

(12) **UK Patent Application** (19) **GB** (11) **2587403** (13) **A**

(43) Date of A Publication **31.03.2021**

(21) Application No: **1913961.7**

(22) Date of Filing: **27.09.2019**

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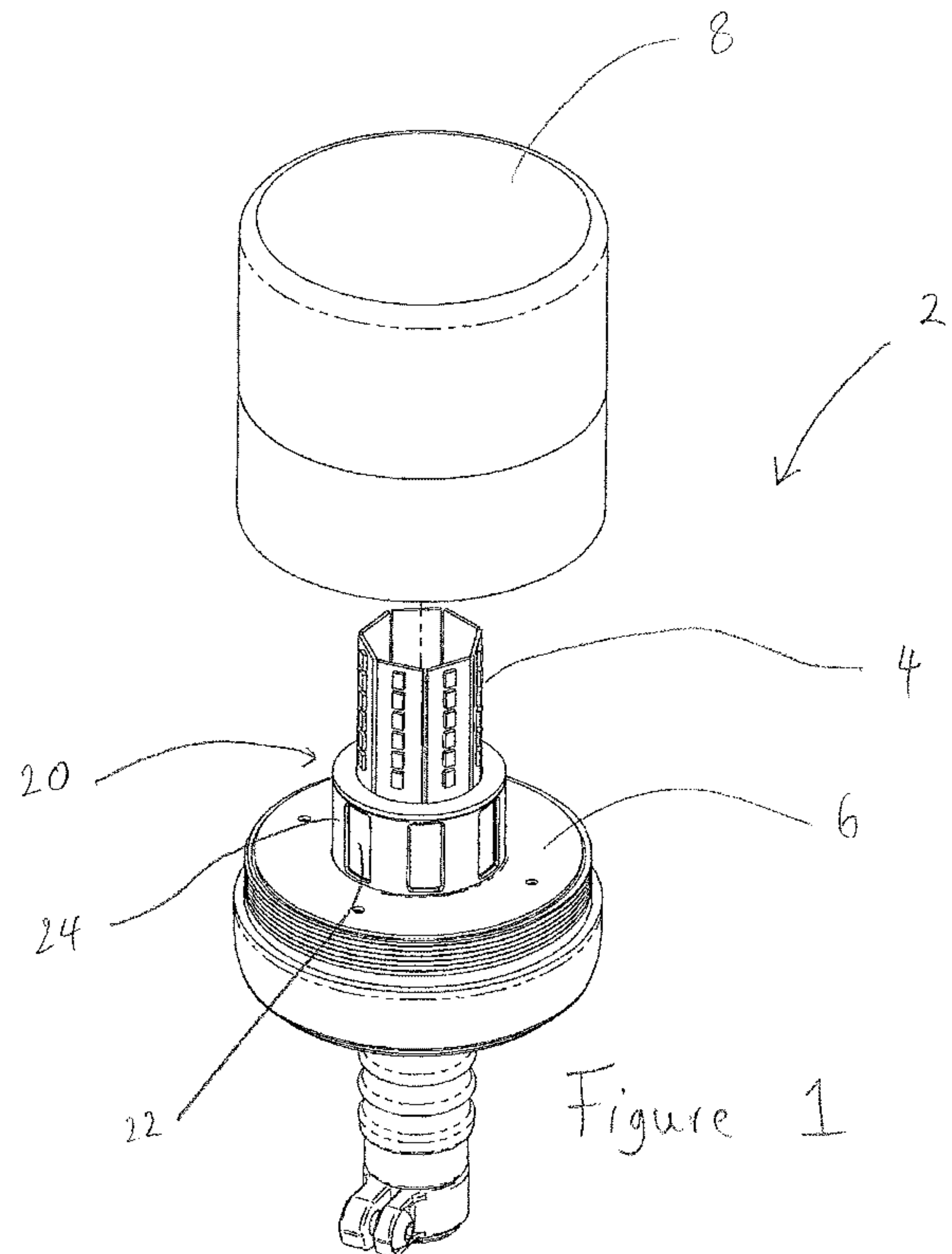
(51) INT CL:
B60Q 1/26 (2006.01) **F21S 10/06** (2006.01)

(56) Documents Cited:
GB 1179716 A **CN 104595839 A**
US 20120182730 A1 **US 20100244748 A1**

(58) Field of Search:
INT CL **B60Q, F21S, F21V**
Other: **WPI, EPODOC**

(54) Title of the Invention: **Vehicle Beacon**
Abstract Title: **Vehicle beacon**

(57) A beacon device a light source unit for providing a first source of light having a first colour of emitted light from a first portion of the light source unit and a second source of light having a second colour of emitted light from a second portion of the light source unit; and a barrier arranged to be in a first or a second configuration, wherein, in the first configuration, the barrier blocks light from the first portion from exiting the device, and in the second configuration, at least some of the light from the first portion passes through the barrier. The device can be actuated to open the barrier to allow emitted light passing through the filter to exit the device.



