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(71) Applicant: **Rosito, Leonardo**
03014 Fiuggi (FR) (IT)

(72) Inventor: **Rosito, Leonardo**
03014 Fiuggi (FR) (IT)

(74) Representative:
Massari, Marcello
Studio M. Massari S.r.l.
Via Campo di Marzio, 46
00186 Roma (IT)

(54) Clock displaying both the local time and the corresponding time of the twenty-four time zones

(57) A clock displaying the local time in hour and minutes and the corresponding time in all of the time zones identified by the main town in each time zone, comprising a clock mechanism rotating in anticlockwise direction, a movable member mounted on the hour shaft and carrying the twenty-four time zones, a hand mounted on the minute shaft, and circular crowns which are stationary with respect to the pivotally mounted member and carry the 24 hours and the 60 minutes, hands pointing hours and minutes being also provided.

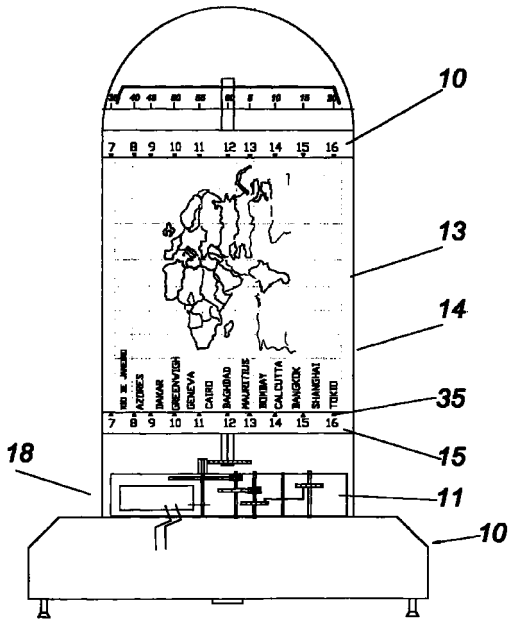

FIG. 1

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Description

[0001] This invention relates to a clock such as a table-clock or a wrist-watch displaying the local time in hour and minutes and the corresponding time of several countries according to the time zones.

[0002] In its first embodiment as table clock the hour hand consisting of a pointer is replaced by a translucent cylinder on the surface of which the terraqueous globe or world map with seas, oceans and continents in both northern and southern hemispheres is drawn in cylindrical projection. The generatrices of the cylinder corresponding to the meridians delimiting the twenty-four time zones forming one day are marked out on the geographical map of the cylinder surface. At the base of the cylinder on an outer bell a stationary band is provided on which the 0-24 hours and as many arrows are shown pointing the time zones drawn on the cylinder moving above them. Furthermore, the name of the most important town of each time zone is written in each time zone. The cylinder is moved by a suitable mechanism which is mounted on the shaft of the hour hand which extends upwards so that it can rotate integral therewith.

[0003] The minutes are pointed by a minute hand mounted on the corresponding shaft coaxial with the hour shaft, such minute hand being preferably double because the indication of the minutes located at the top has a double numbering for a better view from any point of observation. It should be appreciated that the mechanism for moving the cylinder rotates the same in anticlockwise direction, i.e. in the direction of rotation of the earth, so that the numbering of the inventive clock is oriented in the opposite direction with respect to the normal clocks.

[0004] In addition a power supplied lamp is located inside the cylinder for lighting up the area of the world map where it is light, i.e. the lamp lights up the daytime zones.

[0005] The above assembly of the table clock, mechanism with rotating cylinder, relative frame, minute hand and lighting lamp is supported by a base carrying also the stationary glass bell which protects the assembly and is provided with hour and minute indications on horizontal lower and upper bands.

[0006] In its second embodiment for wrist-watch or pocket-watch a circular dial plate rotating with the shaft of the hour hand is mounted on such shaft and is divided into twenty-four sectors with the same width corresponding to the twenty-four time zones. Two fixed concentric circular crown portions are located outside the rotating dial plate and inside the watchcase, the inner circular crown portion carrying the twenty-four hours and the outer circular crown portion the sixty minutes. It is evident that such a watch carries only the minute hand pointing the outer stationary circular crown portion outside the hour circular crown portion.

[0007] As far as the mechanism is concerned, it can be of any suitable, mechanical or electrical type, or a quartz mechanism or the like.

[0008] The object of the invention will now be described in greater detail with reference to the accompanying drawings, in which:

Fig. 1 is an elevation of the clock assembly with the driving mechanism;

Fig. 2 is an elevation of only the cylinder;

Fig. 3 is an elevation of the frame, the cylinder being removed;

Fig. 4 shows the outer bell with lower and upper bands of hours and minutes marked out thereon;

Fig. 5 shows the basement;

Fig. 6 shows the power supplied driving mechanism;

Fig. 7 shows the double minute hand;

Fig. 8 shows a pocket watch according to the second embodiment of the invention; and

Figs. 9 and 10 show the two stationary and moving members of the watch of Fig. 8, respectively.

