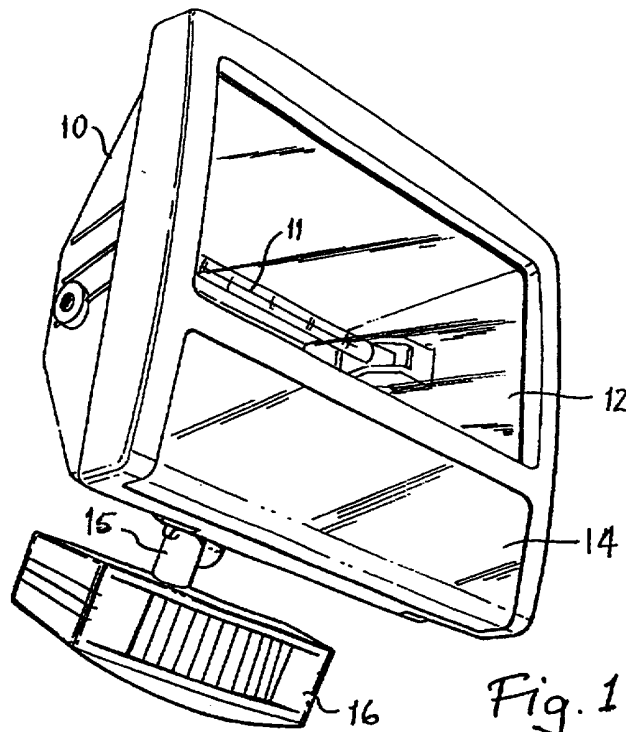


(21) Application No 9926790.8	(51) INT CL ⁷ F21V 23/00 , F21S 10/00 , G08B 13/19 // F21W 131:107, F21Y 113:02
(22) Date of Filing 13.11.1999	(52) UK CL (Edition S) F4R RFC R330 R410 R43Y G1A AA1 AG17 AG6 AG9 AMZ AR6 AR7
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(54) Abstract Title
Two lamp lighting appliance with passive IR sensor

(57) A lighting appliance comprising a tungsten halogen (TH) lamp 11, a low energy (PL) lamp (13) and control means including a passive infrared (PIR) sensor (17) and a daylight sensor such as a CDS cell (18). The control means are selectable to cause the lamps to be illuminated and extinguished automatically. The lamps may be contained in a first housing 10 and the PIR sensor and daylight sensor contained in a second housing 16. The appliance may include one or more timing devices to determine the period of illumination of one or both lamps and the range of the PIR sensor may be adjustable. In one mode the PL lamp may be illuminated at night and the TH lamp illuminated at night in response to a signal from the PIR sensor.



