Feb. 26, 1957 E. S. WOOD, JR 2,783,364

ILLUMINATED LUG WRENCH ATTACHMENT

Filed May 26, 1955

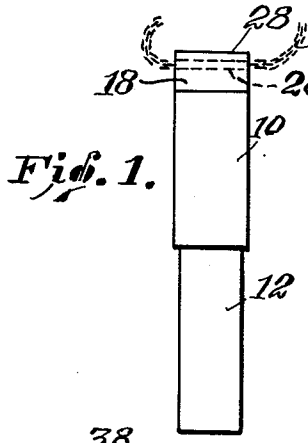


Fig. 1.

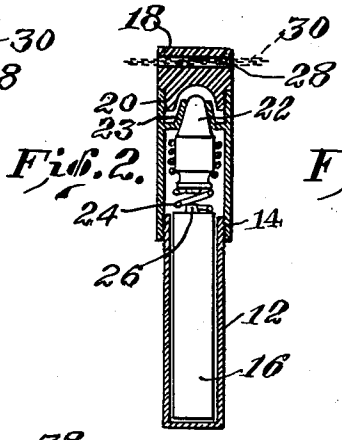


Fig. 2.

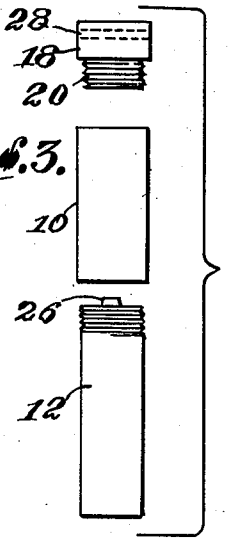


Fig. 3.

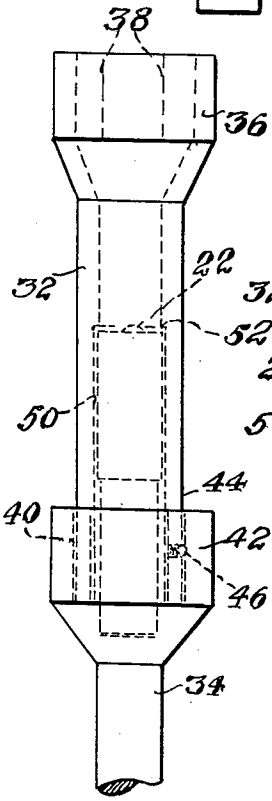


Fig. 4.

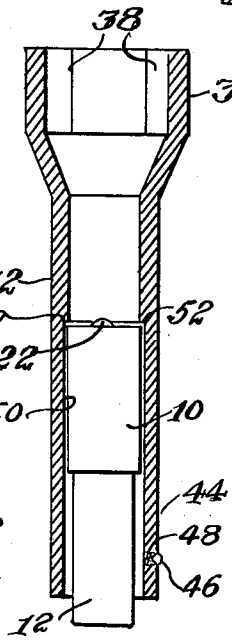


Fig. 5.

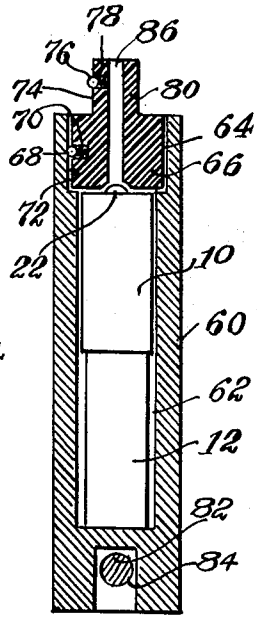


Fig. 6.

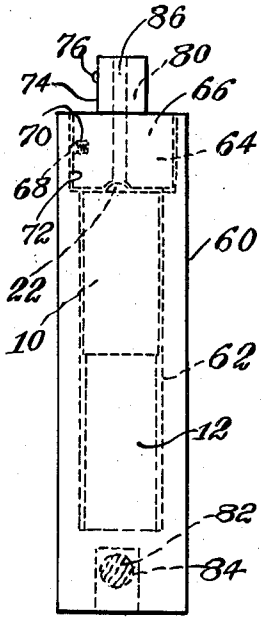


Fig. 7.

Fig. 10.