[0009] Referring now to Figs. 1 to 3, the clock according to the invention includes a basement 10, a driving mechanism generally indicated at 11, a frame 12, a translucent rotating cylinder 13 rotated by mechanism 11, on the surface of which the world map is depicted in cylindrical projection, with the generatrices showing the 24 meridians defining the time zones, and an outside transparent bell 14 provided with a lower band 15 carrying the 24 hours of the day and an upper band 16 also carrying the 24 hours, the minutes being disposed above the latter on two half circles each carrying 60 minutes.

[0010] The driving mechanism 11 is a conventional mechanism which is mechanically or electrically moved e.g. by a battery power supply indicated at 18 in the anticlockwise direction, i.e. opposite to the conventional clocks.

[0011] Unlike the conventional mechanism, the coaxial shafts of hours 19 and minutes 20 of mechanism 11 are very long and extend upwards beyond the top of frame 12.

[0012] The gear wheels of train 30 performing the functions of regulating and selecting the time are located and mesh together close to the upper end 31 of shaft 19. A lamp 26 for lighting the portion of the cylinder 13 corresponding to the time zones where it is light is located inside the cylinder.

[0013] Apart from the extension of shafts 19 and 20 and the train of gear wheels 30, as already mentioned,

the mechanism 11 is of the conventional type provided with the necessary escapement, and then it will not be described herein in greater detail.

[0014] As shown in Fig. 3, the upper end 31 of hour shaft 19 carries a wheel 32 supporting and driving cylinder 13, the top of which is opened (Fig. 2) and provided with a bush 33 for its insertion into end 31. The arrangement of the components is such that when cylinder 13 is put into end 31 of shaft 19 and mechanism 11 is arranged on basement 10 and the outside translucent bell 14 is located on the latter, the base of cylinder 13 divided into twenty-four portions 34 with the same width is at the level of lower band 15 so that the twenty-four arrows 35 each indicate one of the twenty-four time zones. Likewise the minutes are preferably arranged in two sets of 60' above the upper band 16, each set being arranged on a half circle of 180°. It is evident that frame 12 supports shafts 19 and 20 both at the base and the upper ends 31 projecting above the same and the train of gear wheels 30.

[0015] With the arrangement described and shown the hour of each time zone with respect to any starting pointer will be indicated from the pointer relative to that time zone. For example, in the case illustrated in Fig. 1, 10 o'clock of Greenwich's meridian corresponds 14 o'clock of Calcutta as shown by arrows 35.

[0016] Fig. 7 shows the double hand 40 for indicating the minutes located above band 16 on bell 14.

[0017] The embodiment of Figs. 8 to 10 for wall-clocks, pocket-watches ad wrist-watches is essentially the same and in such figures like or similar parts and components as the embodiment of Fig. 1 are designated by the same numerals increased by 100. Consequently, a dial plate 113 is disposed inside watch 111 and pivotally supported by hour shaft (not shown) rotating in anticlockwise direction inside the stationary circular crown 115.

[0018] The dial plate is divided into twenty-four sectors with the same width, one for each time zone, each of them has the name of the main town in each time zone.

[0019] The hours of the twenty-four time zones are shown on the inside circular crown portion of the stationary circular crown 115, and the sixty minutes are shown on the outside circular crown portion and will be indicated by the central hand 140 supported by the minute shaft coaxial with the hour shaft. Likewise to the indication of the time of a determined time zone the corresponding time of any other time zone is also indicated.

Claims

1. A table-clock displaying the local time in hour and minutes and the corresponding time in several countries according to the different time zones, comprising a basement (10), a driving mechanism (11) with shaft pointing hours (19) and shaft pointing minutes (20), characterized in that said hour pointing shaft (19) supports pivotally a translucent cylinder (13) showing the world map in cylindrical projection on its surface, with the generatrices forming the meridians defining the twenty-four time zones (34) and carrying the names of the main towns in each time zones, and that it has an outer transparent bell (14) supported by said basement and carrying a lower band (15) with the twenty-four hours of the day spaced apart regularly thereon, and an upper band (16) also with the twenty-four hours, while the minutes are shown above the latter band on two half circles each carrying 60 minutes, twenty-four arrows (35) one for each time zone being also provided on said lower and upper bands so that each such arrow point a time zone on the upper and lower edges of said cylinder (13).

2. The clock according to claim 1, wherein said driving mechanism (11) is a conventional mechanism arranged to rotate in anticlockwise direction unlike those of the conventional clocks.

