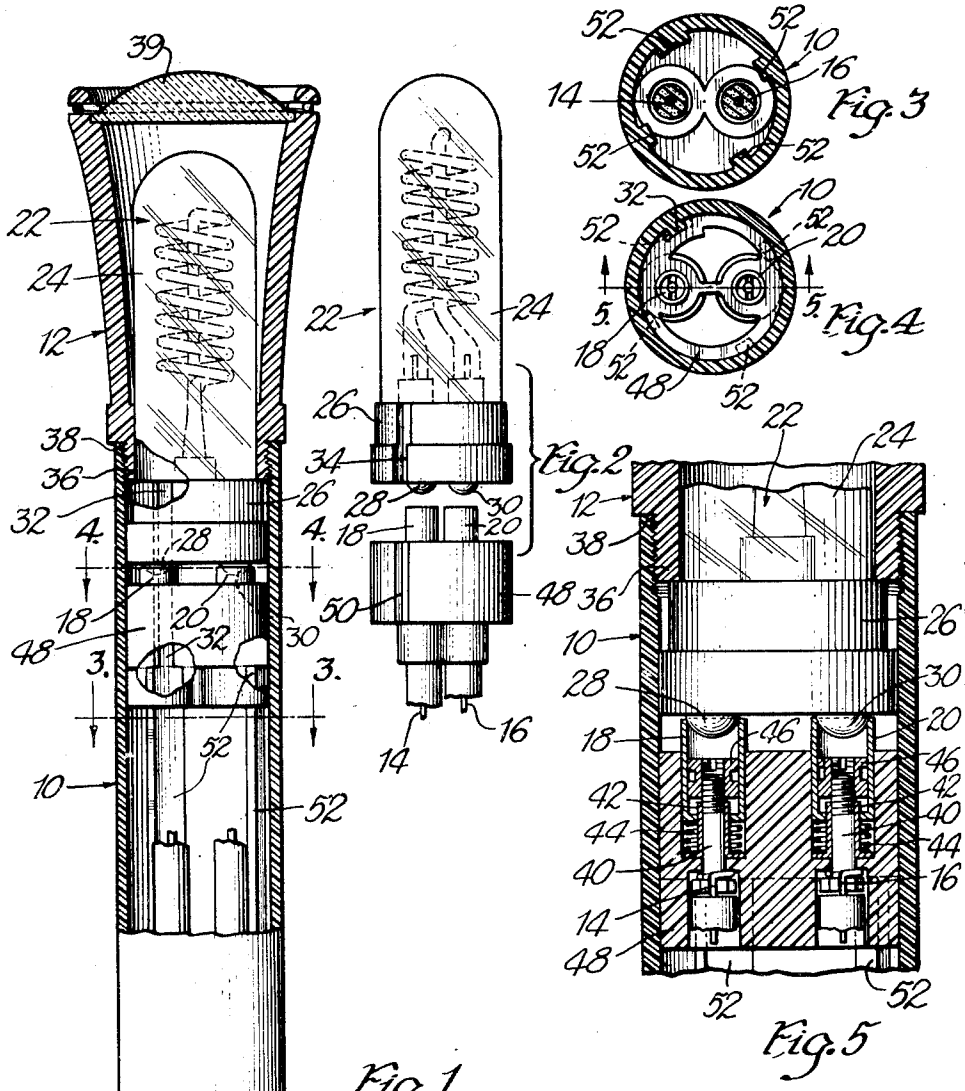
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IGNITION TIMING LIGHT HAVING A REPLACEABLE LAMP

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IGNITION TIMING LIGHT HAVING A REPLACEABLE LAMP

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1 Claim. (Cl. 240—11.4)

1

This invention relates to an improvement in ignition timing lights and more particularly to an ignition timing light with a replaceable lamp.

In present ignition timing lights having replaceable lamps, the installation of a replacement lamp usually requires the careful wiring of the replacement lamp's electrical contactors to the proper electrical leads because the polarity of the leads and lamp contactors must be preserved if the light is to function properly. The removal of a burned out lamp and its replacement by a fresh lamp is, therefore, time consuming, and the possibility of making the wrong electrical connections always exists.

Thus, it is an object of this invention to provide an ignition timing light with a replaceable lamp, wherein the lamp will be always installed properly and wherein it is unnecessary to do any wiring of the lamp contactors to the electrical leads.

Another object of this invention is to provide an ignition timing light with a replaceable lamp whose electrical contactors are adapted to be clamped resiliently against another set of electrical contactors of the proper polarity, whereby replacement of a burned out lamp may be accomplished quickly and properly.

Further objects and advantages of this invention will become apparent as the following description proceeds and the features of novelty which characterize this invention will be pointed out with particularity in the claim annexed to and forming part of this specification.

A preferred embodiment of the invention is shown in the accompanying drawing in which:

Figure 1 shows an ignition timing light with the cap and part of the housing in cross-section to show the arrangement of parts within the housing.

Figure 2 is an exploded view of the lamp and the electrical contactors mounted within the housing.