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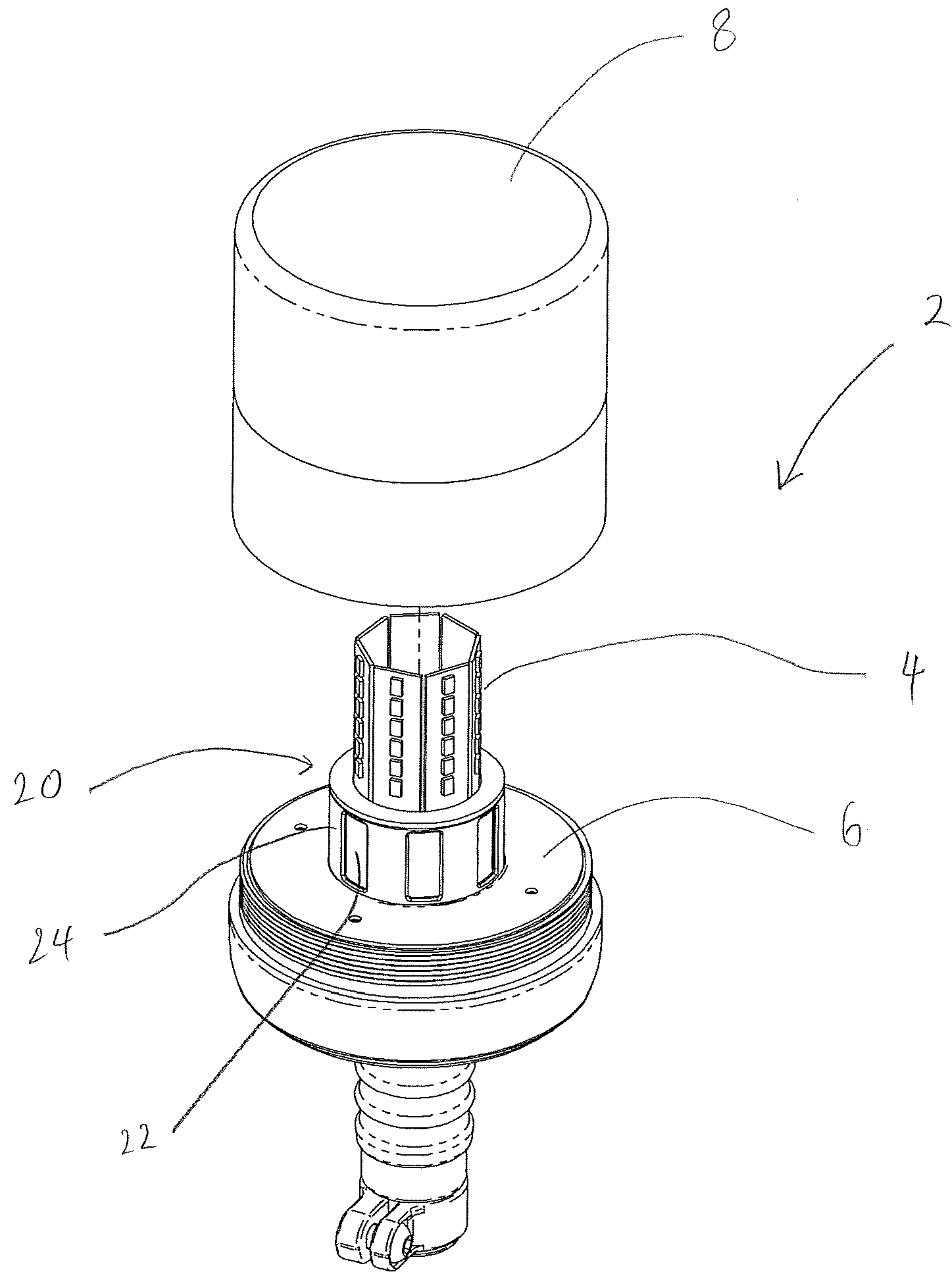