3. The clock according to claim 2, wherein said mechanism (11), said coaxial shafts of hours (19) and minutes (20) are very long and extend upwards beyond the top of said frame (12) so that said cylinder (13) is disposed outside said frame (12) and inside said transparent bell (14) when it is mounted on said shaft (19).

4. The clock according to claim 3, wherein a double hand (40) is supported at the end of said minute shaft.

5. The clock according to claim 1, wherein a lamp (26) is located inside said cylinder (13) supported by said frame (12) for lighting up the area of the world map where it is light, i.e. the daytime zones.

6. The clock according to claim 1, wherein said driving mechanisms (11) is installed inside a watchcase and a dial plate (113) is located on said hour shaft and is divided into twenty-four sectors with the same width one for each time zone and rotates with said shaft inside a stationary circular crown (114) showing the twenty-four hours on the inside circular crown portion (115) and the sixty minutes on the outside circular crown portion, the name of the most important town of each time zone being written on each said sector so that said minutes are pointed by minute hand (14) rotating above said dial plate (113) with its point indicating said minutes.

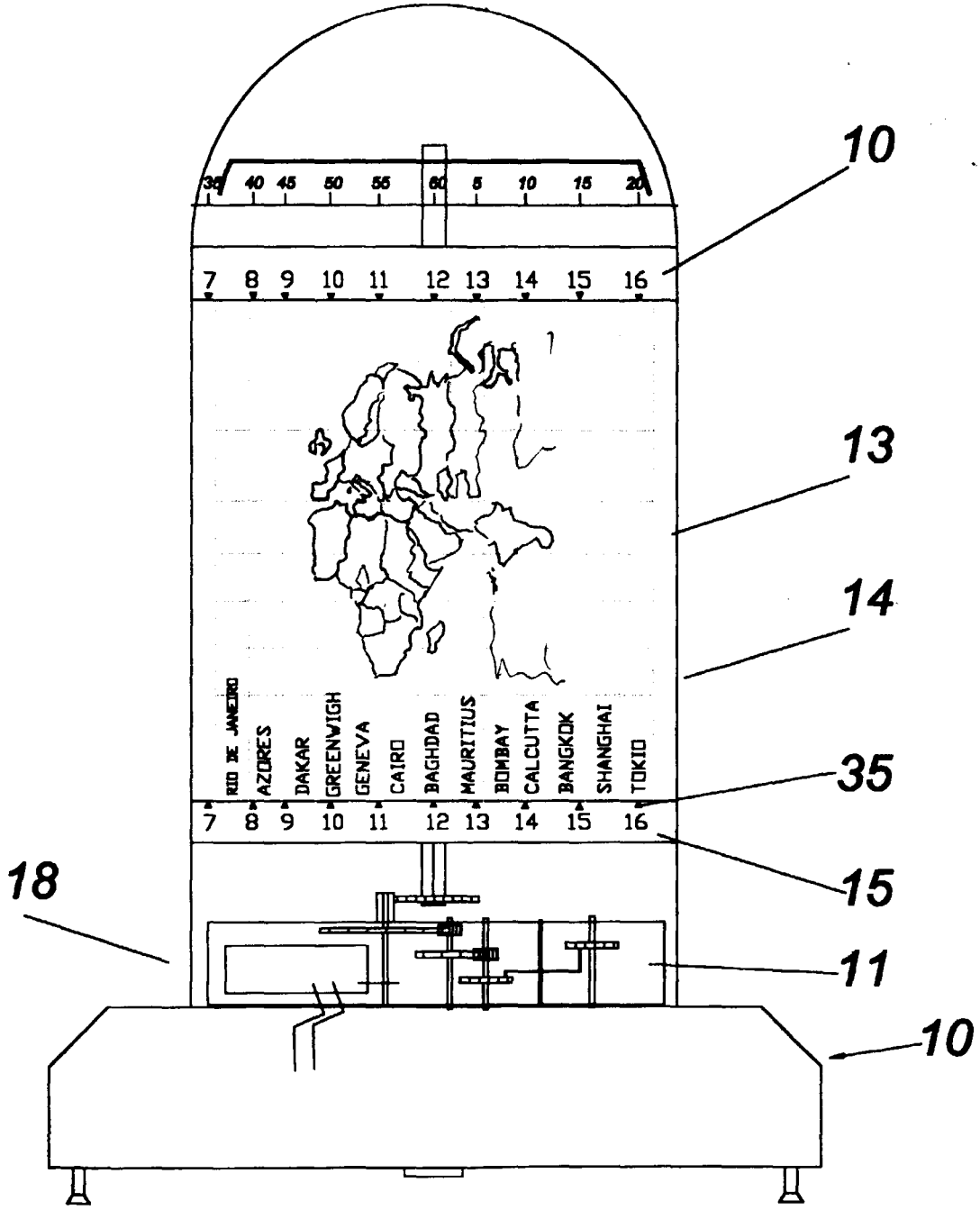
10
13
14
35
15
18
11
10
30 40 45 50 55 60 5 10 15 20
7 8 9 10 11 12 13 14 15 16
RIO DE JANEIRO
AZORES
DAKAR
GREENWIGH
GENEVA
CAIRO
BAGHDAD
MAURITIUS
BOMBAY
CALCUTTA
BANGKOK
SHANGHAI
TOKIO

