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GLOBE CLOCK

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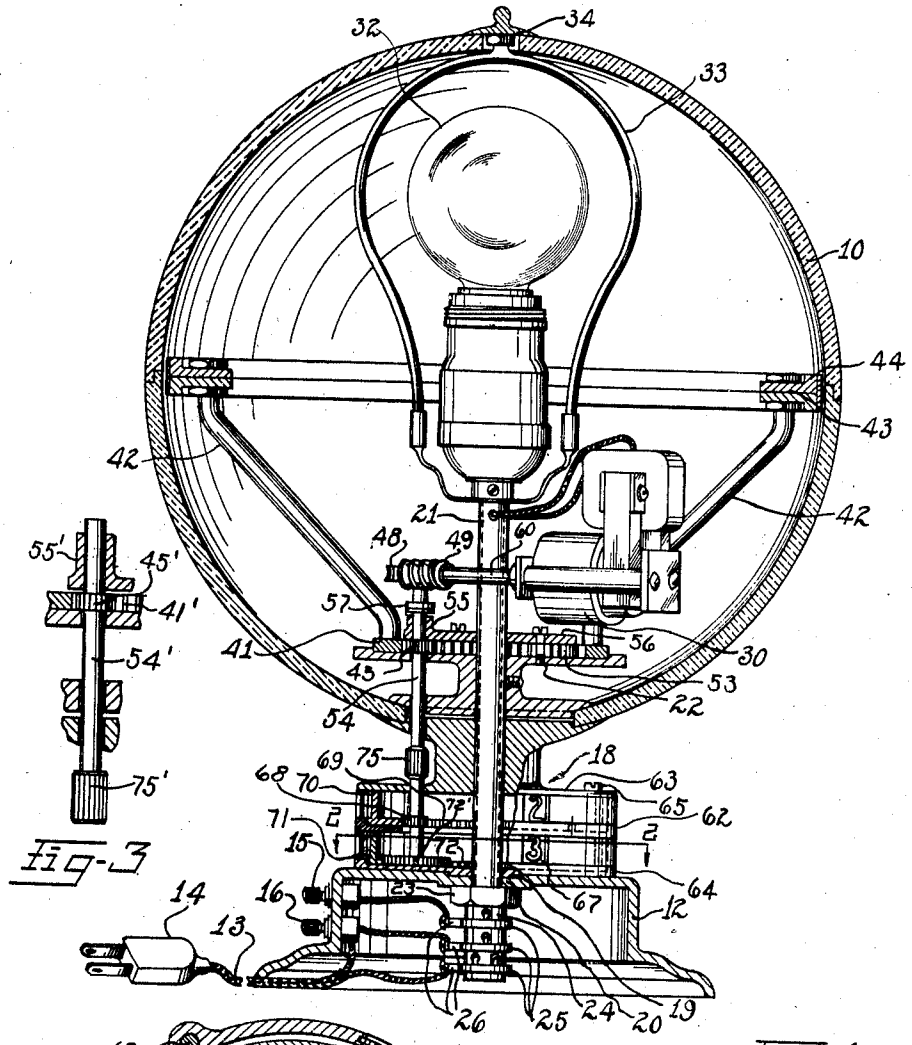


Fig-3

Fig-1

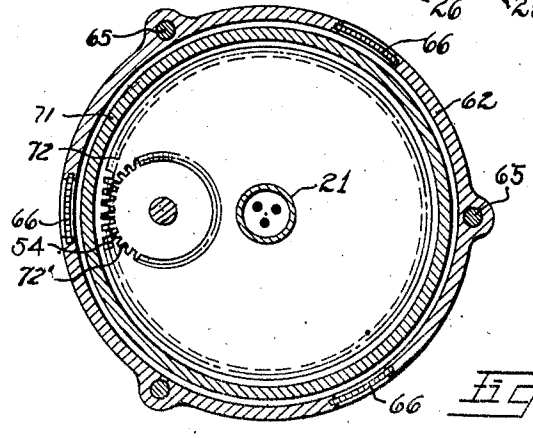


Fig-2

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GLOBE CLOCK

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6 Claims. (Cl. 58—44)

This invention relates to a combined terrestrial globe and direct reading clock mechanism for indicating the time in various parts of the world.

An object of the invention is to provide a new and improved terrestrial globe clock of the above character in which the time indicator is combined with the structure so that it can be readily visible and at the same time retain an unobstructed view of the globe.

Another object is to provide a globe clock of the above character wherein the clock mechanism is disposed within the globe and the globe base in such manner that the globe may be turned for examination of different parts thereof without affecting the operation of the clock mechanism and without impairing the visibility of the time indicating mechanism.