Figure 1

2/3

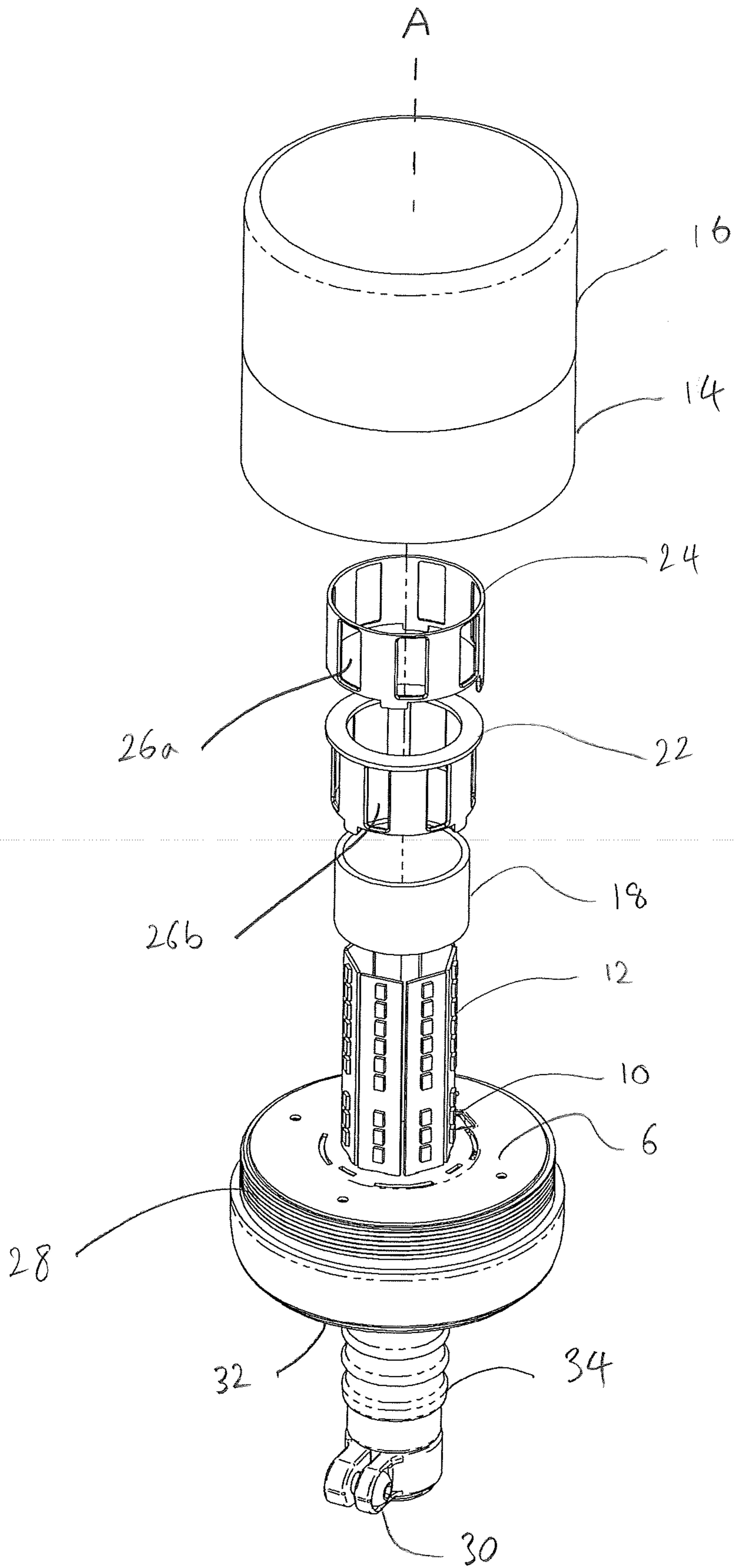


Figure 2

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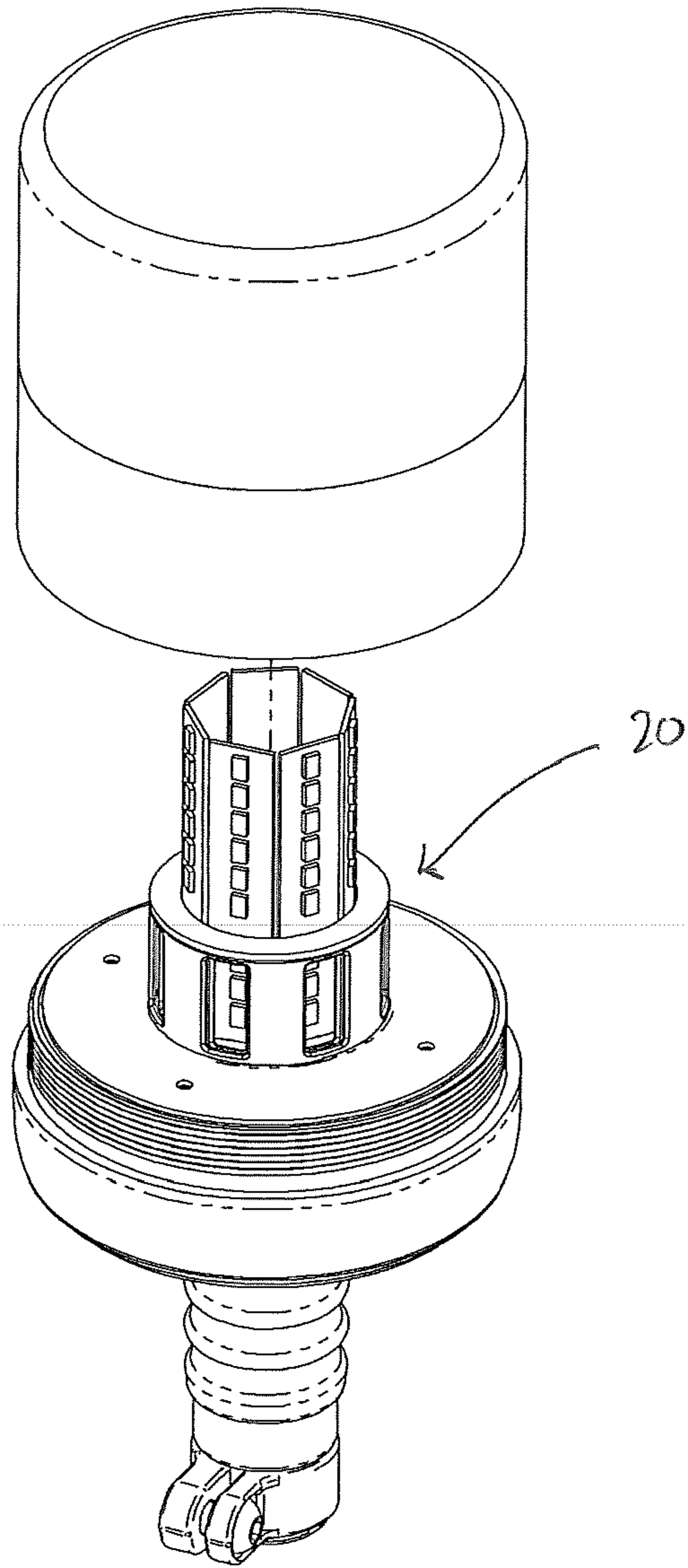


Figure 3

VEHICLE BEACON

This invention relates to a vehicle beacon and more particularly a beacon capable of producing light of a particular colour, but which is can be selectively prevented from being
5 seen.