FIG. 1

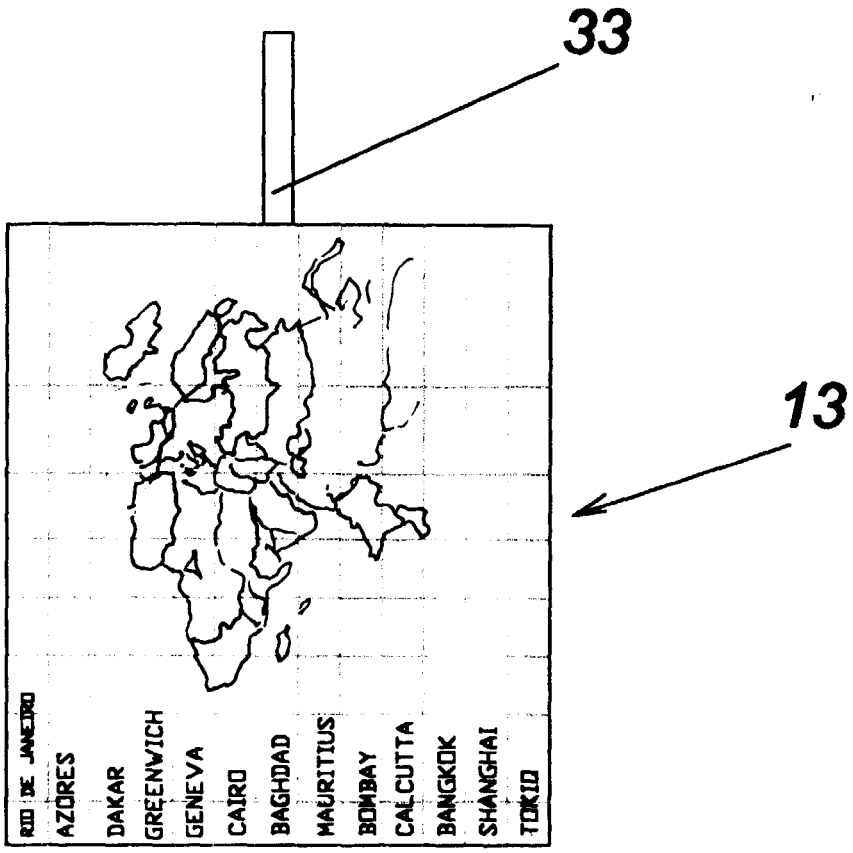
33
13
RIO DE JANEIRO
AZORES
DAKAR
GREENWICH
GENEVA
CAIRO
BAGHDAD
MAURITIUS
BOMBAY
CALCUTTA
BANGKOK
SHANGHAI
TOKIO

FIG.2

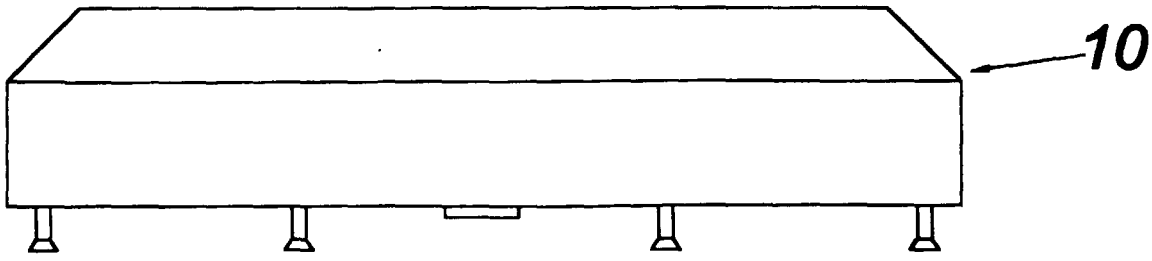
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FIG. 5

