shows an exploded perspective view of a watch according to the present invention;
- figure 2 shows a different perspective view of the watchcase of the watch of figure 1;
- figure 3 shows a top plan view of the watch of figure 1 linked to a watch strap;
- figure 4 shows a side elevational view of a watch according to the present invention that uses a different embodiment of the mirror lifting system ;
- figure 5 shows a perspective view of a table clock according to the present invention;
- figure 6 shows a perspective view of a second table clock type according to the present invention.

### Description of a preferred embodiment

[0014] With reference to figures 1 to 3, a new watch according to the present invention, comprises a watchcase 1 supporting a dial 2 on which numbers and reference signs 3 are printed for the hands 4 that are pivoted at the centre of dial 2.

[0015] According to the present invention, reference numbers 3 are printed on dial 2 in a specularly inverse way.

[0016] Moreover, in addition to the specularly inverse numbers 3 on dial 2, hands 4 of the watch also rotate in a inverse way with respect to usual clocks, i.e. they rotate anticlockwise.

[0017] Preferably, a support ring 5 of a mirror 6 is pivotally connected to watchcase 1. More precisely, support ring 5 is hinged at 7 to watchcase 1.

[0018] An observer can read the time by keeping in mind that the numbers and signs are specularly inverse and that the hands rotate anticlockwise.

[0019] Time reading is possible by orientating the support ring 5 with respect to hinge 7 so that mirror 6, depending on the wrist position, allows to read the reflected time. In this case the reference numbers 3' and the hands 4 appear in the reflected dial 2' in the usual position, that is hands 4' are reflected that rotate clockwise.

[0020] In an advantageous embodiment of the invention, always concerning a watch, support ring 5 can rotate so that mirror 6 covers the dial 2, as a lid.

[0021] With reference to figures 2 and 3, wherein the watch is shown with watchcase 1 tied to the wrist of a user's hand 8 by a watch strap 9, mirror 6 advantageously has a transparent outer side, whereby it allows to see through it dial 2, reference numbers 3 and hands 4 while they are rotating anticlockwise with respect to specularly inverse reference signs.

[0022] With reference to figure 4, another embodiment of the invention has mirror 6 assembled on a frame 10, which is movable with respect to the watchcase 1 and has a rectangular shape, by means of hinge 7 and a rod 11 which slides on guides 12. Guides 12 have notches 13 that are used to adjust mirror 6 in different angular positions.

[0023] Obviously, instead of the watch of figures 1 to 4, a very similar wall clock can be made having the watchcase 1 with size and shape such that it can be hung in a vertical position.

[0024] According to the present invention, a table clock can be made too, as shown in figure 5, wherein a base 15 supports dial 2 that is assembled on a spherical body 16 inserted in a spherical cavity 17. A support 18 is connected to the base 15 to hold pivotally mirror 6 and to allow rotation of the mirror itself.

[0025] When the clock is on the table the observer can read the time by orienting the spherical body 16 and/or the mirror 6 so that he can see the reflected hands 4', reference numbers and marks 3' reflected on the mirror itself. It is to be noted that the time in the dial 2 is still specularly inverse. Mirror 6 can be rectangular to facilitate the time reading, as shown in figure 5. The mirror orientation can be easily changed depending on the observer's viewpoint.

[0026] In the different embodiment shown in figure 6, the mirror support, shown in figure 5, can be replaced by a telescopic arm 19 that has a spherical joint at its ends to allow whichever mirror 6 movement.

[0027] According to a possible embodiment, reference signs 22 may be provided on the mirror instead of the dial, as shown in figure 6. In this case, auxiliary reference means 20 and 21 are provided on the dial and on the mirror respectively, whereby the coincidence reflected image 20' of the former on the target sign 21 allows a right reading of the time.

[0028] Support 18 may comprise a joint ring that lets mirror 6 rotate in the mirror plane, for example through a click device, according to arrow 23, i.e. clockwise and anticlockwise. When, as shown in figure 6, the reference signs are placed on the mirror means, it's possible to change the indication of the time zone simply rotating the mirror in its plane, without having to set the clock hands. In fact, rotating the mirror clockwise of an angle corresponding to one hour, the clock can be set on a time zone that is one hour down with respect to time indicated on the dial. If the clock has the minute hand too, it's possible to provide a mirror rim integral to the fixed joint ring portion (not shown) comprising a minute scale, therefore minute reading is offset with respect to

the normal time reading. The mirror rotation in its plane may be used also to adjust the time reading with respect to the observer view point.