Background of the Invention

In certain parts of the world, regulations dictate that vehicles that cannot exceed a
10 particular speed must be fitted with beacons that project a flashing amber light. Typically, these vehicles include those involved with breakdowns, refuse collection, road maintenance, farming, and construction sites.

Many of these types of vehicles are also operated in an 'off-road' type scenario, i.e. not on
15 roads used by the public, for example construction sites or industrial complexes. When 'off-road', operators of these vehicles often fail to fasten their seat belt, which is hazardous, both to the operator and to nearby persons.

One approach to facilitate operators of these vehicles fastening their seat belts is for the
20 site management to require the vehicle to display a green light when the operator has fastened their seat belt.

However, having these green beacons fitted to the above vehicles on public highways is
25 not permissible as regulations dictate that a green light is reserved for certain other road users' vehicles. Furthermore, any green showing on a beacon mounted on a vehicle not in the approved class is prohibited and should not be visible by any other road users when these vehicles are using a public highway.

The present invention aims to overcome or at least ameliorate one or more of the problems
30 set out above.

Summary of the Invention

In a first aspect of the invention, there is provided a beacon device comprising: a light
35 source unit for providing a first source of light having a first colour of emitted light from a

first portion of the light source unit and a second source of light having a second colour of emitted light from a second portion of the light source unit; and a barrier arranged to be in a first or a second configuration, wherein, in the first configuration, the barrier blocks light from the first portion from exiting the device, and in the second configuration, at least some of the light from the first portion is not blocked by the barrier. . In this way, at least some of the light from the first portion can pass through the barrier so that the device can emit a first and second emitted light and prevent the emission of the second emitted light.

The barrier may comprise a moveable portion moveable between a first and second position, corresponding to the first and second configuration respectively, to allow or block the passage of light emitted from the first source. This allows a simple and cost effective mechanical arrangement to allow or block the passage of a portion of the emitted light from exiting the device.

Preferably, the barrier further comprises a fixed portion, surrounding the first portion, having at least one aperture, such that, in the first configuration, light emitted from the first source is able to pass through said at least one aperture but is obstructed by the moveable portion from exiting the device, and, in the second configuration, light emitted from the first source is able to pass through said at least one aperture and exit the device without being obstructed by the moveable portion. This allows a simple and cost-effective mechanical arrangement to allow or block the passage of a portion of the emitted light from exiting the device.

Advantageously, the light source unit includes a primary light source and a filter, interposed between the barrier and said primary light source, wherein said first source of light is provided by light from the primary light source passing through said filter. In this way, a single colour light source can be used, i.e. a white LED, instead of first and second coloured LED's, and a filter can act to provide a first colour of light, different from the colour of the light source, allowing the manufacture of a relatively cheaper device. The filter cannot be seen, by a user viewing the device externally, when the barrier blocks light from the first portion exiting the device.

Favourably, in the first configuration, the barrier surrounds the filter. In this way, most of the filtered emitted light is able to be blocked by the barrier.

Preferably, a second filter is provided, and the second source of light is provided by light from the primary light source passing through said second filter. In this way, a single colour light source can be used and the second filter can provide a second colour of light, different from the first colour and the colour of the light source, allowing the manufacture of a relatively cheaper device.

Advantageously, the light source is arranged to emit substantially white light. In this way, the first and second filters are able to produce first and second colours of emitted light different from the white colour of the light source.

Preferably, the filter forms part of the barrier.

Favourably, the light source and barrier are contained within a housing. In this way, ingress of debris into the beacon filter device can be mitigated, preventing any potential damage by the debris to the electrical components of the light source.

Preferably, the housing has a first housing element and a second housing element which surround the first and second portions of the light source respectively. In this way, most of the emitted light from the first and second portions of the light source passes through the first and second area of the housing respectively. This is useful if the first or second areas of the housing are acting as filters, as most of the emitted light is filtered.

Advantageously, the first filter may substantially surround the first portion of the light source, and the second filter may form the second area of the housing. In this way, only one filter is required and the second housing element is the filter. This may result in a relatively cheaper and simpler design to manufacture.

Favourably, the first filter is the first colour and the second housing element produces the second colour of the emitted light from the second portion of the light source unit. In this way, the device may emit a first and second colour of filtered emitted light.

Preferably, the first and second filter may surround the first and second portions of the light source respectively, and the second filter may be contained within the housing. In this way, most the emitted light from the first and second portions of the light source is filtered by the first and second filter.

Advantageously, the first filter may be the first colour, the second filter may be the second colour and the second housing element may be substantially clear. In this way, the second housing element does not act as a filter.

5

The barrier may form the first housing element.

Favourably, the first housing element may be substantially clear. In this way, the first area of the housing does not act as a filter.