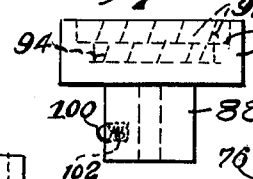


Fig. 8.

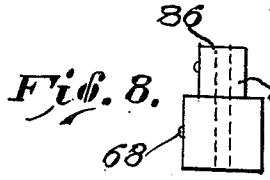
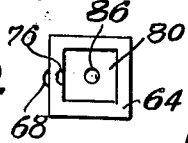


Fig. 9.



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ILLUMINATED LUG WRENCH ATTACHMENT

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Application May 26, 1955, Serial No. 511,144

2 Claims. (Cl. 240—6.46)

This invention relates to an illuminated lug wrench attachment which is adapted to be used with various tools.

An object of the invention is to provide a combined lug wrench attachment and utility light therefor which light may be quickly removed from the lug wrench for other uses.

Another object of the invention is to provide an improved light structure which is adaptable for insertion within a lug wrench attachment and which may be used without the lug wrench attachment.

Other objects will be apparent from the following specification.

In the drawings:

Figure 1 is a front elevation of the flashlight for use with the attachment;

Figure 2 is a vertical sectional view of the structure shown in Figure 1;

Figure 3 is an exploded view of the parts in detached position;

Figure 4 is a side elevation of the lug wrench attachment, with a lug wrench, the latter being partly broken away;

Figure 5 is a vertical sectional view of the lug wrench attachment;

Figure 6 is a vertical sectional view of a modified form of lug wrench attachment;

Figure 7 is a side elevation of the structure shown in Figure 6;

Figure 8 is a side elevation of a second modification;

Figure 9 is a top plan view of the structure shown in Figure 8; and

Figure 10 is a side elevational view of a third modification of the invention.

Referring to the drawings, Figures 1–3 illustrate the flashlight. This comprises an upper barrel **10** and a lower barrel **12** which are drawn to each other, as shown in Figures 2 and 3, by cooperating screw threads **14**. The lower barrel **12** is provided with a battery **16**, and the upper barrel **10** has a transparent cap **18** which may be attached to or detached from the barrel **10** by cooperating screw threads **20**. The upper barrel houses the bulb or lamp **22** which is frictionally supported by the spring **24**, as shown in Figure 2. When the lower barrel **12** is screwed into the upper barrel **10**, an electrical connection may be made between the contact **26** of the battery **16** and the lamp bulb **22**. It will be noted that the cap **18** is provided with a transverse aperture **28** for the reception of a key chain **30**. The bulb **22** is prevented from moving out of the casing by the circular flange **23** which is integral with the barrel, as shown in Figure 2.

When the lamp bulb is illuminated, the rays of light shine through the transparent cap **18**. This unit as a whole may be inserted in the structures illustrated in Figures 4–7, inclusive, for the purpose of illuminating the socket shown in Figures 4 and 5 or the boss shown in Figures 6 and 7.

Referring to Figures 4 and 5, the numeral **32** indicates a lug wrench attachment for the lug wrench **34**, shown in Figure 4. This attachment includes an expanded head member **36** having a plurality of faces **38** corresponding to the faces **40** of the lug wrench head member **42**. This latter is adapted to receive the multi-sided lower end **44** of the said attachment **32**. This end **44** is provided with a ball **46** which is spring pressed outwardly by the spring **48** shown in Figure 5.

It will be noted that the lug wrench attachment has a longitudinal channel **50**, the intermediate portion of which is provided with a shoulder **52** forming a stop for the upper barrel **10**. It will be further noted that when the flashlight is inserted in the underside of this channel, the cap **18** has been previously removed.

After the flashlight has been inserted in the lug wrench attachment, the lug wrench attachment is lowered into head member **42** so that the squared sides will engage the squared sides of the head member and when the socket member is rotated such rotation will rotate the attachment. Previously to this time, however, as indicated above, the flashlight has been inserted within the lug wrench attachment as shown in Figures 4 and 5, with the light bulb illuminated. Such illumination of the light bulb may be obtained by merely rotating the lower barrel **12** within the upper barrel **10** so that the contact **26** will engage the light bulb **22**, which operation takes place before the light is inserted in the channel **50**. After this operation has taken place, the attachment is seated within the head member **42**, whereupon the head **36** is caused to engage the lug. Rotation of the lug wrench **34** will therefore cause rotation of the head **36** and the nut engaged thereby. The light source directly illuminates the area surrounding the nut, so that head **36** may readily be engaged with the same.