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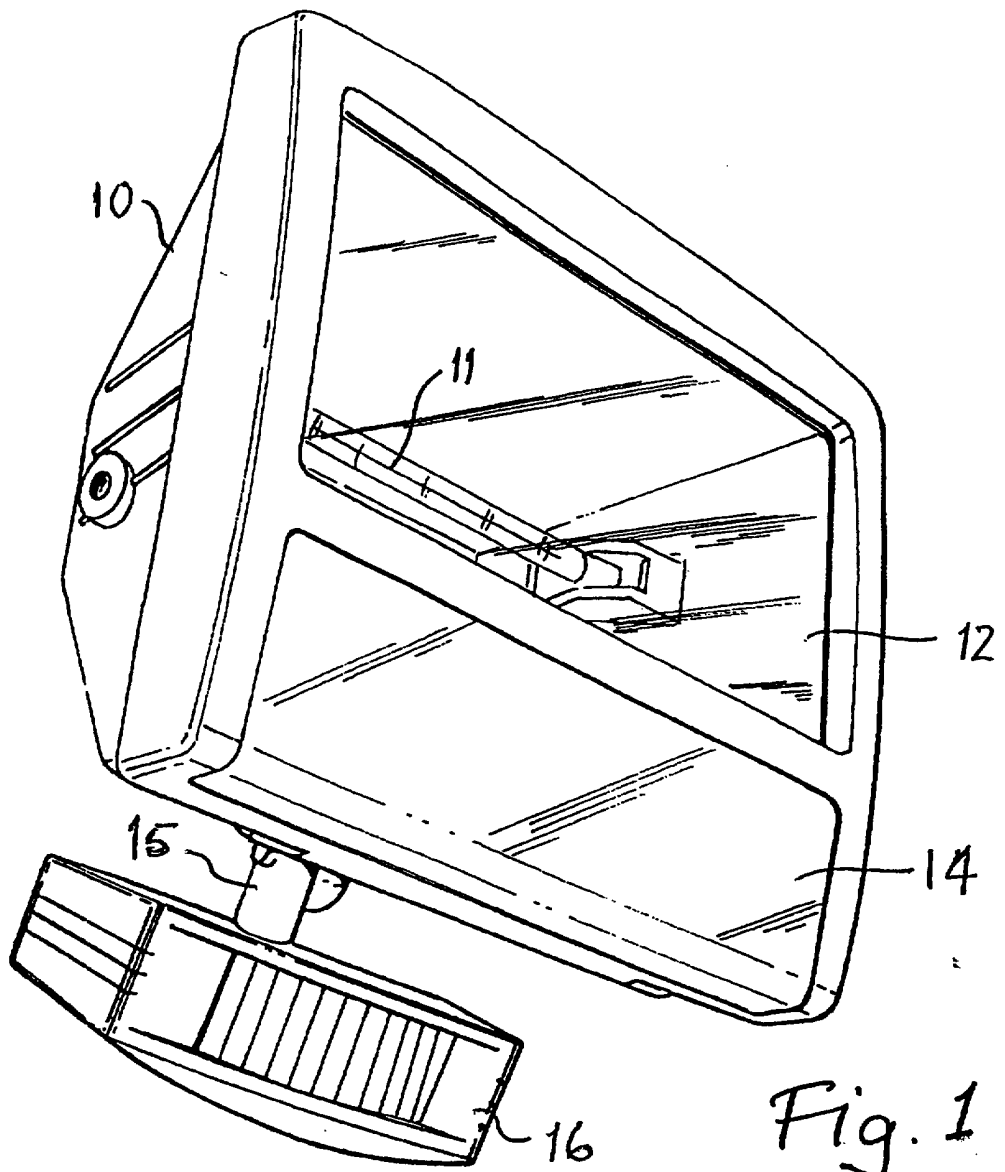
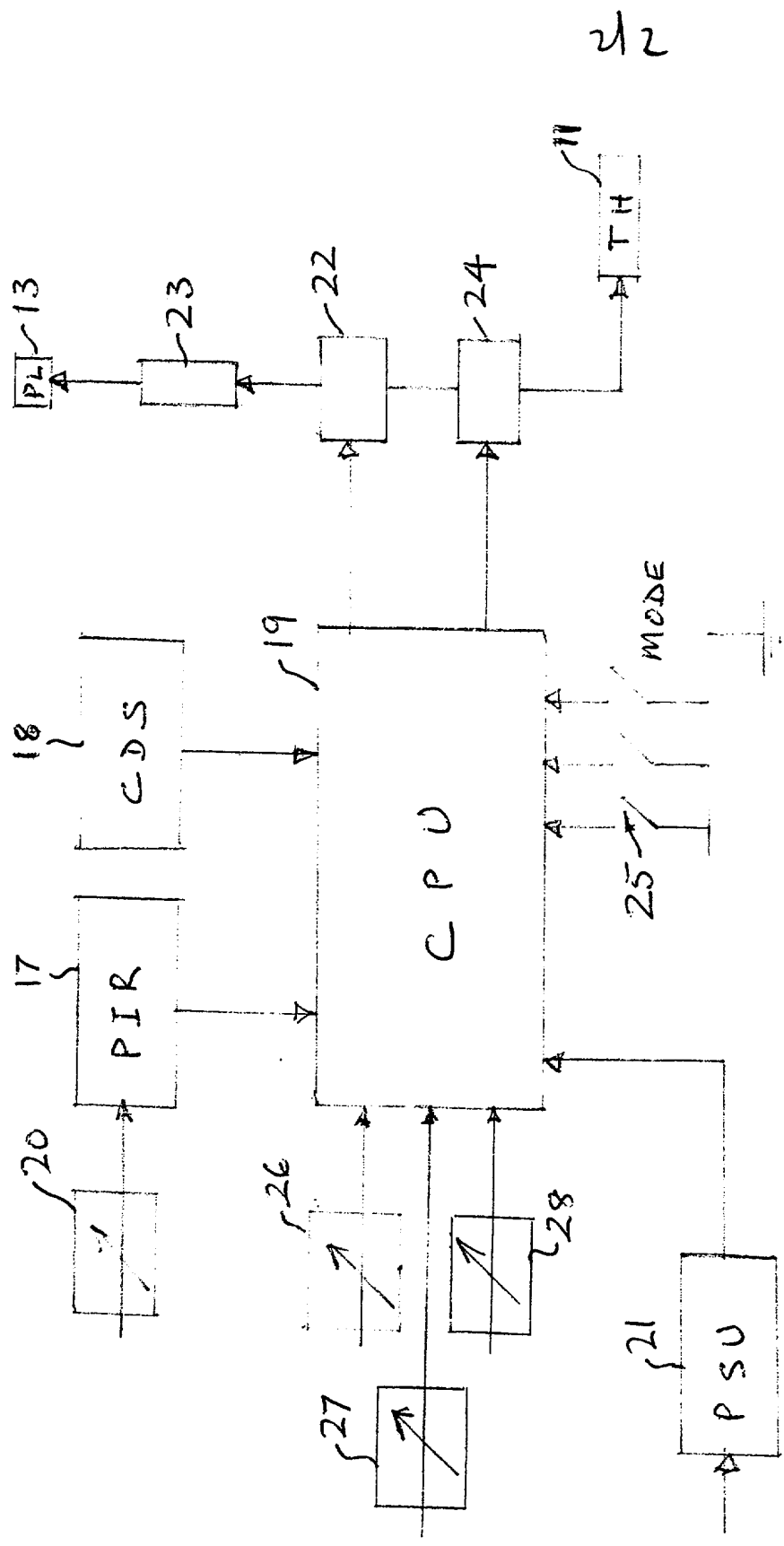