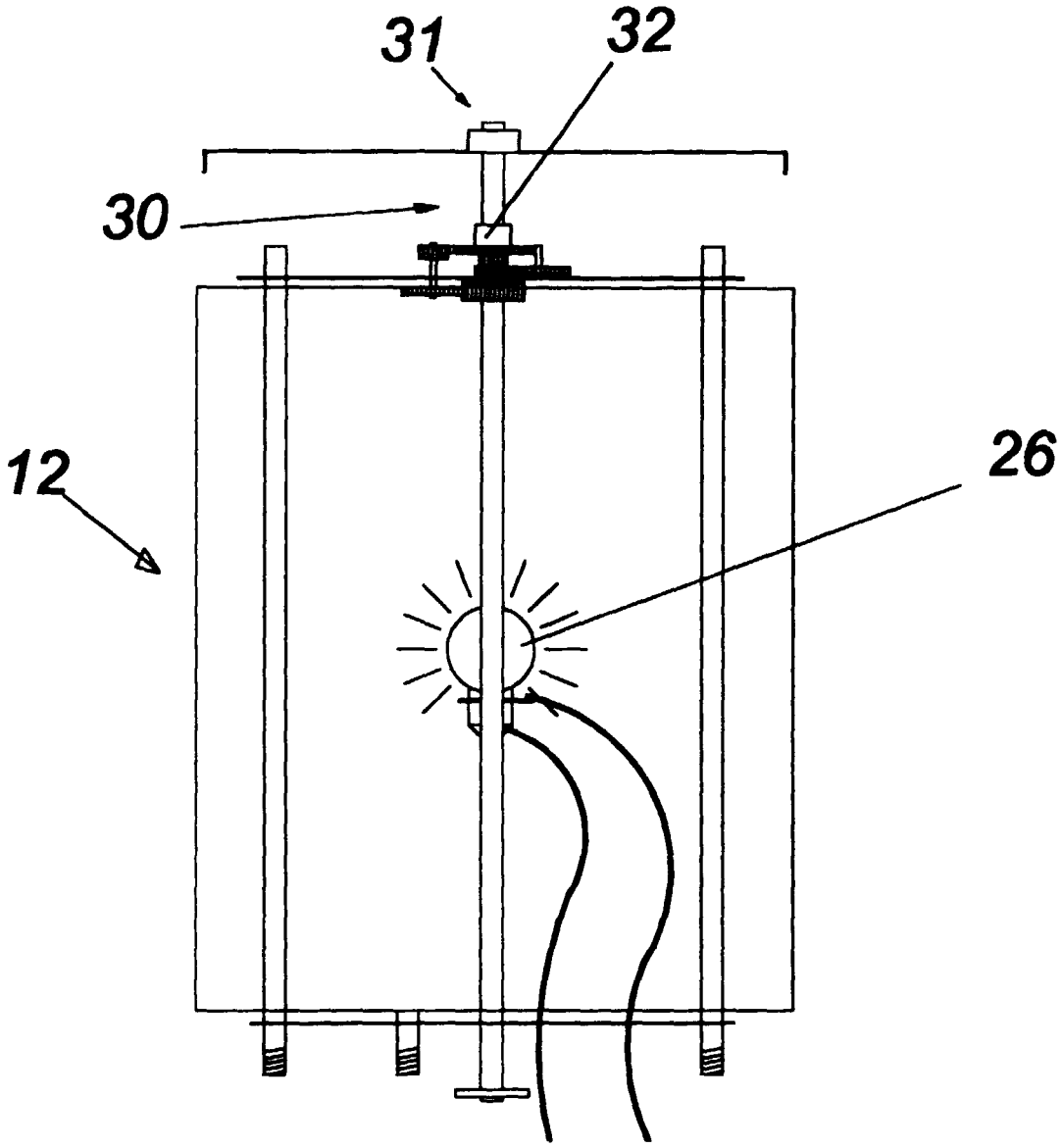

FIG. 3

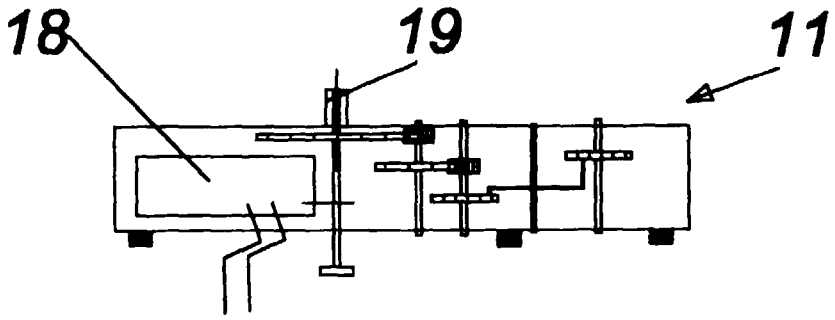

FIG. 6