[0029] A clock according to the present invention may also comprise a dial with liquid crystal figures, the time being read without reference means. In this case, the liquid crystal figures are specularly inverse with respect to normal clocks, and the time is read by seeing the reflected image on mirror 6.

[0030] Although the embodiment with mirror 6 has been indicated as preferred, it is clear that it is not essential, being clear that a user can understand directly the time on a clock with anticlockwise rotating hand and specularly inverse reference signs.

[0031] The foregoing description of specific embodiments will so fully reveal the invention according to the conceptual point of view, so that others, by applying current knowledge, will be able to modify and/or adapt for various applications such embodiments without further research and without departing from the invention, and it is therefore to be understood that such adaptations and modifications will have to be considered as equivalent to the specific embodiments. The means and the materials to realise the different functions described herein could have a different nature without, for this reason, departing from the field of the invention. It is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

## Claims

1. Clock comprising time indication means associated with a dial, characterised in that said time indication means are specularly inverse with respect to said dial.
2. Clock according to claim 1, wherein mirror means are provided to read the time through the reflected image of said dial.
3. Clock according to claims 1 or 2, wherein said time indication means comprise hands that rotate with respect to reference means, characterised in that said hands rotate anticlockwise with respect to said dial and that said reference means comprises figures specularly inverse with respect to said dial.
4. Clock according to claims 1 or 2, wherein said time indication means comprise liquid crystal figures, said figures being specularly inverse with respect to said dial.
5. Clock according to claims 2 to 4, wherein said dial is assembled on a watchcase or a wall case, said mirror means being assembled on a support that can rotate with respect to said case.

6. Clock according to claim 5, wherein said support of said mirror means comprises a rod hinged to it and having the other end sliding on said case.
7. Clock according to claims 2 to 6, wherein said mirror means can cover said dial and has the side opposite to said dial that is semitransparent. 5
8. Clock according to claims 2 to 4, wherein said dial is associated to a frame movable with respect to a base, the latter having support means for said mirror means which can be oriented. 10
9. Clock according to claims 2 to 8, wherein said mirror means comprises reference means printed on it to read the time, auxiliary reference means being provided on said dial and on said mirror means, whereby the coincidence of the former on the latter allows a right reading of the time. 15
10. Clock according to claim 8, wherein said support means for said mirror means comprises a joint ring that lets the mirror means to rotate in the mirror plane. 20