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Preferably, the first portion of the light source unit is controlled independently from the second portion of the light source unit. In this way, a user of the device has relatively better control of the light source. In particular, the first colour of filtered emitted light can be controlled independently from the second colour of filtered emitted light.

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Advantageously, a user input is provided for selectively switching the barrier to be in the first or the second configuration. In this way, a user of the device can determine whether to allow emitted to pass through the barrier and thus be emitted and/or seen from an external view of the device.

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Preferably, the primary light source may include two separate lighting elements, one of the lighting elements being used to provide emitted light from the first portion of the light source unit and the other lighting element being used to provide emitted light from the second portion of the light source unit. In this way, two separate light sources can be used to produce the emitted light from the two different portions of the light source unit.

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Brief Description of the Drawings

Embodiments of the invention will now be described by way of example, with reference to the drawings in which:-

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Figure 1 is a perspective view of the beacon filter device showing inside the housing;

Figure 2 is an exploded view of the beacon filter device; and

Figure 3 is the same view as Figure 1 showing the shutter in the open position.

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Detailed Description

An embodiment of the present invention is described below. Figure 1 shows an embodiment of the beacon filter 2 device. In this embodiment, the beacon filter device 2
5 comprises a light source 4 mounted to circular base plate 6. A housing 8 is mounted to the base plate 6 such that it contains the light source 4. In this way, ingress of debris into the beacon filter device 2 can be mitigated, preventing any potential damage by the debris to the electrical components of the light source.

10 The beacon device 2 is preferably used in conjunction with vehicles and/or machinery. In particular, the device 2 is used with vehicles such as a road clearance vehicle; a vehicle constructed or adapted for the purpose of collecting refuse; a breakdown vehicle; a vehicle having a maximum speed not exceeding 25 mph or any trailer drawn by such a vehicle; a vehicle having an overall width (including any load) exceeding 2.9m; a vehicle used for the
15 purposes of testing, maintaining, improving, cleansing or watering roads or for any purpose incidental to any such use; a vehicle used for the purpose of inspecting, cleansing, maintaining, adjusting, renewing or installing any apparatus which is in, on, under or over a road, or for any purpose incidental to any such use; a vehicle used for escort purposes when travelling at a speed not exceeding 25 mph; a vehicle used by the Commissioners
20 of Customs and Excise for the purpose of testing fuels; a vehicle used for the purpose of surveying; and a vehicle used for the removal or immobilisation of vehicles in exercise of a statutory power or duty. In other words, the device 2 is preferably used with 'regulated' vehicles, whereby the term 'regulated vehicle' infers one of, but not limited to, the above examples of vehicles that typically use conventional beacon devices.

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The light source 4 forms part of an electrical circuit and is powered by a battery means. The electrical circuit of the light source 4 is configured such that the light source emits light when the battery means provides power to the light source 4. When powered, the light source 4 emits light periodically, or 'flashes', for providing a visual warning sign to persons
30 in the immediate surroundings of the device 2. In some cases, a user may be able to control the output of the light source 4 such that user-preferred waveforms of light can be emitted. Where the device 2 is used with a regulated vehicle, the battery means is the battery of the vehicle, and where the device 2 is used with machinery, the battery means is a battery of the machinery. In either case, switching the regulated vehicle, or machinery,
35 'on' would provide power to the device 2, causing the light source 4 to emit light.

The light source 4 may be a single light source, such as an incandescent light bulb, fluorescent light bulb/tube or LED light source. Alternatively, as in this embodiment, the light source may comprise a plurality of light sources, such as a plurality of LED light bars mounted with respect to the one another in a cylindrical fashion such that the light source 4 may emit light radially. In some cases, there may be other physical arrangements of the light bars with respect to one another or there may only be one light bar. The light bar may be any other such suitable means that emits light on the application of electrical power. However, using the above LED lightbar arrangement allows for a lower power and cost device, with respect to more complex arrangements, reducing the cost of manufacture of the device 2.

Preferably, the light source 4 emits substantially white light, but in other embodiments may emit other colours of light. The colour of the light emitted by the light source 4 can be determined by the choice of LED. Where white light is used, the colour can be manipulated by colouring the housing 8. So, if an amber colour is required, the light source can be amber and a clear housing can be used, or the light source can be white, and the housing can include an amber tinted portion. Alternatively, filters may be interposed between the light source and the housing to colour the light.

In this document, the word clear means non-coloured. For example, a clear housing means a housing that is non-coloured such that the wavelengths of a light passing through the housing are not filtered by the housing.

As illustrated by Figure 2, a first and second portion 10, 12 of the light source 4 can be defined, whereby the first portion 10 corresponds to a lower portion of the light source 4 (i.e. proximate to the base plate 6), and the second portion 12 corresponds to the upper portion of the light source 4 (i.e. top end of Figure 2). The housing 8 has a substantially cylindrical shape and comprises a lower and upper portion 14, 16. The light source 4, base plate 6 and housing 8 are coaxial, and when the housing 8 is mounted to the base plate 6, the lower portion 14 and upper portion 16 substantially correspond, spatially, to the first portion 10 and second portion 12 respectively such that emitted light from the first portion 10 of the light source 4 substantially passes through the lower portion 14 of the housing 8, and emitted light from the second portion 12 substantially passes through the upper portion 16. The housing 8 is a substantially transparent or translucent material such

that light passing through the housing 8 may exit the device 2 into the ambient environment and be viewed by nearby persons.