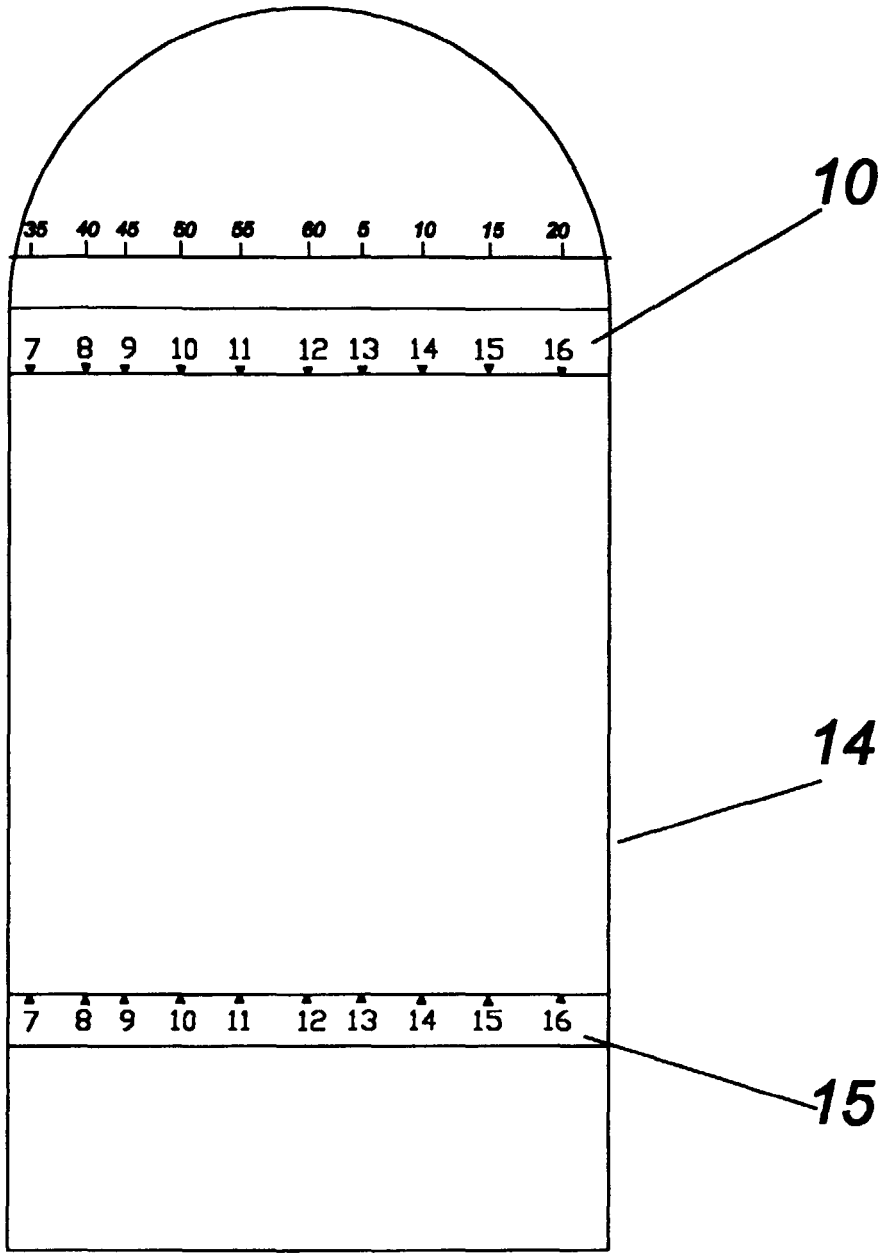
10
35 40 45 50 55 60 5 10 15 20
7 8 9 10 11 12 13 14 15 16
14
7 8 9 10 11 12 13 14 15 16
15