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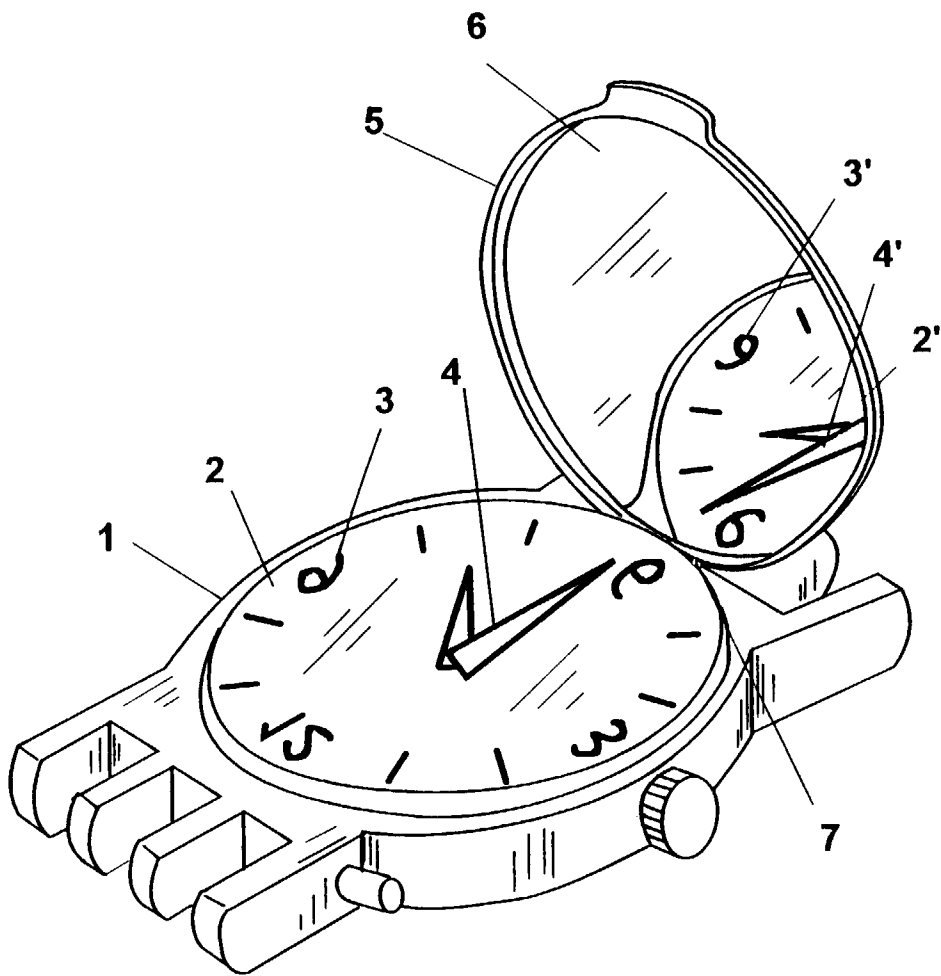
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