Figure 3 is a view taken substantially on line 3—3 of Figure 1.

Figure 4 is a view taken substantially on line 4—4 of Figure 1.

Figure 5 is a greatly enlarged cross-section view taken on line 5—5 of Figure 4 and showing the resilient mounting of the electrical contactors within the housing.

Referring now to the drawings, there is shown in Figure 1 an elongated cup-shaped housing 10 open at one end thereof. A cap, generally indicated at 12, is threaded into the open end of the housing to enclose the lamp mounted therein. A pair of electrical leads 14 and 16 extend through the bottom of housing 10 and are connected in electrically conductive relation to a pair of electrical contactors 18 and 20 positioned within housing 10. These electrical contactors 18 and 20 face the open end of the housing and are fixed relative to the housing, in that they cannot be radially displaced within the housing.

2

A lamp generally indicated at 22 is adapted to be inserted into the open end of the housing and to extend therefrom. This lamp 22 is of the neon bulb type which is well known in the art. The lamp 22 comprises a glass bulb 24 which is sealed to a plastic base 26. The plastic base 26 is of greater diameter than the glass bulb 24 for a reason that will be disclosed hereinafter. A pair of electrical contactors 28 and 30 are provided on the under side of base 26 and are adapted respectively to engage electrical contactors 18 and 20.

In order that the proper polarity of the electrical contactors be preserved, so that contactor 28 will always engage contactor 18 and contactor 30 will always engage contactor 20, a key 32 is formed integrally within the housing 10 and extends longitudinally therein. A keyway 34 is formed in base 26 and is adapted to register with key 32 so as to properly position the contactors 28 and 30 to respectively engage contactors 18 and 20.

A lip 36 on cap 12 is provided to engage base 26 so as to clamp the set of contactors 28 and 30 and the set of contactors 18 and 20 together into operative engagement. The lip 36 is of slightly greater diameter than glass bulb 24 and is positioned concentrically therewith but has an internal diameter smaller than that of the base 26 whereby the lip 36 engages the base 26 for the purpose described above.

A shoulder 38 on cap 12 engages the upper end of housing 10 to limit the threading of the cap 12 into the housing 10. The cap 12 also has a lens 39 mounted therein for a purpose of focusing the light of the lamp 22.

To accommodate the clamping of the set of contactors 28 and 30 against the set of contactors 18 and 20, one of said sets of contactors is resiliently mounted. In the specific form shown herein, the contactors 18 and 20 which are mounted in the housing are the resiliently mounted set of contactors and are shown in detail in Figure 5.

Referring to Figure 5, the leads 14 and 16 are each electrically connected to a threaded electrically conducting bolt 40. An inner sleeve 42

is positioned concentrically of the stem of each bolt **40** and outer sleeves or contactors **18** and **20**, are each positioned concentrically with an inner sleeve **42**. A spring **44** is positioned concentrically of each inner sleeve **42** and between each inner sleeve **42** and the associate contactor **18** or **20**. A nut **46** is threaded onto the stem of each bolt **40** and retains the contactors **18** and **20** in position. These nuts **46** limit the outward movement of the contactors **18** and **20** under the bias of springs **44**.

The resilient contactors **18** and **20** are mounted in a plastic non-conducting plug **48** which is inserted through the open end of the housing **10**. This plug **48** has a keyway **50** which is adapted to register with key **32** for the purpose of positioning contactors **18** and **20** in the predetermined position where they are adapted to be engaged by contactors **28** and **30** of the lamp. The movement of the plug **48** into the housing **10** is limited by a plurality of ribs **52** which are formed integrally in housing **10** and which engage the lower side of plug **48** as best shown in Figures 1 and 5.

While there has been shown and described a particular embodiment of this invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention and, therefore, it is intended in the appended claim to cover all such changes and modifications as fall within the true spirit and scope of the invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

An ignition timing light comprising an elongated housing open at one end thereof, a plurality of circumferentially spaced ribs formed integrally with said housing extending inwardly

from the wall of said housing and spaced from the open end of said housing, a single key integral with said housing extending along the inner wall of said housing from adjacent said ribs to adjacent said open end of the housing, a plug insertable in the open end of said housing and slidable thereinto until it engages said ribs, a pair of electrical contactors resiliently mounted on said plug and extending therefrom toward said open end of the housing, electrical leads connected to said electrical contactors and extending through the other end of said housing, a lamp inserted into the open end of said housing, said lamp comprising a glass bulb portion, a base portion and a pair of electrical contactors on the under side of said base extending therefrom, said plug and said lamp base each having a single keyway therein registering with the key in the housing to align the electrical contactors in the plug and on the lamp base, a cap enclosing the extended glass bulb portion of the lamp and adapted to be threaded into the open end of said housing, and a lip on said cap extending within said housing and engaging the lamp base to force the sets of electrical contactors into operative engagement, said resiliently mounted pair of contactors in the plug accommodating the compression theretogether of the pairs of electrical contactors.

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