FIG. 4

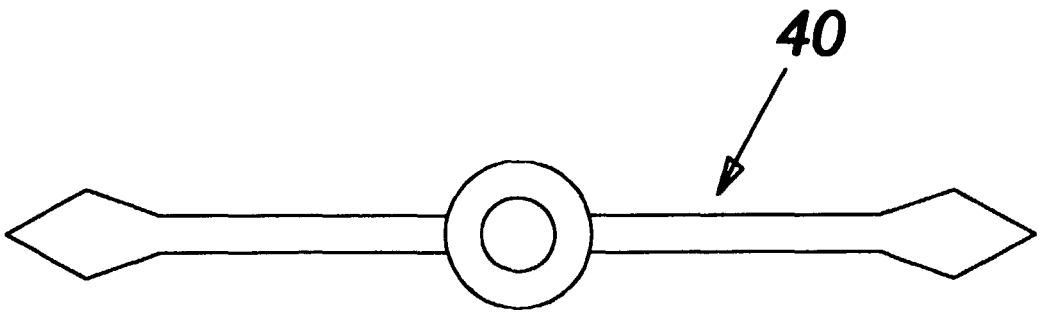
40

FIG. 7

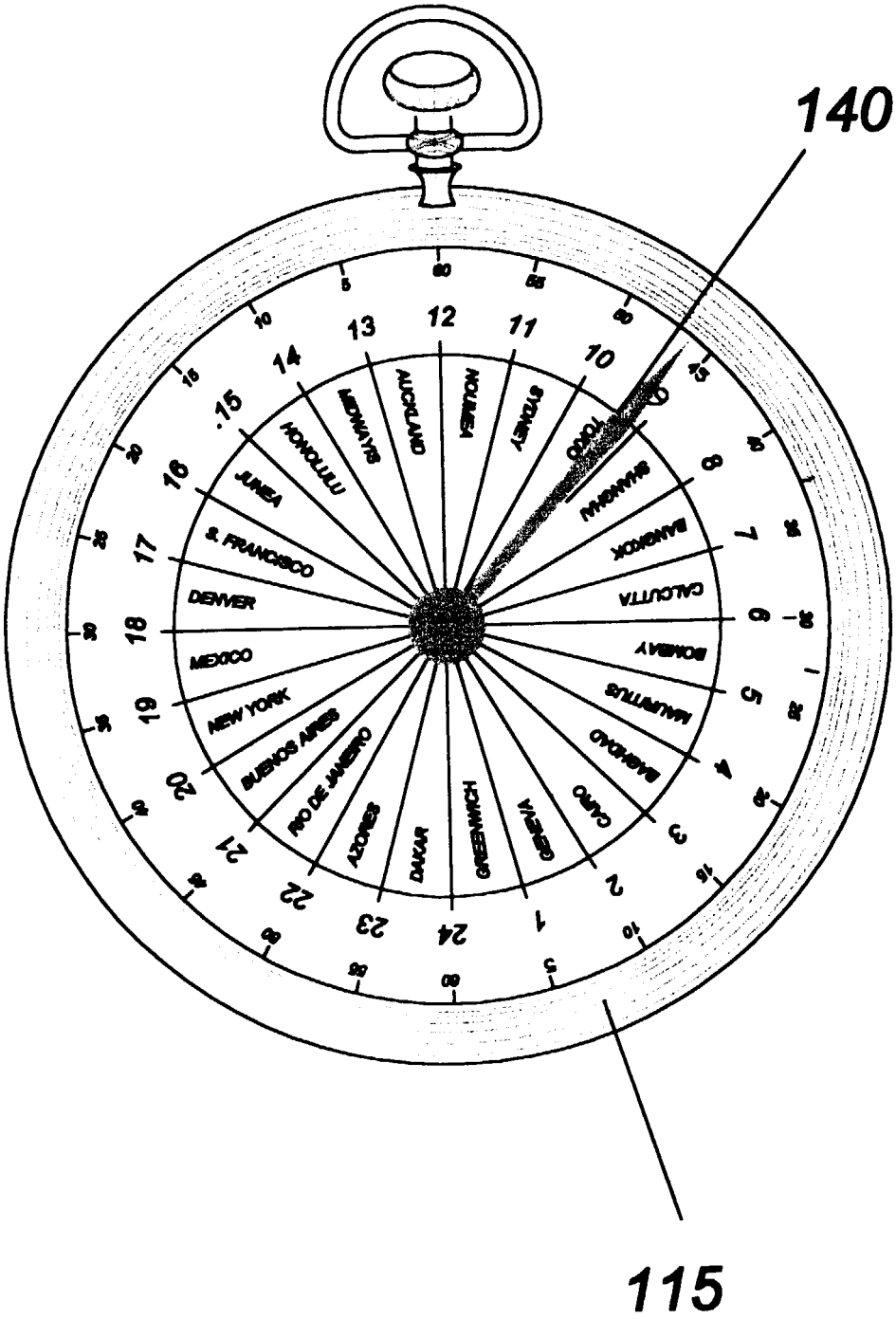
140
115
12
13
11
10
14
15
16
17
18
19
20
21
22
23
24
1
2
3
4
5
6
7
8
9
AUCKLAND
NOUMEA
SYDNEY
TOKIO
SHANGHAI
BANGKOK
CALCUTTA
BOMBAY
KARACHI
DUBAI
CAIRO
GENEVA
GREENWICH
DAKAR
AZORES
RIO DE JANEIRO
BUENOS AIRES
NEW YORK
MEXICO
DENVER
S. FRANCISCO
JUNEA
HONOLULU
MIDWAY