Fig. 1



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Fig. 2

A LIGHTING APPLIANCE

THIS INVENTION concerns a lighting appliance principally though not exclusively for use on the exterior of a building and adapted to provide illumination with minimum usage of electrical energy.

Low energy lighting appliances are known comprising a PL lamp which provides light output equivalent to that of a conventional lamp having a tungsten filament bulb but at a quarter (or less) power consumption.

Similarly, it is known to provide tungsten halogen (TH) flood lamps which produce high brilliance typically at between 100 and 500 watts power consumption.

An object of the present invention is to provide a lighting appliance which combines the advantages of these two known lamps and operable to ensure maximum energy saving.

According to the present invention there is provided a lighting appliance comprising a tungsten halogen (TH) flood lamp, a low energy (PL) lamp, and control means including a PIR sensor and a daylight sensor, the control means being selectable to cause the PL lamp and the (TH) lamp to be illuminated and extinguished automatically when required.

Preferably, the TH and PL lamps are contained within a common housing to which is adjustably attached a further housing containing a PIR and daylight sensor.

The lamp housing may include a bracket for attachment to a wall.

The lighting appliance preferably includes at least one timing device to determine the period of illumination of one or both of the lamps.

The PIR sensor preferably includes means for adjusting the effective range of operation thereof.

An embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:-

Fig. 1 is a perspective view of a lighting appliance made in accordance with the invention;

and Fig. 2 is a block circuit diagram.

The appliance comprises a housing 10 attachable by a bracket (not shown) to a wall and containing a tungsten halogen TH lamp 11 behind a transparent lens 12, and a low energy PL lamp 13 behind a translucent lens 14. Adjustably attached to the base of the

housing 10 at 15 is a further housing 16 containing a PIR sensor 17 and CDS (photo-cell) 18.

Control means for the appliance consists essentially of a CPU 19 to which is connected the PIR sensor 17 and the CDS cell 18. A variable control device 20 enables adjustment of the range of operation of the PIR sensor 17. A power supply unit 21 delivers a 240 volt supply to the CPU 19, the output of which is connected to a relay or triac 22 and, via ballast 23, to the low energy PL lamp 13.

