Jan. 21, 1947. F. HUDSON 2,414,527

INDICATING LAMP

Filed March 23, 1945

Fig. 1.

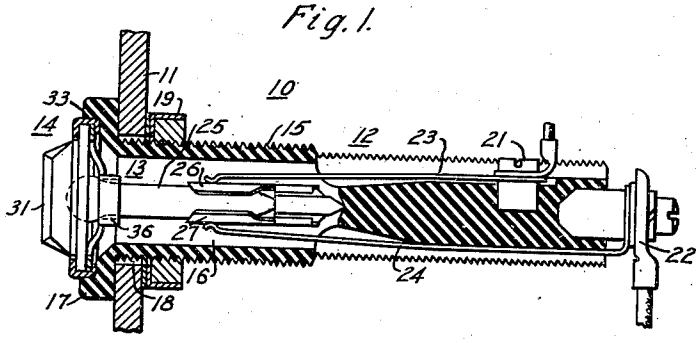


Fig. 2.

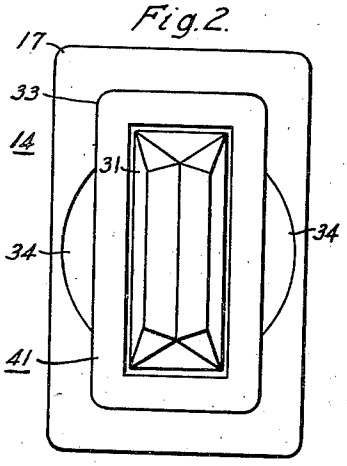


Fig. 3.

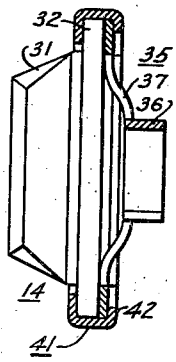
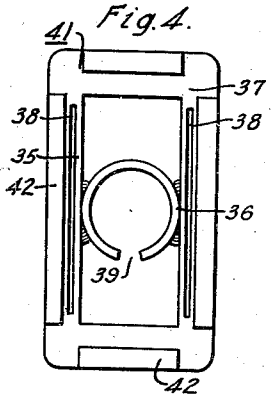


Fig. 4.



WITNESSES:

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INDICATING LAMP

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Application March 23, 1945, Serial No. 584,457

7 Claims. (Cl. 177—329)

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My invention relates, generally to indicating lamps and, more particularly, to indicating lamps which are mounted on switchboard panels in a receptacle having a removable lens cap.

At the present time, in order to remove the lamp from the receptacle it is necessary first to remove the lens cap and then remove the lamp by inserting a puller into the receptacle to grasp the lamp. The foregoing method has several objectionable features, the more important of which are:

1. The puller mutilates the white interior surface of the receptacle;

2. There is danger of the puller coming in contact with the energized lamp terminals;

3. The loss of the puller causes inconvenience, as the lamp can be extracted only by means of a puller;

4. Because of the tension of the spring members which hold the lens cap in place, it cannot be removed with the fingers, necessitating the use of a sharp tool to pry off the lens cap. This causes the lens cap to spring out suddenly and may result in it being dropped and broken.

An object of my invention is to overcome the foregoing objectionable features of an indicating lamp unit.

Another object of my invention is to provide for removing the lens cap and the lamp from the receptacle in one operation.

A further object of my invention is to provide for removing the lens cap and the lamp without requiring the use of any special tools.

A more general object of my invention is to provide a panel mounted indicating lamp unit which shall be simple and efficient in operation and which may be economically manufactured and installed.

Other objects of my invention will be explained fully hereinafter or will be apparent to those skilled in the art.

In accordance with one embodiment of my invention the lens cap for an indicating lamp unit is retained in position by a spring clip which so engages the lamp bulb that removal of the lens cap also withdraws the lamp from the receptacle in one operation.

For a fuller understanding of the nature and objects of the invention, reference may be had to the following detailed description, taken in conjunction with the accompanying drawing, in which:

Figure 1 is a view, partially in section and partially in elevation, of an indicating lamp unit

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embodying the principal features of my invention;

Fig. 2 is an enlarged view, in front elevation, of the indicating lamp unit;

Fig. 3 is an enlarged view, partially in side elevation and partially in section, of the lens cap and spring clip mounting; and

Fig. 4 is an enlarged rear view of the lens cap and spring clip mounting.

Referring to the drawing, and particularly to Fig. 1, there is shown an indicating lamp unit 10 which is suitable for mounting on a switchboard panel 11 and may be of the type described and claimed in Patent No. 2,331,254, issued October 5, 1943 to C. P. West and assigned to the Westinghouse Electric & Manufacturing Company. The lamp unit 10 comprises a receptacle 12 for an indicating lamp 13 provided with a lens unit 14. The receptacle 12 comprises an elongated body member 15 having an opening 16 in one end thereof for receiving the lamp 13.

A flange 17 is provided on one end of the receptacle 12 to permit the receptacle to be mounted in an opening 18 in the panel 11 and secured in position by tightening a nut 19 against the face of the panel 11 opposite the face engaged by the flange 17. The receptacle 12 may be composed of a suitable insulating material and is provided with terminal members 21 and 22 for making electrical connections to resilient contact members 23 and 24, respectively, which are disposed inside of the receptacle in the manner described in the aforesaid patent.

The lamp 13 comprises an elongated glass bulb 25 having metal terminal strips 26 and 27 secured on opposite sides thereof for engagement by the resilient contact members 23 and 24, respectively, when the lamp is inserted into the opening 16. As shown in Fig. 1 in an exaggerated manner, the end of the bulb 25 opposite the end provided with the terminal strips 26 and 27 is slightly larger than the cylindrical body portion of the bulb. This enlargement results from the glass blowing operation when the bulb is being manufactured.

