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LUMINOUS BALL

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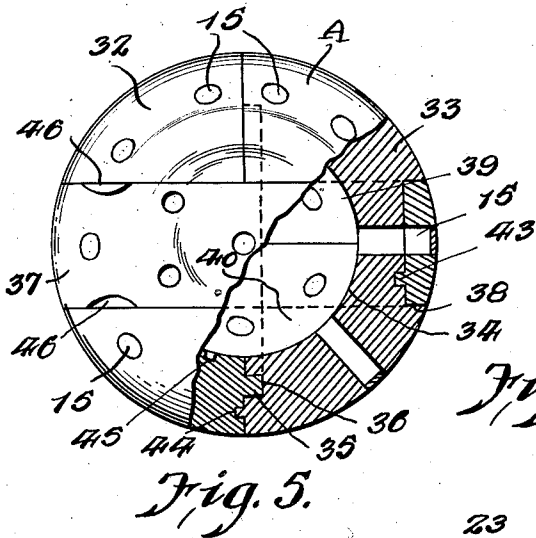


Fig. 5.

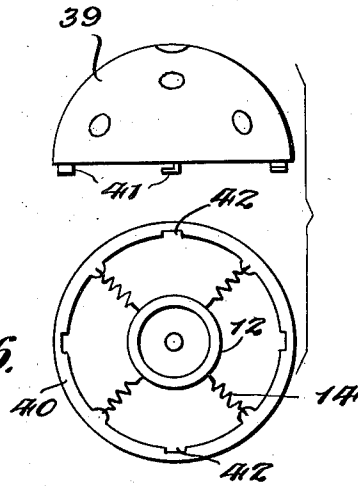


Fig. 6.

Fig. 7.

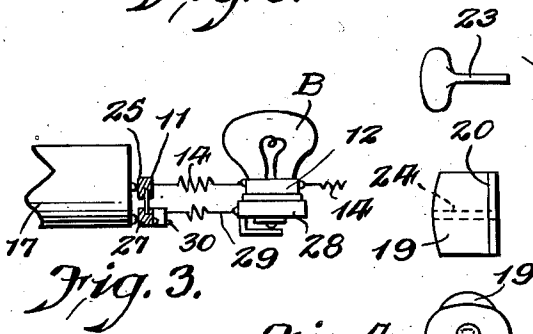


Fig. 3.

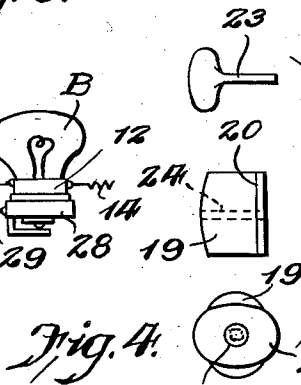


Fig. 4.

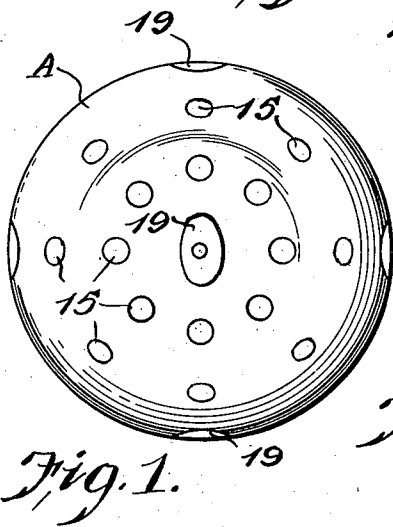
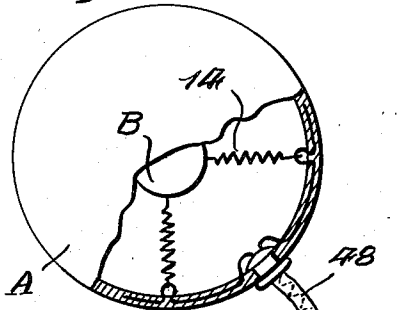


Fig. 1.

