

## THE " RASK " ELECTRICAL BEACON LAMP

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The following Specification of the RASK BEACON LAMP has been supplied by the manufacturer, C. RASK, Orient Buildings, Station Road, Fleetwood, Lancashire, England, at the request of the Directing Committee. These lamps, which were originally designed as Buoy Lights for the use of Fishermen, have been used by the Hydrographic Service of Great Britain for lighting floating beacons moored in positions where they would be liable to be damaged by passing steamers, and have proved to be a great success. (On one occasion a lamp attached to a damaged beacon was found to be still functioning correctly after having been submerged for several hours).

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This invention has reference to marine signal lights of the kind in which electric flashing signals are produced, the signals or flashes adapted to be produced automatically by the rise and fall of the buoy due to waves.

In this apparatus, the glass cover or case within which the electric bulb light is contained is of globular form, and provided at its base, which is of relatively large diameter, with an external screw thread; whilst the buoy body is provided at its upper part with an internally threaded neck ring, into which the threaded lower part of this glass globe screws; a rubber or equivalent joint-making material being inserted in the neck or ring of the body, on which the lower edge of the threaded part of the globe presses when screwed in, so that a close and secure watertight joint is effected.

Further, the casing or part in which the electric light bulb is fitted, (screwed or pressed), is in the form of a long metal neck secured at its lower edge to the upper part of the buoy, and tapering in an inclined or curved manner towards the socket in which the spigot or base of the lamp fits; and the surface of this neck is silvered or made bright, and acts as a reflector of light, thereby intensifying the amount of light emitted, and rendering the buoy more visible generally.

The hollow glass cover or globe is constructed so as to constitute a circular lens, the glass being of varying thickness at different parts or points, and relatively thick to produce a lens effect; it thus augments or intensifies the amount of light emitted in the manner of a lens lantern.

With regard to the electric lamp, this has a multiple filament, i.e. two or more filaments arranged in parallel, and connected to common terminals, by which means the degree of light emitted is increased, and at the same time if one of the filaments is destroyed, the other will still continue to function and emit light.

By this invention metal guards or the like outside the electric lamp are dispensed with, and thus the rays of light are not interfered with or cut in any way; that is to say, it is clear all round, and unobstructed.

In this apparatus not only is the globe enclosure of the electric lamp in the form of a lens, producing an augmented emission of light, but also being thick and strong it requires no guard, being in fact a guard in itself.

The electric battery is contained in a lower vessel of the buoy, whilst in another vessel above, which is a separate part but is attached to the lower vessel, the circuit make and break mechanism is enclosed; and this comprises a light spring carrying a weight and contacts, and as the apparatus rises and falls by the movement of the waves, the weight will oscillate and close and open the electric circuit in which the electric lamp is placed, so that the lamp is alternately put in and out of illumination automatically by the vertically oscillating weight.

A cam may be used in connection with the electric mechanism, so as (i) to prevent the contacts from closing, or (ii) to short-circuit the contacts, by pressing the spring against a fixed contact, or (iii) to allow the device to operate normally.

If desired, where applicable, this light apparatus may be used under water, as it is completely water-tight.

The invention, the nature of which is above described, is illustrated in the accompanying drawing showing the lamp in elevation, the upper part being in section.

Referring to the drawing, 1 represents the upper portion or cone of the lamp body in which the operative or moving parts are located, and 2 is the strong glass cover or globe within which the electric light bulb 3 is placed.

The body part 1 in the case shown is of the form of a truncated cone; and on the upper part of it is placed and fixed the internally threaded neck ring 4 into which is screwed the externally threaded base 5 of the globe 2.

The neck ring is provided at its base with an annular recess in which is placed a rubber or like joint-making or sealing ring 6, and from the inner part of the annular recess in which is the joint ring 6, a neck 7 rises up in a conical manner, tapering inwards towards its upper end; the central portion 8 of the cone 1 also extends upwards in an inclined manner, and close to it comes the lower inner portion of the neck ring 4; and the socket 9 for the electric lamp 3 is formed in the upper part of the part 8.