FIG. 8

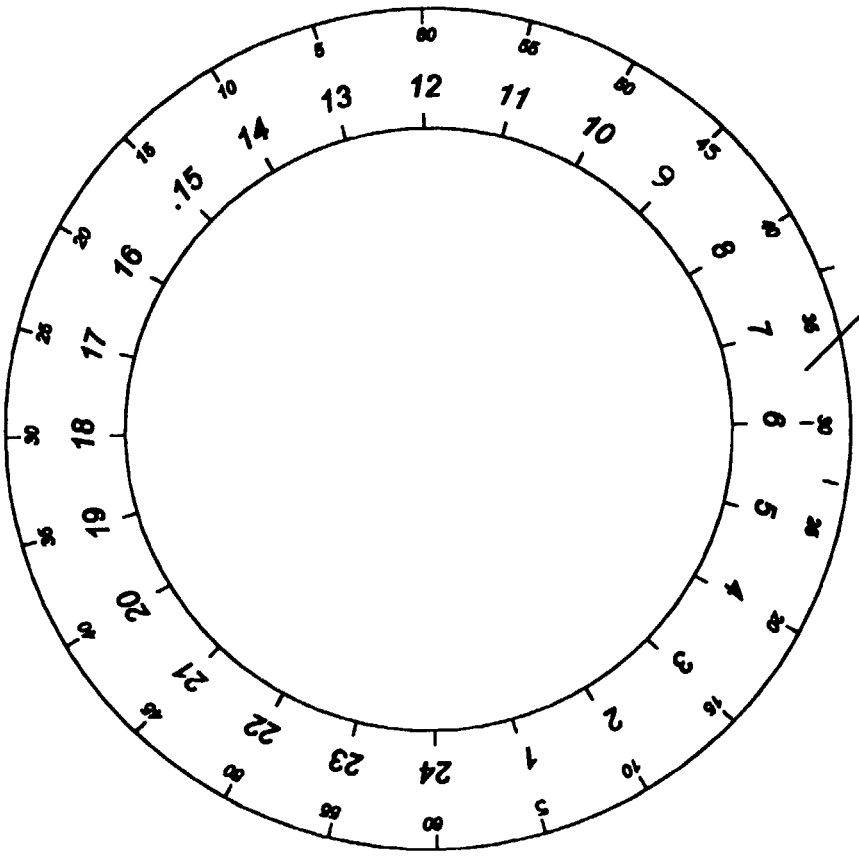
115

FIG. 9

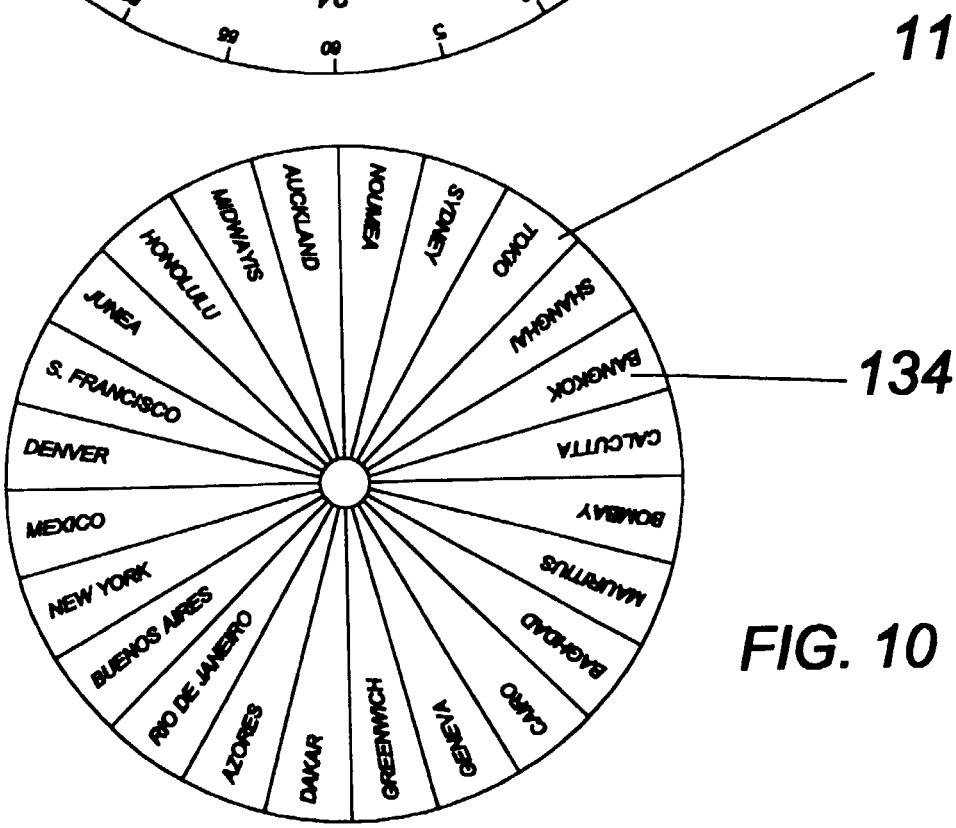
113
134
TOKIO
SYDNEY
NOUMEA
AUCKLAND
MIDWAYIS
HONOLULU
JUNEA
S. FRANCISCO
DENVER
MEXICO
NEW YORK
BUENOS AIRES
RIO DE JANEIRO
AZORES
DAKAR
GREENWICH
GENEVA
CAIRO
BAGHDAD
MAURITIUS
BOMBAY
CALCUTTA
BANGKOK
SHANGHAI

FIG. 10