Another object of the invention is to provide a globe clock with a base arranged to support and display direct reading time indicating means together with readily accessible manual means for adjusting or setting the time indicating means as desired.

Other objects and advantages will hereinafter appear and for purposes of illustration, but not of limitation, an embodiment of the invention is shown on the accompanying drawing in which

Figure 1 is a vertical sectional view of a terrestrial globe clock with portions illustrated in side elevation;

Figure 2 is an enlarged section taken substantially on the line 2—2 of Figure 1; and

Figure 3 is a fragmentary vertical sectional view of an arrangement for manually operating the time indicating mechanism.

The invention is illustrated as comprising a globe clock consisting of a glass or translucent sphere 10 made of two parts fitted together in overlapping relation. On the outside of the globe may be painted or otherwise suitably applied a map of the world so that a lamp on the inside will illuminate the outside of the globe. The globe 10 is mounted on a hollow base 12 to which lead wires 13 having a connecting plug 14 at the outer end. On the base 12 are provided switches 15 and 16 which control a clock operating motor and the lamp respectively.

Interposed between the lower section of the globe and the base 12 is a cylindrical casing 18 rotatable with the globe and with respect to the base. Casing 18 is provided with a cylindrical projection 19 rotatable in a recess 20 formed in the upper part of the base 12. Extending upwardly through the base 12, casing 18 and terminating within the globe 10 is a tube 21 on which is mounted a platform member 22. The platform 22 and tube 21 are connected so that they turn together along with the globe thereby obviating disarrangement of the wiring. The tube is provided with a polygonal flange 23 which abuts against the underside of the upper wall of the base and depending therefrom is an enlarged extension 24 carrying three vertically spaced contact rings 25 with which contact elements 26 engage.

The wires from the contact rings 25 extend upwardly through the extension 24 and tube 21, certain of the wires extending outwardly therefrom to an electric motor 30, while others are connected to a socket of suitable type for a lamp 32. A wire bracket 33 is secured to the upper end of the tube 21 and extends on both sides of the lamp 32 to provide a support for a connecting device 34 which holds the two sections of the globe 10 in assembled relation. Bracket 33 has a threaded portion at its upper end which extends through an opening in the upper section of the globe 10 and receives the connecting device 34 in such manner that the bracket 33, globe 10 and casing 18 may be turned as a unit upon the base 12.

Mounted for relative rotation on the platform member 22 is a ring 41 to which are secured a plurality of upwardly and outwardly extending rods or arms 42. The upper extremities of arms 42 project through openings in ears 43 integral with the inner surface of an annulus or ring 44 of glass or other suitable translucent or transparent material. The ring 44 is vertically disposed with the walls thereof substantially parallel to the axis of the globe 10 and is arranged midway between the opposite ends thereof. The outer surface of the ring 44 is formed with calibrations, numbers and other indicia for designating the time. Thus, when the lamp 32 is lighted, the indicia on the ring 44 will be visible from the outside of the globe, the arrangement being such that the corresponding time in different parts of the world will be indicated. The map is ordinarily divided by lines of longitude into the different time zones to enable the time in different places to be readily observed.

The inside of the ring 41 is formed with an annular series of gear teeth 53 with which a pinion 45 meshes. Pinion 45 is mounted on a vertical shaft 54 having a bearing within a boss 55 integral with a plate 56 which is removably secured to and spaced from the platform member 22 and serving to locate the ring 41 on the platform. As shown, bolts within the ring 41 secure the plate 56 to the platform 22 in spaced relation. A suitable clutch 57 is interposed between parts of the shaft 54 to enable the ring 44 to be turned or adjusted independently of the upper portion of the shaft 54. Mounted on the upper end of the shaft 54 is a worm wheel 48 with which a worm 49 meshes. The worm 49 is fixed to a horizontally disposed shaft 60 forming an extension of the armature of the motor 30. The motor 30 and associated parts is preferably of sixty cycle

synchronous type as ordinarily used for electric clocks and therefore it is believed that further description thereof is unnecessary. The motor is shown suitably mounted on the platform 22 as by a depending supporting post.