A similar arrangement is shown in the modification illustrated in Figures 6–9, inclusive, wherein the utility light **60** is provided with a recess **62** for the reception of the flashlight barrels **10** and **12**. It will be noted that the cap **18** has been removed at this time as was the case when the device was used in the structure shown in Figures 4 and 5. When the flashlight has been dropped within the recess **62**, and assuming the barrels **10** and **12** have been rotated prior to such disposition of the light in said recess, to cause the light **22** to be illuminated, the light is in position to illuminate, with a fine pencil of light, an object which it is desired to inspect. This is particularly true of a device which is intended to be engaged by the adapter **64**. This adapter is provided with an enlarged multi-sided head **66** having a spring pressed ball **68** urged outwardly by a spring **70** to engage the inner shoulder wall **72** of the utility light. The adapter is provided with an adapter head **74** which is preferably multi-sided but which, like the other head **66**, may be oval or non-circular, for engagement with the socket of a tool or part of a machine. The adapter head is provided with a ball **76** which is urged outwardly by the spring **78** whereby to prevent unintentional detachment of the parts.

Both the adapter **64** and its head **66** are provided with a section of transparent plastic indicated generally by the numeral **80** to thereby permit the transmission of light from the bulb **22** to the surrounding parts of the mechanism to be worked upon.

The structure illustrated in Figures 6 to 9 may be rotated by transverse pin **82** that extends through apertures **84** in the base of the utility light **60**.

Referring again to Figures 6–9, it will be noted that the adapter **64**, including the head thereof, is provided with a longitudinal aperture **86** which permits light beams to pass directly from the light source through the

longitudinal aperture to the socket or other part into which the head **66** is to be inserted.

The adapter shown in Figure 10 is similar to the adapter shown in Figures 8 and 9, but instead of providing a head **66**, a socket is provided. As shown in this figure, the adapter is indicated at **88** and includes a head **90** having multi-sided sockets **92** and **94** of different sizes, for different sized lugs. These sockets are separated from each other by the shoulder **96**.

Figures 6 and 7 show structures the same as or similar to that shown in Figures 8 and 9 but it will be appreciated that the adapter **88**, shown in Figure 10, may readily engage within the inner shouldered wall **72** of the casing **60**, and it is held in this position by the ball **100** which is spring pressed outwardly by the spring **102**.

It will be appreciated therefore that I have devised an exceedingly simple flashlight combination which is adapted to be used as a flashlight per se, the cap of which may support a key chain, and when the barrels **10** and **12** are relatively rotated, will illuminate by means of rays passing from bulb **22** through transparent cap **18** to the keyhole and/or key. The flashlight may be conveyed in the pocket or purse of the user or to assist in locating the keyhole and proper key for insertion therein. Should the user require the light for illuminating tools of the type shown in Figures 4–10, the cap **18** is removed from the flashlight and the flashlight is slid within the structures **32**, shown in Figures 3, 4 and 5, or **60**, shown in Figures 6 and 7.

The above description and drawings disclose several embodiments of the invention, and specific language has been employed in describing the several figures. It will, nevertheless, be understood that no limitations of the scope of the invention are thereby contemplated, and that various alterations and modifications may be made such as would occur to one skilled in the art to which the invention relates.

I claim:

1. A combination illuminated lug wrench attachment comprising a casing having a head member, said head member being provided with an interior surface adapted to engage a lug, said attachment having a multi-sided end portion at the side opposite of said head member whereby said end portion may be engaged by a tool, said attachment having an intermediate portion, a longitudinal channel in said intermediate portion having a circular shoulder, a self-contained flashlight adapted to be slidably fitted within said channel and adapted to engage said shoulder, said flashlight comprising a pair of sleeves threadedly engaging each other, a battery in one of said sleeves, a bulb at one end of the other of said sleeves, switch means, said switch means being operable by relative rotative movement of said sleeves to connect said battery to said bulb.

2. The structure of claim 1 wherein the bulb end of said other sleeve is provided with screw threads for the attachment of a screw-threaded light emitting cap.

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