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(71) Applicant and

(72) Inventor: **BAKERI, Kartik, Prafull** [IN/IN]; E-7,
Prathana Alok, B/h H.L. College of Commerce,
Navarangpura, Ahmedabad 380 009 (IN).

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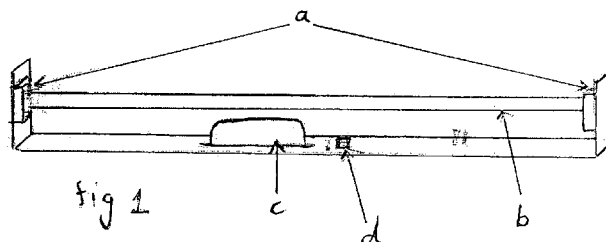
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(54) Title: A NOVEL METHOD OP ENERGY EFFICIENT T5 FITTING TO BE MOUNTED IN CONVENTIONAL T8/T12 FITTING



(57) Abstract: The principle proposed by the invention is fitting of the new energy efficient T5 fitting with plurality of T5 lamps/LED strips along with its own reflector into the exiting conventional T8/T12 fixture, without loss of power. The present invention consisting of T5 lamp/LED strip, reflectors, electronic ballast and supply wire to be mounted in conventional used T8/T12 fitting wherein T5 lamp /LED strip is mounted in the T5 holders and reflector is mounted in the T5 holders and reflector is mounted on the ballast casing which also holds the T5 holders and supply wires becoming out of the T5 casing. T5 fitting with plurality of T5 lamps/LED strips is retrofitted in such a way so, as to connect the supply wires to the old main terminals of the T8/T12 fitting and reflectors is provided between the casing and the lamp, which is limited to T5 fitting to be fitted in the T8/T12 fitting, but also to be used in stand along type T5 fitting.

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A NOVEL METHOD OF ENERGY EFFICIENT T5 FITTING TO BE MOUNTED IN CONVENTIONAL T8/T12 FITTING

Field of the invention:

5 The present invention relates to a novel method of energy efficient T5/LED (Light Emitting diode) fitting to be mounted in conventionally used T8/T12 fitting. The T5 fluorescent lamp/LEDs is at present the most energy efficient lamp. The conventional T8/T12
10 lamp presently in use is 48 inch long and their rated power consumption is 36W & 40W respectively. The T5 lamp is 46 inch long, has rated power consumption of 28W & has more light output as compared to the conventional T8/T12 lamps.

15 Background of the invention

In the lighting industry where fluorescent tubes are used in conjunction with reflector and louver accessories it is necessary to closely fix and integrate lamp, luminaries and reflector or louver together. Traditionally this has been achieved by manufacturing
20 various complex solutions such as metal frames, expensive molded components, metal brackets and large heavy enclosures.

There are two types of optical arrangements in the lighting industry. One is a form of reflector, typically a constant parabolic shaped
25 reflective sheet focused co-axially on the axis of a lamp, another form the louver is similar to this but with the addition of a plurality of cross blades constructed to fit at 90 degrees to the lamp axis, for the purpose

of controlling glare and providing lamp cut off. Such constructions are well known and understood to those practiced in the industry.

Recent technology developed has made possible the production of a
5 form of light fitting in which the whole structure and operating control gear can be integrated within the typical axis and volume of space previously occupied by a single conventional fluorescent tube.

There is a necessity for providing a method of connecting reflectors
10 and louvers to the new fluorescent lamps.

To compliment the advantages of T5/LEDs without discarding the existing T8 or T12 fixture, conventional T5 fitting is made in such a way that only the old lamp has to be removed & the T5 fitting along
15 with the electronic ballast & T5 lamp, retrofits into the existing fixture holders with no change in wiring requirement. The T5 fitting gets its power supply requirements from the lamp holders of the original T8/T12 fixtures.

20 This T5 fixture has the disadvantage, in the sense that the old electromagnetic choke is still in series with the main supply to the new T5 fixture & hence consumes some power resulting into an extra loss of wattage that is not converted into light output.

25 The present invention has made a new T5 fixture with plurality of T5/LED lamps in such a way that it prevents the loss of wattage, occurring in the old electro magnetic choke.

Summary of the Invention

This present invention provides a method to retrofit new technology into existing lighting installations and to provide the opportunity of designing luminaries and optical control systems, which can be made
5 substantially smaller to advantage. The present invention further provides reflectors, which can be fitted in the new concept lighting fittings.

Although the new T5 fixture with plurality of T5/LED lamps retrofits
10 into the already installed T8/T12 fixture, the existing circuit of the already existing T8/T12 fixtures is not used at all & so there is no question of power consumed by the existing electromagnetic choke.

15 Another advantage provided by the present invented T5 fixture with plurality of T5/LED lamps is that the old electromagnetic choke can be sold off and the copper and other material used in it can be recycled.