The intermediate cylindrical casing 18 contains auxiliary or direct reading time indicating means of any suitable character. Such means has been illustrated as including a shell or body 62 of sleeve form interposed between a top or cover portion 63 and a base 64 which is provided with the projection 19. These elements are secured together by means such as bolts 65. A plurality of windows or openings 66, preferably three spaced equally, are provided around the circumference of the body 62 and through which indicia 67 are visible. The indicia are suitably applied to the outer surface of rings 70 and 71 mounted for continuous rotation within the casing 18. The rings 70 and 71 are formed with annular series of gear teeth 69 and 72 respectively. The teeth 69 mesh with a pinion 68 mounted near the lower end of the shaft 54, while teeth 72 mesh with a gear 72' of a suitable gear train to rotate the ring 71 ten times faster than the ring 70. Thus it will be apparent that the indicia on rings 70 and 71 are utilized to indicate the time in minutes by direct reading.

It will be readily understood that if so desired, a step by step or delayed action movement may be imparted to direct reading indicia by any suitable operating mechanism of that character, to replace the mechanism described. It will also be understood that by adding a third ring it would be possible to indicate the hour as well as the minutes should this be desirable. As the hour indicia on the ring 44 may be made of sufficient size to be readily visible, the additional ring in the casing 18 is not essential.

From the above description it will be clear that the electric motor 30 imparts turning movement to the ring 41, the arms 42 turning the time indicating ring 44 in the globe 10 and rings 70 and 71 in the casing 18 relative to the globe 10. When it is desired to inspect different parts of the globe, the same may be turned, turning the time indicating devices and associated parts with it. In order to make an adjustment in the relative position of the time indicating rings, shaft 54 is provided with an enlarged knurled portion 75, located outside of the globe and casing 18, by which the time indicating rings may be turned as desired in view of the clutch 57.

It is frequently desirable to use a manually operable globe clock, for example, for demonstration purposes. In such event the arrangement fragmentarily illustrated in Figure 3, may be utilized. A shaft 54' is provided with a pinion 45' meshing with the teeth of ring gear 41'. The upper end of the shaft has a bearing in the box 55' while the lower end of the shaft has an enlarged knurled portion 75'. By such an arrangement, ring gear 41' may be rotated by hand to indicate the correct time at a certain place, on the glass time indicating ring within the globe. Subsequent rotation of the globe, and with the lamp lighted, will indicate the corresponding time in other parts of the world.

It will thus be apparent that I have provided an arrangement which enables the globe to be used in the usual manner, and in addition provides a direct reading clock, the parts of which do not in any way interfere with the surface of the map. In addition the arrangement is such that close scrutiny of the time indicating means is unnecessary to determine the correct local time or the corresponding time in other parts of the world.

Numerous changes in details of construction, arrangement and operation may be effected without departing from the spirit of the invention, especially as defined in the appended claims.

What I claim is:

1. A combined terrestrial globe and clock including a base, a casing rotatable on said base, a translucent globe carried by said casing for rotation therewith, clock mechanism within said globe, time indicating means in said casing, and a driving connection between said clock mechanism and said time indicating means for operating the latter independently of globe rotation.

2. A combined terrestrial globe and clock including a base, a translucent globe, a casing between said base and said globe, clock mechanism within said globe, time indicating means in said casing, said casing being provided with an opening through which said time indicating means are visible, and an operative driving connection between said clock mechanism and said time indicating means.

3. A combined terrestrial globe and clock including a base, a translucent globe, an intermediate casing between said base and said globe, clock mechanism within said globe including a rotatable annular indicia bearing ring, means driven by said clock mechanism for rotating said ring, direct reading time indicating means in said casing, and an operative driving connection between said ring rotating means and said indicating means.

4. In combination, a base, a hollow translucent terrestrial globe rotatably mounted on said base, clock mechanism within said globe, time indicating means interposed between said base and said globe including direct reading time indicators, a driving connection including gearing between said clock mechanism and said time indicators, and manual means for adjusting said time indicators independently of clock mechanism operation.

5. In combination, a base, a hollow translucent terrestrial globe, a body interposed between said globe and base, time indicating means within said globe including a rotatable annular indicia bearing ring, additional time indicating means associated with said body, said additional time indicating means including a rotatable annulus coaxial with said ring, gear means interconnecting said indicia bearing ring and said rotatable annulus for concurrent operation, and clock mechanism connected to said gear means for operating the latter.

6. A clock comprising a base, a terrestrial translucent globe mounted on said base for turning movements, a support within said globe, a ring rotatably mounted on said support, an indicia bearing annulus supported by and rotatable with said ring, direct time indicating means interposed between said base and said globe, clock mechanism mounted on said support, a drive shaft between said ring and said direct time indicating means, a driving connection between said clock mechanism and said shaft, said driving connection including a clutch enabling turning of said shaft independently of said clock mechanism, and said shaft being manually operable from the exterior of said globe to adjust said time indicating means.

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