The protector globe 2, is of thick glass, as stated, and therefore strong, and the part 2x of it, which is about in the plane of the electric lamp 3, is in the form of an annular lens, as already indicated, so that the effective light emitted by the apparatus is intensified, and therefore it can be the more readily seen by the fishermen.

The globe 2 is of relatively large diameter, as indicated, that is to say its outside diameter is such that its wall is a relatively large distance from the lamp proper 3, and its diameter relative to the body of the lamp is indicated by the drawing.

The neck parts 4, 7 are of metal, and the exterior surface of the upwardly coned neck 7 is silvered or rendered bright, and constitutes an annular conical or tapered reflector; being of this form and arranged as described, the light of the lamp is reflected to the globe lens and thereby the effectiveness of the lamp is generally intensified.

With regard to the mechanism by which the lamp is alternately put in and out of illumination by the rise and fall of the waves, this mechanism is carried on a framework base 10 of insulating material which is secured to a plate 11 at each side of the dome 1, these plates being fitted and held in an outwardly projecting groove 12 formed in and by the metal of the base of this dome, the base 10 being secured to the plates 11 by bolts and nuts 13. Between this outwardly projecting part 12 and a roll 14 formed on the upper end of the body base 15, in which an electric storage battery 16 is carried, is a joint-making ring 17.

The circuit wires between the lamp 3 and the storage battery 16 are marked 18 and one wire is attached to one of the terminals 19 of the battery 16, the return wire being attached to the other terminal 19x of the battery; the automatic circuit opening and closing device is in the latter part of the circuit.

This device consists of a weight 20 carried on the end of a corrugated vibratory spring 21, which is long and highly vibratory and is fixed by the bolt 22 to the base 10; and the weight 20 has upon it a spring contact part 23, which operates in connection with the downwardly bent part 24x of the spring contact 24, the latter being fixed to the base plate 10 on any suitable way and having one of the wires 18 connected to it.

Thus in action, as the lamp rises and falls, through the inertia of the weight 20 and its highly flexible carrier spring 21, the point of the spring contact 23 will be moved up into contact with the end 24x of the spring contact, 24, and conversely away from it.

For putting the lamp in and out of action positively, a cam 25 is employed, which is carried on a rotatable shaft 26 suitably supported in brackets carried on the plate 10, one of which brackets, 30, is shown in the drawing; this cam is so arranged that when turned it acts on the top of the spring 21 and presses it down, and if it is turned half a revolution, the spring 21 will be moved down on to the upper edge of a metal part 27, which is part of two side members 27x attached at their inner ends to the outer edges of the spring contact plate 24 which may be of considerable width.

Thus, when this action takes place, the circuit will be closed and kept closed, as the projecting contact 27 will be kept in contact with the spring 21; but when the circuit is to be completely opened, then the cam 25 will be only revolved part of a revolution, so that the spring point 23 will be out of contact with the contact 24x, and also the spring 21 will be out of contact with the part 27.

The operating part of the shaft 26 and the cam 25 consists of a lever 28 on the same spindle 26, having an actuating knob 28x on it, and (above) a pointer 29, and this lever and pointer may move over a dial constituting the upper part of the bracket 30 on the further side of which the pointer as well as the lever 28 works, so that the condition of the internal operative parts will be indicated by the pointer in its position over the dial of the bracket 30.

In the side of the dome 1, adjacent to the bracket 30 and the dial thereon, is an





opening, normally closed by a screw or like stopper of any common type, by the unscrewing and removal of which the lever 28 inside the dome can be reached by the finger and thumb and operated.

The dome 1 and the base 15 are secured together by angle brackets 31 fixed on these parts, and held together by thumb screws 32 as indicated by the drawing; and the lamp is carried by a handle 33, attached to the upper ends of the upper brackets 31.

The lamp will burn as a Fixed Light for 96 hours or as a Flashing Light for 180 hours with two lights, or for a longer time if only one bulb is used. (An improved bulb containing two independent filaments, equal in candle power, burning capacity and safety to two bulbs, is now fitted in the single bulb lamp).

A label on the battery shows the correct specific gravity of the acid to be used.