A mirror optic reflector made from aluminum anodized reflector sheet
20 is mounted on the casing which holds the electronic ballast/circuit, as well as the T5 lamp-holders. The Reflector lies between the said casing and the T5 lamp/LED strips. Two pins, emulating the pins of the T5 lamp, are attached on both ends of each LED strips in such a way that these pins come into contact with the T5 lamp-holder
25 terminals & the T5 strips get the power supply through the pins & T5 lamp-holder terminals. The reflector improves the downward light output ratio by a great amount. It can be of any other material but anodized aluminum is very long lasting. The mounting of the reflector is not limited to retrofit type fitting, but can be also applied to stand-
30 alone fitting.

Brief Description Of The Drawings

The following detailed description of the invention is supported by the schematically described embodiment examples, which function only for better understanding and are to be evaluated in no way as a
5 restriction to the range of protection of the invention.

Fig.1 represents the conventional T8 & T12 lighting fixtures

Fig.2 represents the T8/T12 lighting fixture without the lamp &
electro magnetic choke

10 Fig.3 represents the present invention T5 lighting fixtures with
plurality of T5 lamps/LED strips.

Fig.4 represents the T5/LED lighting fixture being fitted into the
T8/T12 lighting fixture.

15 As shown in Fig. 1, the conventional T8 or T12 fixture holds the lamp
(1b) and the electro magnetic choke (1c). The casing of the T8/T12
may be different than that shown in Fig.1 but the distance between the
T8/T12 lamp-holders (1a) will remain the same. As shown in Fig. 1,
(1d) shows the main terminal.

20 The whole T5 fitting with plurality of T5 lamps/LED strips shown in
Fig. 3 is fitted into the casing T8/T12 fitting shown in Fig.2. Fig.3
represents the present invention T5 lighting fixtures with plurality of
T5 lamps/LED strips (3b). The electronic ballast/circuit lies within the
25 T5 casing (3c). The T5 casing also holds the T5 lamp-holders (3f),
which further hold the T5 lamp/LED strip (3b). The fixture is
extended one inch at the both side to match the length of the T8/T12
lamp and pins (3a) are attached on the sides to emulate the T8/T12
lamp. The reflector (3e) is mounted between the T5 casing (3c) and

the T5 lamps/LED Strips (3b). The supply wires coming out of the T5 casing is shown by (3d). The whole T5 fitting (fig 3) with plurality of T5/LED lamps, is fitted into the T8/T12 fitting of Fig.2 to replace the T8/T12 lamp, as shown in Fig.4, wherein (4b) is the whole T5 fitting
5 with plurality of T5 lamps/LED strips, retrofitted into the conventional/exiting T8/T12 lighting fixtures. The supply wires (3d) coming out from the T5 fitting are connected to the conventional/existing main terminal (4d). The T5 fitting with plurality of T5 lamps/LED strips as described above may be covered with
10 acrylic cover to protect the lamps from mechanical shocks & dust.

The principle proposed by the invention is fitting of the new energy efficient T5 fitting with plurality of T5 lamps/LED strips along with its own reflector into the existing conventional T8/T12 fixture,
15 without loss of power, consumed by the old electromagnetic choke.

20

I claim:

1. A novel method of energy efficient T5 fitting, consisting of single or plurality of T5 lamps/LED strips, reflectors, casing, electronic ballast/circuit and supply wires, to be mounted in conventional used T8/T12 fitting wherein T5 lamps or LED strips are mounted in the T5 holders and reflector is mounted on the T5 casing which also holds the T5 lamp-holders and supply wires coming out of the T5 casing.
2. A novel method of energy efficient T5 fitting to be mounted in conventional used T8/T12 fitting as claimed in claim 1 wherein T5 fitting with single or plurality of T5/LED lamps is retrofitted in such a way so as to connect the supply wires coming out of the new T5 fitting, to the old main terminals of the T8/T12 fitting.
3. A novel method of energy efficient T5 fitting with single or plurality of T5 lamps/LED strips, to be mounted in conventional used T8/T12 fitting as claimed in claim 1 wherein reflectors is provided between the casing and the lamp.
4. A novel method of energy efficient T5 fitting to be mounted in conventionally used T8/T12 fitting as claimed in claim 3 is not limited to T5 fitting to be fitted in the T8/T12 fitting, but also to be used in stand alone type T5 fitting.
5. A novel method of energy efficient T5 fitting with single or plurality of T5 lamps/LED strips to be mounted in conventional used T8/T12 fitting substantially as herein described with reference to the foregoing description and the accompanying drawings.