5 An annular filter 18, concentric with the light source 4 and base plate 6, is mounted to the base plate 6 and has a diameter such that it substantially surrounds the first portion 10 of the light source 4. Light emitted from the first portion 10 of the light source 4 substantially passes first through the filter 18 first, before passing through the lower portion 14 of the housing 8 and into the ambient environment. In some cases, the filter 18 may be mounted to light source 4 instead of the base plate 6 or both.

10

In this document, the phrase 'surrounds' means to substantially enclose, 'close off' or encircle the majority of an element such that the majority of light travelling from the element travels towards and contacts the surrounding member. For example, the filter 18 surrounding the first portion 10 infers that the majority of light travelling from the first portion 15 10 will travel towards and contact the filter 18.

A shutter 20, concentric with the light source 4, base plate 6 and filter 18, is mounted to the base plate 6 and has a diameter such that it substantially surrounds the filter 18, but is located within the housing 8. The shutter 20 comprises an annular fixed portion 22 with 20 apertures 26b, which mounts the shutter 20 to the base plate 6, and an outer annular moveable portion 24 with similar apertures 26a. The moveable portion 24 is configured for rotation about a central axis of the device 2 (i.e. centre axis A of Figure 2), preferably, using a motor (not shown). In other embodiments, any such suitable rotation means other than a motor may be used such that the moveable portion 24 is able to be rotated, e.g. a 25 solenoid.

The base plate 6 has threading 28 which allows connection of the housing 8 to the base plate 6 via corresponding grooves on the housing 8. In other embodiments, any such suitable means for connecting the housing 8 to the base plate 6 may be used, for example 30 adhesive. In further embodiments, the base plate 6 and housing 8 may have shapes other than circular and cylindrical respectively. However, the cylindrical shape of the housing 8 allows optimal radial projection of light emitted by the light source 4 to exit the device 2.

The device 2 further comprises an attaching means 30 mounted to a bottom face 32 of the 35 base plate 6, i.e. opposite the face of the base plate 6 the light source 4 is mounted to, via

a shaft 34. The attaching means 30 enables the device 2 to be attached to a regulated vehicle, or machinery, and the shaft 34 houses electrical connections between the light source 4 and vehicle, or machinery.

5 In some embodiments, there may be no shaft 34 and the attaching means 30 may be attached directly to the bottom face 32 of the base plate 6 and the above described electrical connections may pass directly through the bottom face 32. In other embodiments, the shaft 34 may be actuated such that its axial length may be varied dynamically.

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The moveable portion 24 of the shutter can be rotated between a first position, where the apertures 26a, 26b of the portions 22, 24 align to allow emitted light passing through the filter 18 to pass through the shutter 20, and a second position, where the apertures 26a, 26b of the portions 22, 24 are offset. In this way, light emitted and passed through the filter 18 is prevented from passing through the shutter 20. In this way, the shutter 20 can be actuated to either, in a first position, allow filtered emitted light from the first portion 10 to exit the device 2 via the lower portion 14 of the housing 8, and thus pass into the ambient environment, or, in a second position, prevent said filtered emitted light from exiting the device 2. Figure 1 illustrates the shutter 20 in the first, or 'closed', position and Figure 3 illustrates the shutter 20 in the second, or 'open', position.

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In other embodiments, the moveable portion 24 may not have apertures and may not rotate. For example, the moveable portion 24 may include a series of blinds which are actuated to rise up from within the base plate 6, to close the apertures 26b in the fixed portion 22. Here the moveable portion 24, in the closed position, is extended from within the base plate 6 'blocking' the apertures 26b of the fixed portion 22 to prevent filtered light exiting the device 2, and in the open position, is retracted into the base plate 6 'unblocking' the apertures 26b, to allow filtered light to exit the device 2.

25

Light emitted from the second portion 12 of the light source 4 exits the device 2 freely, whereas light emitted from the first portion 10 is first filtered by the filter 18 and then controlled from exiting the device 2 via the shutter 20. The shutter 20 is made from a substantially opaque material. It acts as a light barrier preventing light from passing through it in the closed position and allowing light to pass through it in the open position.

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The lower portion 14 of the housing 8 is clear, whereas the upper portion 16 is an amber colour. Here, the colour of the light passing through the lower portion 14 is substantially unfiltered by the housing, whereas the colour of the light passing through the upper portion 16 is filtered to the same colour as the upper portion 16, which in this case is an amber colour. The filter 18 is a green colour such that light passing through it is filtered to a green colour. In this way, light emitted from the first portion 10 of the light source 4 is filtered, by the filter 18, to produce a green light that exits the device 2 as such, as it is not filtered further by the lower portion 14 of the housing 8. Light emitted from the second portion 12 of the light source 4 is filtered by the upper portion 16 of the housing 8 to produce an amber light that exits the device 2 as such – the upper portion 16 of the housing is essentially a second filter.

With the device 2 powered by a regulated vehicle, or machinery, and the shutter 20 in the closed position, amber light is emitted from the device 2. The shutter 20, in particular the moveable portion 24, can then be actuated to the open position to allow, or ‘un-block’, the green light to be emitted from the device 2. In this case, i.e. the open position, both amber and green light is now emitted from the device 2.