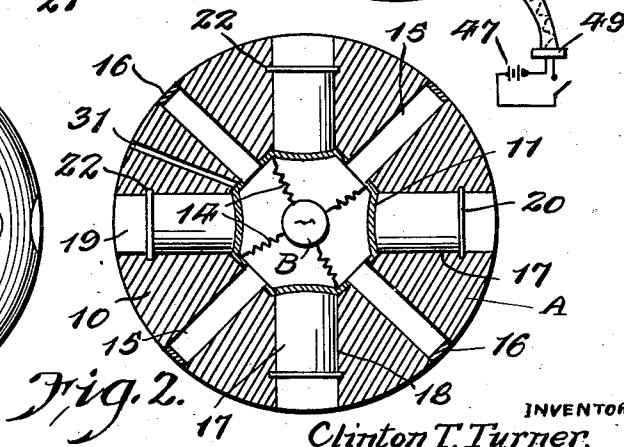


Fig. 2.

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# UNITED STATES PATENT OFFICE

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## LUMINOUS BALL

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4 Claims. (Cl. 240-6.4)

This invention relates to a luminous ball and in particular to a ball from which light is radiated.

Generally speaking, the purpose of the invention is to provide a ball with which games can be played at night. It is a well known fact that ball games cannot normally be played after dusk in the evenings due to one's inability to follow the path of travel of the sphere, and for this reason games of this character must cease with daylight. To overcome this difficulty, I have developed a novel and unique means of embodying within a ball, whether it be a hand-ball, tennis-ball, foot-ball, or otherwise, means for radiating illumination. Thus a ball may be readily observed at night and play permitted to extend into the darker hours of the evening.

One of the objects of the invention, therefore, is to provide a ball of this character wherein light rays, in suitable form, radiate therefrom.

Another object of the invention is to provide a ball of this character which may be subjected to extensive jarring without destroying the properties of the light source.

A further object of the invention is to provide a ball of this character wherein the source of light is embodied within the ball.

A still further object of the invention is to so construct a ball with flexible translucent material or form it with conducting passages through which light is radiated.

Yet a further object of the invention is to provide a ball of this character in which a source of energy may be attached to the ball through extension elastic means and thus provide what may be termed a "luminous return ball".

Having regard to the foregoing and other objects and advantages which will become apparent as the description proceeds, my invention consists essentially in the novel combination and arrangement of parts hereinafter described in detail and set forth in the accompanying drawing in which

Figure 1 is an elevational view of an embodiment of my improved ball.

Figure 2 is a sectional view taken through the center of the ball, disclosed in Figure 1.

Figure 3 is a detail of a mounting for a light means within the ball which includes a circuit.

Figure 4 are details of the battery retaining means together with locking key.

Figure 5 is a view, partly in section, of an embodiment of my invention which shows a ball constructed in separable sections.

Figure 6 illustrates the details of the light-

supporting core or socket supplied in the sectional ball in Figure 5, and

Figure 7 is a view, partly in section, of a luminous return ball having a source of energy connected thereto through flexible extension means.

Referring now to the drawing in which my improved ball is disclosed, and wherein like letters and numerals of reference indicate corresponding parts in the several illustrations, the letter A designates the ball as a whole which may be a hand-ball, tennis-ball, etc., while the letter B indicates the light retaining medium.

In general form, the ball is spherical and is composed of suitable flexible materials such as rubber or rubber provided with suitable protective covering, or of translucent rubber. The shell of the ball itself may be constructed of a single piece as illustrated in Figs. 1 and 7, or sectionally formed, as illustrated in Figure 5.

Referring now to the embodiment disclosed in Figure 1, this comprises a spherical shell or casing of flexible material within the center of which is mounted a core or bracket. This core or bracket is designed to resiliently support therein illuminating means in the form of an electric bulb or other similar means from which rays of light are radiated. The mounting of the light means may take several practical forms, and in the present instance I have illustrated the light supporting socket as being suspended centrally of the member by means of a series of springs, thus, when the ball is jarred either by being thrown by hand, bounced, or struck by an object, the lamp properties will not be destroyed by the jolt or repercussion. One means for conducting light rays to the exterior of the ball is effected by constructing the ball with a plurality of passageways, which communicate with the center of the ball and light source and the exterior of the ball. The number of passageways will, of course, be governed by the result desired.

To prevent dirt or other foreign matter or substances from entering the passages, the outer ends thereof may be covered with translucent rubber, as indicated at, or a translucent insert such as celluloid, which would be imbedded at and in the periphery of the ball. Such protective transparent or translucent covering for the passageways may be of various colors which would thus lend a novel and attractive appearance to the ball.