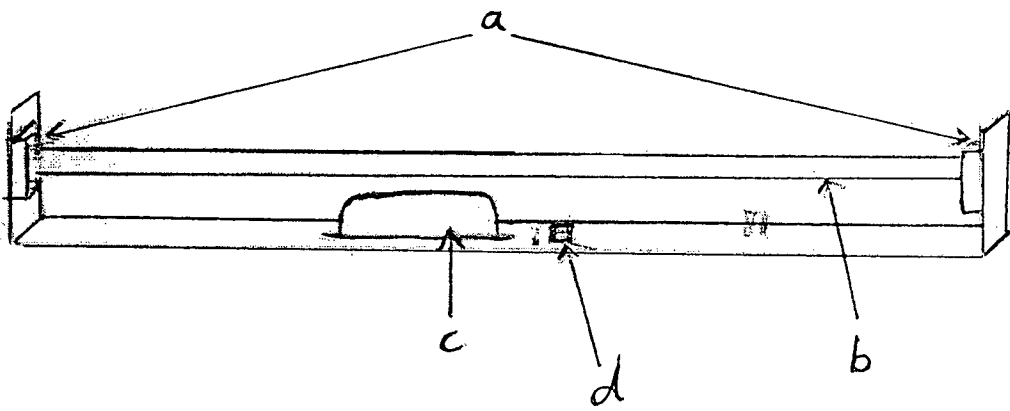


fig 1

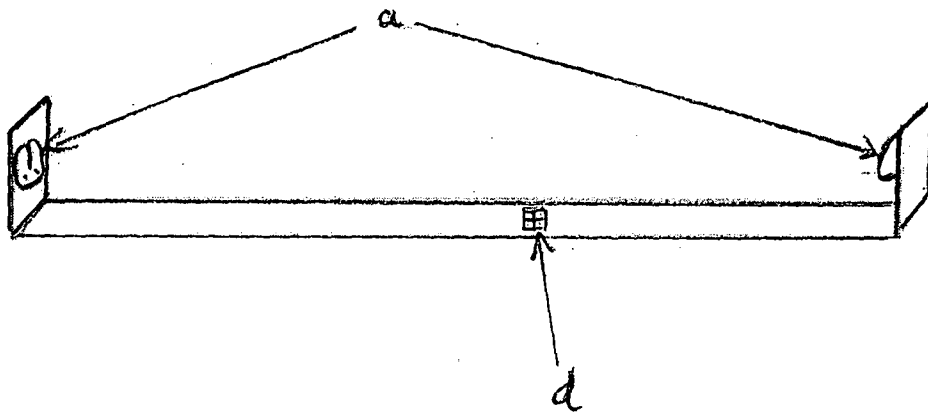


fig 2

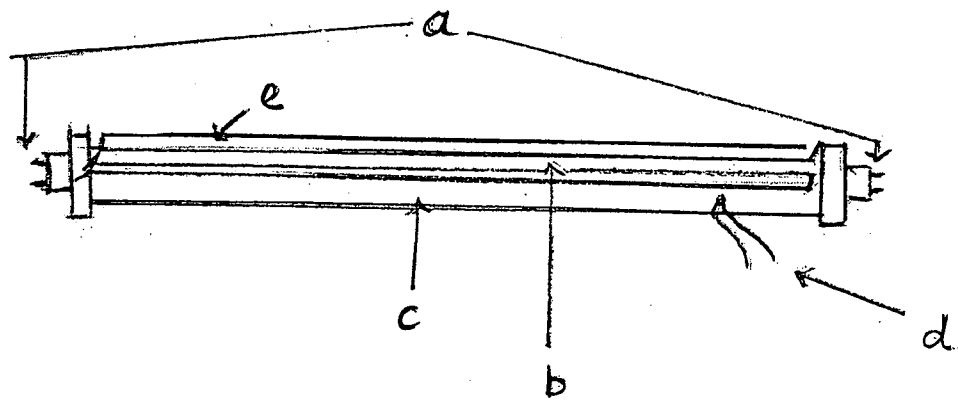


fig 3

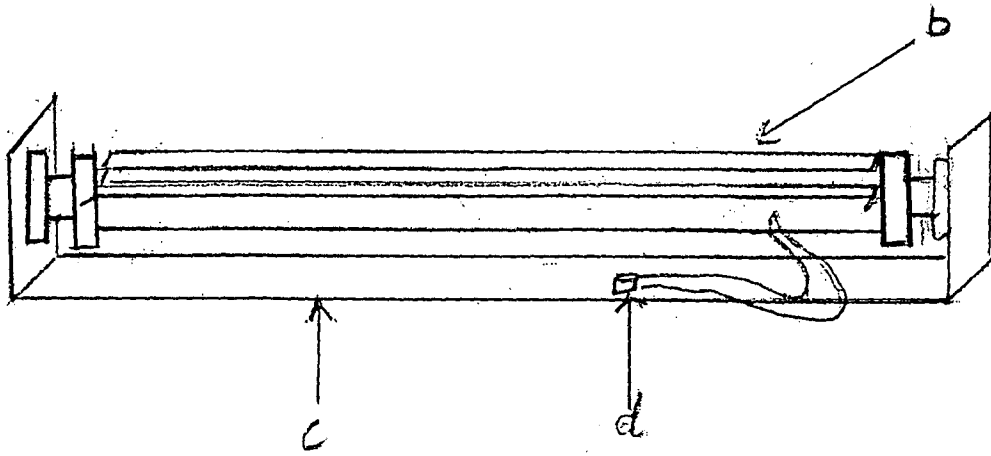


fig. 4