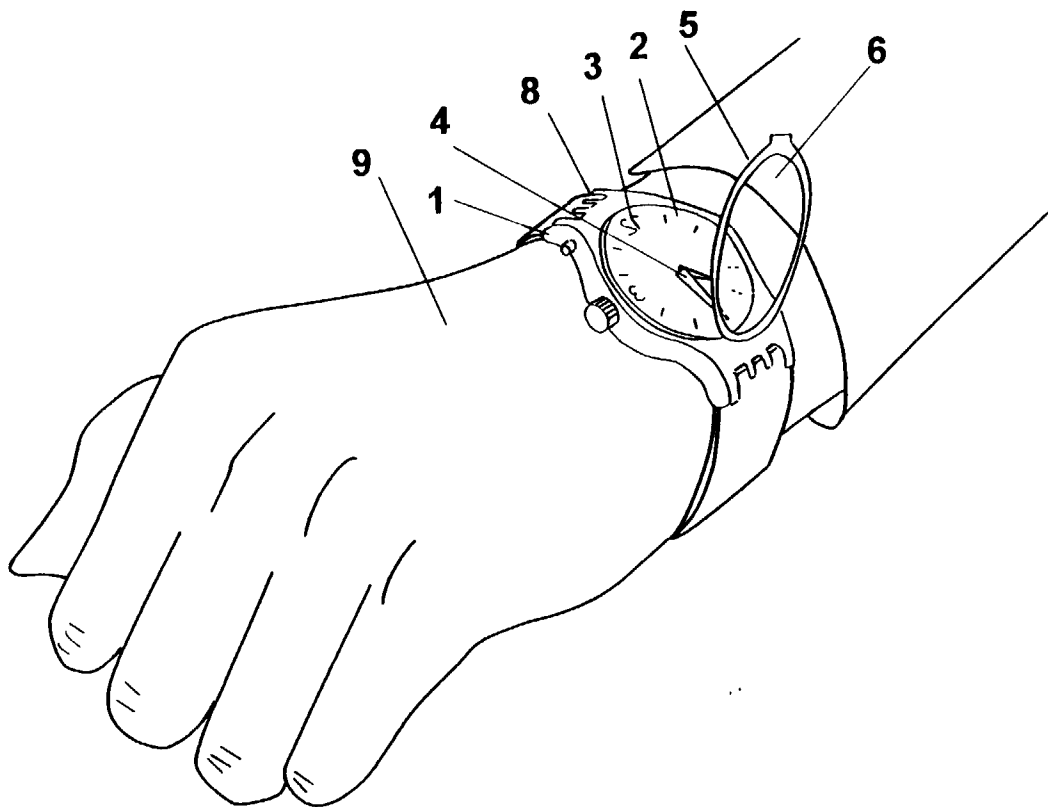
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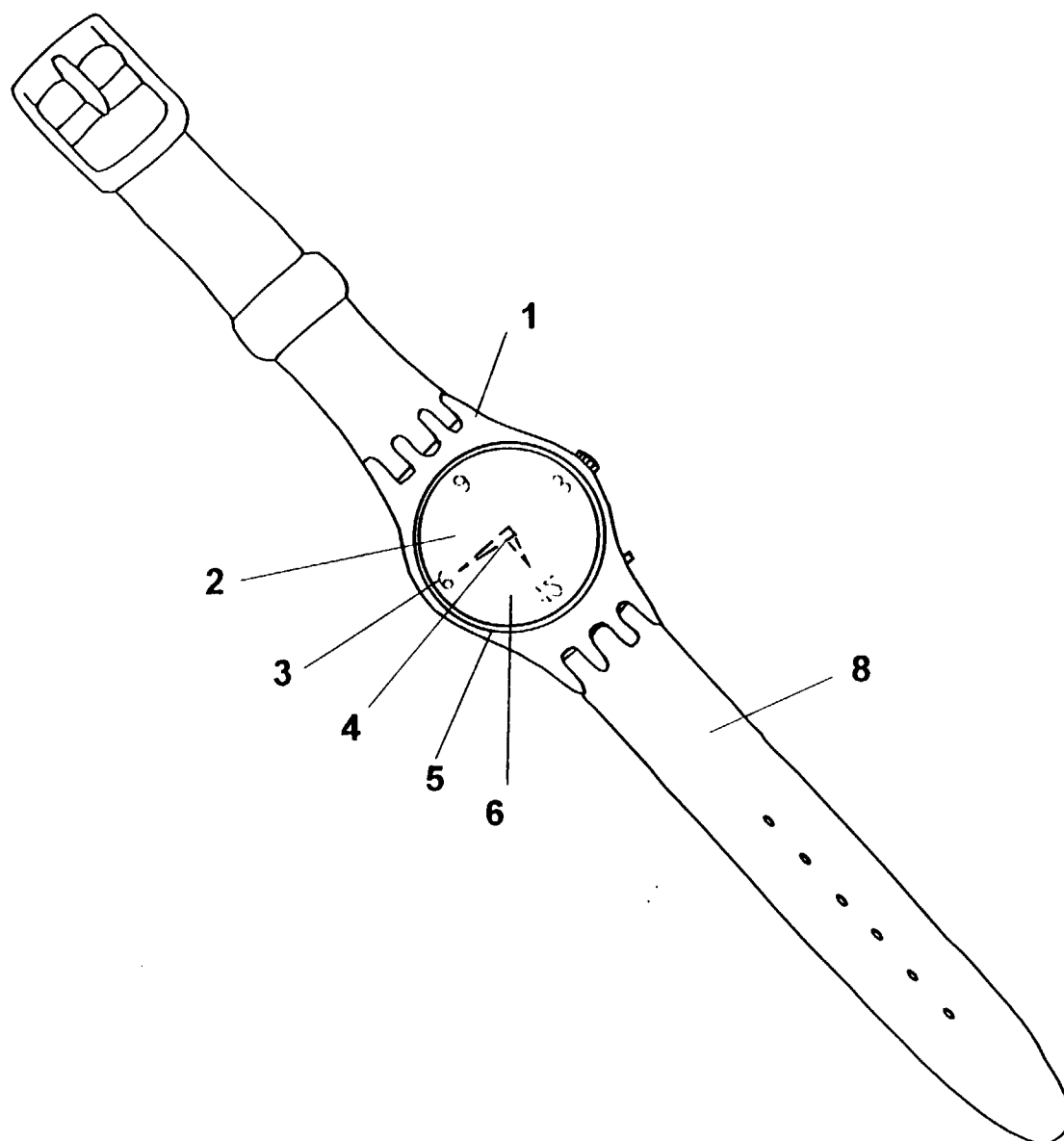
**Fig. 1**