As shown in Figs. 2 and 3, the lens unit 14 comprises a glass lens cap 31 which is rectangular in shape and is provided with a shoulder 32 disposed in a recess 33 in the flange 17 of the receptacle 15. Suitable depressions 34 are provided in opposite sides of the flange 17 to permit the lens unit to be grasped by the fingers for removing the lens unit from the receptacle.

In order to provide for withdrawing the lamp 13 from the receptacle when the lens unit is re-

moved, a spring clip **35** is attached to the lens cap **31** and is provided with a split cylindrical member **36** which engages the bulb **25** of the lamp **13**. As shown most clearly in Fig. 4, the spring clip **35** may comprise a hollow rectangular frame portion **37** composed of a suitable spring material and conforming to the shape of the lens cap **31**. The cylindrical member **36** is disposed in the opening in the hollow rectangular member **37** and may be secured to the sides of the member **37** by soldering or welding.

Elongated slots **38** are provided in opposite sides of the rectangular spring clip **37** to permit sufficient expansion of the cylindrical member **36** for the insertion of the enlarged end of the bulb **25** of the lamp **13**. The cylindrical member **36** is cut longitudinally at **39** to permit the expansion and contraction of the cylindrical member.

The spring clip **35** may be attached to the lens cap **31** by a metal frame member **41** which surrounds the shoulder **32** of the lens cap and is provided with inturned edge portions **42** for engaging the rectangular frame **37** of the spring clip. Thus, the complete lens unit assembly comprising the lens cap **31**, the spring clip **35** and the frame **41** may be inserted in the recess **33** in the flange **17** of the receptacle **15**. The lens unit is retained in position by the spring clip **35** which, as previously explained, engages one end of the lamp **13**. The other end of the lamp **13** is engaged by the resilient contact members **23** and **24**, thereby retaining the lamp and the lens unit in the receptacle.

When it is desired to remove the lamp from the receptacle for replacement, the sides of the lens unit may be grasped by placing the fingers in the depressions **34** and the lens unit and the lamp withdrawn in one operation. The enlarged end of the bulb **25** causes the lamp **13** to be withdrawn from the receptacle along with the lens unit. After the lens unit and the lamp are removed from the receptacle, the lamp may be removed from the spring clip **35** and a new lamp inserted therein. The complete assembly may then be inserted into the receptacle **12**.

From the foregoing description, it is apparent that I have provided a simple and convenient method for withdrawing the lamp from an indicating lamp unit without requiring the use of any special tools, such as the lamp puller previously required. Furthermore, the present method of withdrawing the lamp is much safer than the previous method in which there was danger of the lamp puller coming in contact with the energized terminals of the lamp.

Since numerous changes may be made in the above described construction, and different embodiments of the invention may be made without departing from the spirit and scope thereof, it is intended that all matter contained in the foregoing description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim as my invention:

1. An indicating lamp unit comprising, a receptacle having an opening at one end for receiving a lamp having contact terminals secured thereto, resilient contact members disposed within the receptacle to engage the contact terminals, a lens cap for the opening, and a spring clip mounting for the lens cap, said spring clip

mounting engaging the lamp to withdraw it from the receptacle when the lens cap is removed.

2. An indicating lamp unit comprising, a receptacle having an opening at one end for receiving a lamp having contact terminals secured thereto, resilient contact members disposed within the receptacle to support the lamp by engaging said contact terminals, a lens cap for the opening, and a spring clip for retaining the lens cap in position and engaging the lamp to withdraw it from the receptacle when the lens cap is removed.

3. An indicating lamp unit comprising, a receptacle having an opening at one end for receiving a lamp having contact terminals secured thereto, resilient contact members disposed within the receptacle to support the lamp by engaging said contact terminals, a lens cap for the opening, and a spring clip secured to the lens cap to retain it in position, said spring clip frictionally engaging the lamp to withdraw it from the receptacle when the lens cap is removed.

4. An indicating lamp unit comprising, an elongated receptacle having an opening at one end for receiving an elongated lamp having contact terminals disposed at one end of the lamp, resilient contact members disposed within the receptacle to engage the contact terminals, a lens cap for the opening, and a spring clip for retaining the lens cap in position and engaging the other end of the lamp to withdraw it from the receptacle when the lens cap is removed.

5. An indicating lamp unit comprising, an elongated receptacle having an opening at one end for receiving an elongated lamp having contact terminals disposed at one end of the lamp, resilient contact members disposed within the receptacle to engage the contact terminals, a lens cap for the opening, and a spring clip secured to the lens cap, said spring clip frictionally engaging the other end of the lamp to retain the lens cap in position and withdraw the lamp from the receptacle when the lens cap is removed.

6. An indicating lamp unit comprising, an elongated receptacle having an opening at one end for receiving a cylindrical lamp having contact terminals disposed at one end of the lamp, resilient contact members disposed within the receptacle to engage the contact terminals, a lens cap for the opening, and a spring clip secured to the lens cap, said spring clip having a split cylindrical portion for frictionally engaging the other end of the lamp to retain the lens cap in position and withdraw the lamp from the receptacle when the lens cap is removed.

7. An indicating lamp unit comprising, an elongated receptacle having a rectangular opening at one end for receiving a cylindrical lamp having contact terminals disposed at one end of the lamp, resilient contact members disposed within the receptacle to engage the contact terminals, a rectangular lens cap for the opening and a hollow rectangular spring clip secured to the lens cap, said spring clip having a split cylindrical portion for frictionally engaging the other end of the lamp to retain the lens cap in position and withdraw the lamp from the receptacle when the lens cap is removed, the sides of said spring clip being slotted to permit expansion of the split cylindrical portion.

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