A second relay/triac 24 is connected to the TH lamp 11.

A mode select switch 25 determines operation of the lamps as follows:

In a first selected mode CPU 19 controls the lamps such that the PL lamp 13 is illuminated from dusk to dawn as determined by the CDS cell 18. Also in this mode the TH lamp 11 is illuminated (from dusk to dawn) when triggered by a signal from the PIR sensor 17. A timer 26 may be set to determine the duration of illumination of the TH lamp after it is triggered, e.g. ten seconds to ten minutes. The timer 26 may take the form of a potentiometer located for access beneath the housing 16.

In a second selected mode the CPU 19 controls the lamps such that the TH lamp is illuminated for a time determined by the timer 26 after being triggered by a signal from the PIR sensor 17, the PL lamp being simultaneously illuminated and remaining so for

a period determined by a further timer 27, which may be set for 5, 10, 15, 30 or 60 minutes after the TH lamp has been extinguished.

In a third mode the CPU 19 permits a manual override such that the TH lamp may be switched on manually for a preset time, e.g. 0.5, 1, 2 or up to 5 hours, as determined by a third timer 28, irrespective of illumination of the PL lamp.

The device has three timer options determined by the various timers and the CPU 19; these are:-

- a) the period during which the TH lamp remains illuminated.
- b) the period during which the PL lamp remains illuminated.
- c) the period during which the TH lamp remains illuminated after manual switching.

The timers 26, 27 and 28 may be all sited to be adjustable by the user, or some may be built into the CPU 19 and pre-set or adjustable electronically.

CLAIMS

1. A lighting appliance comprising a tungsten halogen (TH) floodlamp, a low energy (PL) lamp and control means including a PIR sensor and a daylight sensor, the control means being selectable to cause the PL lamp and TH lamp to be illuminated and extinguished automatically when required.
2. A lighting appliance according to Claim 1, wherein the TH and PL lamps are contained within a common housing to which is adjustably attached a further housing containing a PIR and daylight sensor.
3. A lighting appliance according to Claim 1 or Claim 2, including a bracket for attachment of the appliance to a wall.
4. A lighting appliance according to any preceding claim, including at least one timing device to determine the period of illumination of one or both of the lamps.
5. A lighting appliance according to any preceding claim, wherein the PIR sensor includes means for adjusting the effective range of operation thereof.
6. A lighting appliance according to any preceding claim, wherein the control means is selectable according to a first mode wherein the PL lamp is illuminated from dusk to dawn, as determined by the daylight sensor, and wherein the TH lamp is illuminated from

dusk to dawn when triggered by a signal from the PIR sensor, a first timer being provided and adjustable to determine the duration of illumination of the TH lamp after it is triggered.

7. A lighting appliance according to any preceding claim, wherein the control means is selectable according to a second mode wherein the TH lamp is illuminated for a time determined by a first timer after being triggered by a PIR sensor and wherein the PL lamp is simultaneously illuminated and remains so for a period determined by a second timer.

8. A lighting appliance according to any preceding claim, wherein the control means is selectable according to a third mode wherein the TH lamp may be switched on manually for a pre-set time as determined by a third timer irrespective of whether the PL lamp is illuminated.

9. A lighting appliance according to any preceding claim, including three separate timers, one to determine the duration of the TH lamp, another to determine the duration of illumination of the PL lamp, and a third to determine the duration of illumination of the TH lamp alone.

10. A lighting appliance according to Claim 9, wherein one or more of the timers is located thus to be adjustable selectively by the user.

11. A lighting appliance substantially as hereinbefore described, with reference to, and as illustrated in the accompanying drawings.



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Application No: GB 9926790.8
Claims searched: 1-11

Examiner: Annabel Ovens
Date of search: 9 March 2000

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK Cl (Ed.R): F4R (RFC, RFG, RFJ); G1A (AMQH, AMZ)
Int Cl (Ed.7): G01J (1/42); G08B (13/18, 13/189, 13/19, 13/191)
Other: Online: PAJ, EPODOC, WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2330407 A (SOLAR WIDE INDUSTRIAL LTD) see page 3 lines 11-18, page 4 lines 7-9 and page 7 lines 14-17	1-4 and 6

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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