The actuation of the shutter 20 between the open and closed positions is preferably controlled by a user. Preferably, the user controls the actuation of the shutter 20 upon enabling the ignition of a vehicle, and subject to a particular start sequence. In one example, actuation of the shutter 20, and thus generation of green light, is achieved via a control circuit in the device 2 that is powered from the ignition circuit of the vehicle via a pair of switches in series. The first switch is switched by engagement of the seat belt, i.e. a user fastening their seat belt, and the second switch can be operated by a user, i.e. by a button, to allow the control circuit to receive a control signal to actuate the shutter 20, from the closed position into the open position, once the ignition of the vehicle has been enabled. In this case, the sequence for generating green light is: 1) plug in seatbelt; 2) turn on the ignition of the vehicle; and 3) press “green light” switch. In other embodiments, there may be other sequences for actuating the shutter 20 and generating green light.

Further, the device is preferably arranged so that the user must carry out the above start sequence within a pre-determined time period, starting from the enabling of the ignition of the vehicle, to allow actuation of the shutter 20. If the user fails to carry out the start sequence within the pre-determined time period, for example 20 seconds, actuation of the

shutter 20 is no longer possible. In the above exemplary start sequence, switching the second switch, i.e. the “green light” switch, after the pre-determined time period will not cause actuation of the shutter 20. Here, a user is prevented from being able to activate the green light after the pre-determined time period has expired and must disable and re-
5 enable the ignition, and carry out the start sequence within the pre-determined time period, to active the green light, thereby preventing inadvertent use of the green light on public roads. In other embodiments, the user might be required to carry out the start sequence before performing a pre-determined action on the vehicle, such as engaging the throttle, after ignition.

10

Once activated, it is not necessary for the operator to hold the “green light” switch, to keep the green light on. Once the ignition is disabled, the power is removed and the green light is disabled and can only be re-enabled once the ignition is turned on again and the switch is pressed by the user. In this way, if the operator turns off the vehicle whilst the green
15 light is active, and then gets back into the vehicle before proceeding onto a public road, the green light will not be active, unless they press the button, also preventing inadvertent use of the green light on public roads.

As the shutter 20 is arranged to be closed when no power is supplied to the device 2, in
20 the event of a power failure, to the device 2 or the vehicle, no green light will be emitted or seen from the device 2. This arrangement ensures a failsafe such that no green light is inadvertently seen from the device 2 during a power failure.

In some embodiments, the portions 10, 12 of the light source 4 may be controlled
25 independently. For example, the first portion 10 of the light source 4 may be controlled separately from the second portion 12 of the light source 4. In this way, the first and second portions 10, 12 of the light source 4 can emit light independently of one another. In this case, the first portion 10 of the light source 4 would be controlled for emitting light from the device 2 in a first colour, i.e. the green light, and the second portion 12 of the light source
30 4 would be controlled for emitting light from the device 2 in a second colour, i.e. the amber light.

In any case, the green light emitted from the device signals to nearby persons that the user
of the corresponding regulated vehicle has fastened their seat belt – nearby persons, i.e.
35 site management and co-workers of the user, will therefore know if the user has fastened

their seat belt and can indicate to them if they have not. In this way, the user is encouraged to fasten their seat belt, reducing the severity of any potential accidents that may occur, both to the user and to nearby persons.

5 When the regulated vehicle is required to use public roads, the shutter 20 is actuated from the open position to the closed position, preventing any green light being emitted to the ambient environment from the device 2. Here, the device 2 complies with regulations that dictate any green colour, from such a beacon device, should not be visible when these regulated vehicles are using a public road. Some regulations stipulate that as well as
10 green light not being emitted on public road, no green coloured part of the structure of the beacon device should be visible. By using a clear coloured lower portion 14 of the housing 8 and positioning the green filter 18 inside the shutter, when the shutter 20 is in the closed position, no green colour of the device 2 is visible to nearby persons.

15 In some embodiments, the material of the shutter may allow relatively small amounts of light through and/or the apertures 26a, 26b may not be fully unaligned in the closed position, but in either case, the amount of emitted light that ultimately exits the device 2 cannot be viewed by persons in the ambient environment and can be considered negligible.

20

Amber light will be emitted by the device 2, as long as the regulated vehicle is on and supplying power to the device 2, irrespective of whether green light is being emitted. In this way, the device also complies with regulations that stipulate these types of regulated vehicles must comprise a beacon that projects amber light whenever a user is operating
25 the vehicle, on or off public roads.

In this embodiment, the colours of the filter 18 and upper portion 16 of the housing 8 have been selected such that the device 2 complies with the above described regulations when the device 2 is being used in conjunction with regulated vehicles. In other embodiments,
30 different combinations of colours may be selected for both the filter and upper portion 16 and lower portion 14.

In some embodiments, the filter 18 may form part of the shutter 20. In particular, the filter may form part of the fixed portion 22, or in other embodiments, may form part of the
35 moveable portion 24. For example, in one embodiment, the moveable portion 24 is

transparent or translucent such that, in the first position, the apertures 26a, 26b of the portions 22, 24 align to allow emitted light to pass through the shutter 20, and in the second position, the apertures 26a, 26b of the portions 22, 24 are offset such that the emitted light passing through the shutter 20 is now filtered by the moveable portion 24.