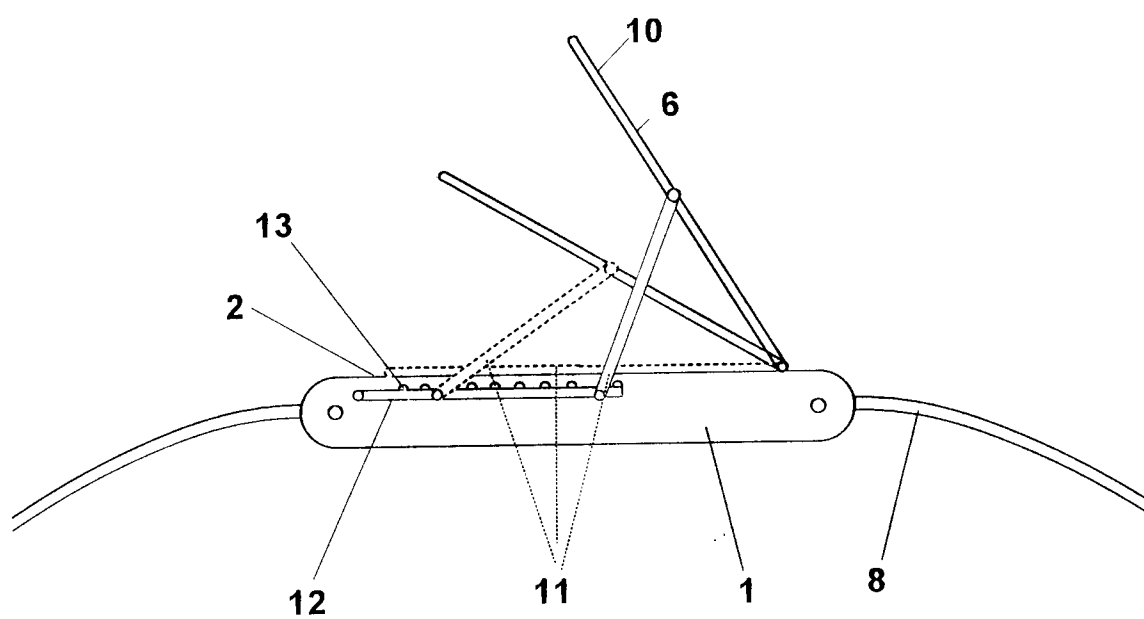
**Fig. 2**



**Fig. 3**

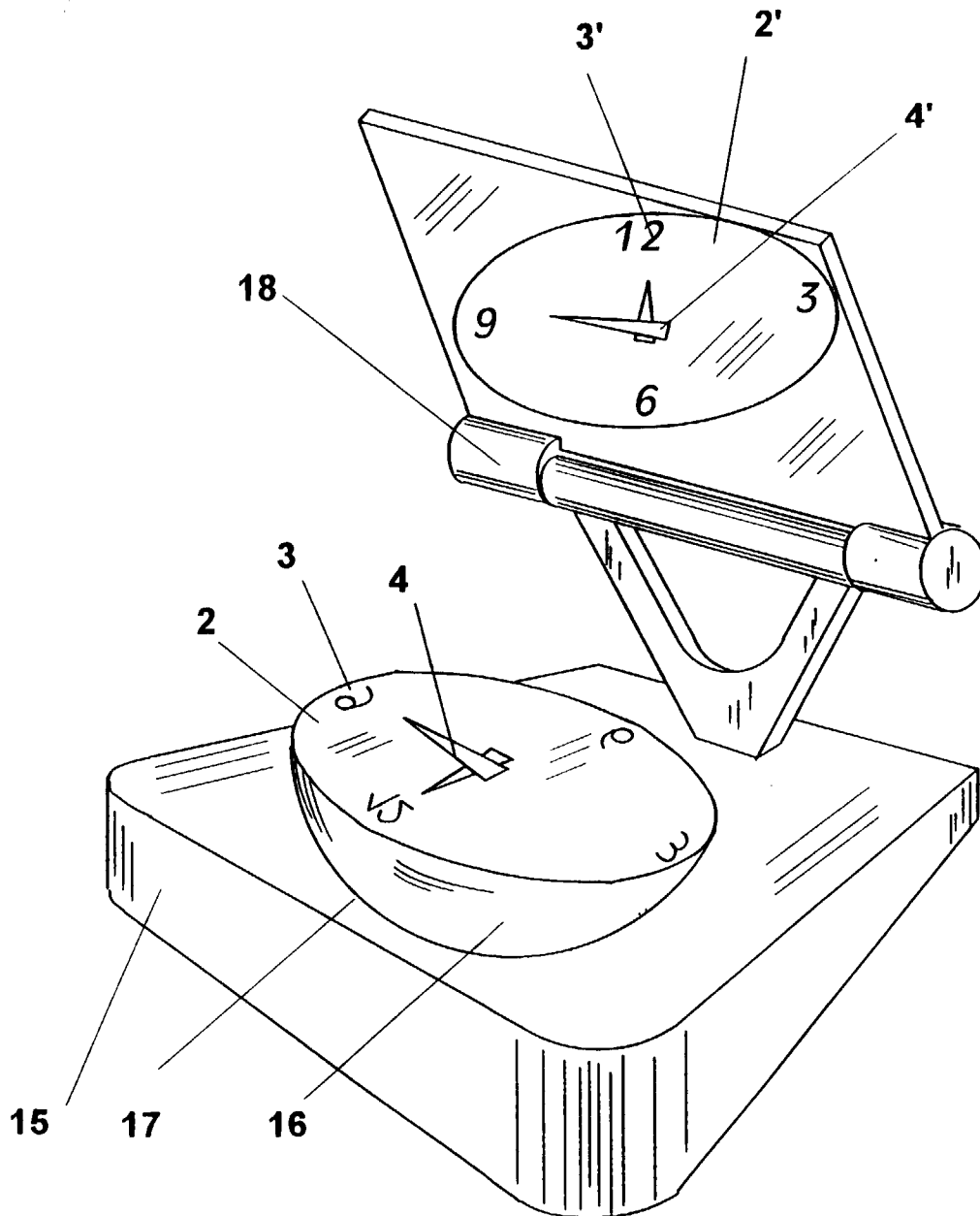


**Fig. 4**





**Fig. 5**



**Fig. 6**