A source of energy for the illuminating means B may take several forms, and in the present instance I have indicated such source in the form of a series of dry batteries inserted in aper-

tures or recesses 18 and held therewithin by means of a flexible plug 19. The battery and the plug in the present instance are illustrated as of oval formation, and such formation not only prevents axial movement of the battery but provides cam-like means for the plug for locking the battery within the sphere. The locking or cam-like means referred to comprise a disc member 20 pivotally mounted as at 21, when in position, in the recess 22, the locking of the cam is effected by key member 23 which is insertable in the slot or passageway 24 of the plug 19.

Energy for the bulb B is provided through the series of batteries 17 as previously referred to. When inserted in its aperture or recess, one terminal of the battery contacts with the upper portion 25 of the core or bracket 11 which is insulated, as at 26, from the lower portion 27, the lower portion contacting with the opposed terminal of the battery. Thus, the current may flow from the battery to the upper ring 25, through supporting spring 14, and bulb, and then, by way of the insulated socket 28 and conductor 29, to the lower ring 27 and battery, which completes the circuit. Preferably, the batteries are arranged in parallel and in this manner lessen the drain of energy therefrom.

Any convenient form of switch means may be employed for switching off and on the current and I have illustrated a switch 30 associated with the member 27 and conductor 29 which may be operable by a suitable key inserted in key-way or orifice 31. (See Figs. 2 and 3.)

As previously mentioned, the ball disclosed in Figure 5 is formed in separable sections, as indicated at 32 and 33, which, when joined, form a hollow center 34 and, as illustrated, the section 32 is provided with an annular tongue 35 which engages the annular groove 36 in the section 33. Means for retaining the separable sections in a fixed position comprise a flexible band 37 which engages the annular recess 38 formed in the exterior of the sections. The lamp supporting core which is adapted to fit the hollow center 34 is also sectionally formed, and comprises sections 39 and 40. The interior of the core is highly polished or mirrored to enable it to strongly reflect light rays therefrom. Means for detachably connecting these sections include a series of fingers 41 associated with the section 39 which engage the slots 42 in the section 40. Suspended in the center of the member 40, through spring members 14, is a socket retaining member 12.

It is important in the sectionally constructed ball that the light radiating orifices, not only in the respective outer portions of the ball, but the supporting casing therewithin, be in register when the ball is assembled. This may be effected by providing the band 37 with a projection 43 and the outer shell with the projection 44 and the supporting core with the projection 45. Thus, with these projections, when the ball is assembled, all the light communicating passages will register with the other. To enable the flex-

ible band 37 to be readily removed, I provide the sides thereof with indentations or the like 46.

In the illustration shown in Figure 7, the source of energy, a battery 47 in miniature form, may either be carried in the pocket or strapped to the wrist, and the conductors therefrom extend through the elastic extension member 48 to the light means B, thus the operator of the ball may retain one end of the extension indicated at 49 in the hand, and the ball in luminous form may be bounced as is done with what is termed a "return ball". It will also be understood that this particular type of ball may be constructed of semi-transparent or translucent material of a flexible nature and colored in various shades.

From the foregoing it will be seen that I have developed a novel, practical and unique ball which may be clearly observable when in play at night, and one that will withstand severe jarring. It will be understood also that many changes may be made in the construction and arrangement and many apparently widely different embodiments constructed within the scope of the claims without departing from the spirit thereof; it is intended, therefore, that the accompanying matter be interpreted as illustrative rather than in a limiting sense.

I claim:—

1. A ball of the character described comprising a flexible shell or casing, a supporting member mounted within the casing, a source of illumination resiliently carried by the supporting means, means for supplying energy to the source of illumination and means for reflecting light rays from the source of illumination to the exterior of the ball.

2. A ball of the character described comprising a flexible casing or shell formed with a hollow core, a member resiliently supporting illumination means in the core, means for supplying energy to the source of illumination, locking means for detachably connecting the energy means in the casing, and means for communicating light rays from the source of illumination to the exterior of the ball.

3. A ball of the character described comprising a flexible shell or casing formed with a series of light communicating passages, a source of illumination resiliently supported within the casing, a plurality of means for supplying energy to the source of illumination, means for detachably retaining the energy means in the casing and operable switch means for controlling the flow of energy to the illuminating means.

4. A ball of the character described comprising a flexible shell or casing formed in separable sections, a source of illumination mounted within the casing, means for resiliently supporting the source of illumination, flexible band means for retaining the separable sections in position, and means for conducting light rays from the source of illumination to the exterior of the ball.

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