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In a second embodiment, the upper portion 16 of the housing 8 is a clear colour such that it does not filter the light emitted from the second portion 12 of the light source 4. Instead, the device 2 comprises a second filter, similar to size and function of the filter 18, but substantially surrounding the second portion 12 of the light source 4. The second filter is an amber colour, to comply with the above described regulations, but in other embodiments may be a different colour. Here, both the lower and upper portion 14, 16 of the housing 8 is clear and second filter ensures light emitted by the second portion 12 of the light source 4 is filtered accordingly.

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The filter 18 may be omitted and a coloured light source used on the first portion 10 instead. This would still meet the requirements of hiding the coloured part of the light behind the shutter. However, it may be more desirable to use a filter to reduce costs and avoid having coloured light sources.

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CLAIMS

1. A beacon device comprising:
 - a light source unit for providing a first source of light having a first colour of emitted light from a first portion of the light source unit and a second source of light having a second colour of emitted light from a second portion of the light source unit; and
 - a barrier arranged to be in a first or a second configuration, wherein, in the first configuration, the barrier blocks light from the first portion from exiting the device, and in the second configuration, at least some of the light from the first portion is not blocked by the barrier.
2. A beacon device according to claim 1, wherein the barrier comprises a moveable portion moveable between a first and second position, corresponding to the first and second configuration respectively, to allow or block the passage of light emitted from the first source.
3. A beacon device according to claim 2, wherein the barrier further comprises a fixed portion, surrounding the first portion, having at least one aperture, such that, in the first configuration, light emitted from the first source is obstructed by one of the fixed portion and the moveable portion from exiting the device, and, in the second configuration, light emitted from the first source is able to pass through said at least one aperture and exit the device without being obstructed by the moveable portion.
4. A beacon device according to any one of the preceding claims, wherein the light source unit includes a primary light source and a first filter, interposed between said primary light source and the barrier, wherein said first source of light is provided by light from the primary light source passing through said first filter.
5. A beacon device according to claim 4, wherein, in the first configuration, the barrier surrounds the first filter.
6. A beacon device according to claim 4 or 5, further comprising a second filter wherein said second source of light is provided by light from the primary light source passing through said second filter.

7. A beacon device according to claim 6, wherein the primary light source is arranged to emit substantially white light.
8. A beacon device according to claim 7, wherein the first filter forms part of the barrier.
9. A beacon device according to any one of claims 4 to 8, wherein the primary light source includes two separate lighting elements, one of the lighting elements being used to provide the first source of light and the other lighting element being used to provide the second source of light.
10. A beacon device according to any one of claims 1 to 9, further comprising a housing enclosing the light source unit and the barrier.
11. A beacon device according to claim 10, wherein the housing includes a first housing element surrounding the first portion of the light source unit through which light from the first source of light passes and a second housing element surrounding the second portion of the light source unit through which light from the second source of light passes.
12. A beacon device according to any one of claims 6 to 9, further comprising a housing enclosing the light source unit and the barrier, the housing including a first housing element surrounding the first portion of the light source unit through which light from the first source of light passes and a second housing element surrounding the second portion of the light source unit through which light from the second source of light passes and, wherein the first filter substantially surrounds the first portion of the light source, and the second filter forms the second housing element.
13. A beacon device according to claim 12, wherein the first filter is the first colour and the second housing element produces the second colour of the emitted light from the second portion of the light source unit.
14. A beacon device according to any one claims 6 to 9, further comprising a housing enclosing the light source unit and the barrier, the housing including a first housing element surrounding the first portion of the light source unit through which light from the first source of light passes and a second housing element surrounding the second portion of the light

source unit through which light from the second source of light passes and wherein the first and second filter surround the first and second portions of the light source respectively, and the second filter is contained within the housing.

5 15. A beacon device according to claim 14, wherein the first filter is the first colour, the second filter is the second colour and the second housing element is substantially clear.

16. A beacon device according to claim 12 or 14, wherein the barrier forms the first housing element.

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17. A beacon device according to any one of claims 11 to 15, wherein the first housing element is substantially clear.

18. A beacon device according to any one of the preceding claims, wherein the first portion of the light source unit is controlled independently from the second portion of the light source unit.

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19. A beacon device according to any one of the preceding claims, further comprising a user input for selectively switching the barrier between the first and the second configuration.

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Application No: GB1913961.7

Examiner: Damien Huxley

Claims searched: 1 to 19

Date of search: 25 February 2020

**Patents Act 1977
Corrected Search Report under Section 17**

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
A		US2010/244748 A1 (HELLA INC) See paragraphs [0007], [0023] to [0025] and the figures
A		US2012/182730 A1 (DATZ ET AL) See paragraphs [0007], [0008], [0011] to [0014] and the figures
A		GB1179716 A (PARKINSON RADIOTELECOMMUNICATIONS LIMITED) See the figures especially
A		CN104595839 A (DANYANG MIKE AUTO PARTS FACTORY) See the figures and WPI Abstract Accession Number 2015-414414

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
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Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X :

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Worldwide search of patent documents classified in the following areas of the IPC

B60Q; F21S; F21V

The following online and other databases have been used in the preparation of this search report

WPI, EPODOC

International Classification:

Subclass	Subgroup	Valid From
B60Q	0001/26	01/01/2006
F21S	0010/06	01/01/2006