

Technical Description of the Maglite Brand

Maglite RL 1019 Flashlight

Erick Puntiel

City College of New York

Author's Note

This paper was prepared for English 21007 taught by Professor Susan Delamare.

Questions relating to this paper should be addressed to:

epuntie000@citymail.cuny.edu

Table of Contents

Abstract3
Introduction4
Background.....5
List of Parts and Functions6
Conclusion13
List of Figures14
References.....15

Abstract

The purpose of this paper is to examine the parts of a Maglite RL 1019 Rechargeable Flashlight. The name of the parts, their measurements, as well as their functions will be stated. This paper will give a brief review of the history of the flashlight, as well as brief review of developments in flashlight technology.

Introduction

Flashlights are used in order to provide a controllable and portable source of light. The Maglite RL 1019 comes in a variety of colors, with black being the standard. It weighs about 28 oz. with the batteries equipped. It is 12.8125 inches in length, 1.5 inches in diameter across the barrel and 2.25 inches in diameter across the lens. The flashlight's simple one-button design can be attributed to its various parts and how they function together. This technical description will focus on the various parts of the Maglite RL 1019 and their purpose (Mag Charger, n.d.).



Background

Light has played an important role throughout human history. Prior to the invention of the flashlight, candles and lanterns were used. While these provided light, they were very dangerous as accidents and fires could occur. The first flashlight was built in 1899 by inventor David Misell (Misell, 1899). Early flashlights were very limited by their batteries, as they couldn't produce a continuous beam, only pulses (Flashlight History).

As advancements in batteries came, so did advancements in flashlights. Rather than relying on single-use batteries like other flashlights, the Maglite RL 1019 uses a rechargeable battery. This provides for a more efficient source of power, as rechargeable batteries are cheaper over time and eco-friendlier.

List of Parts and Functions

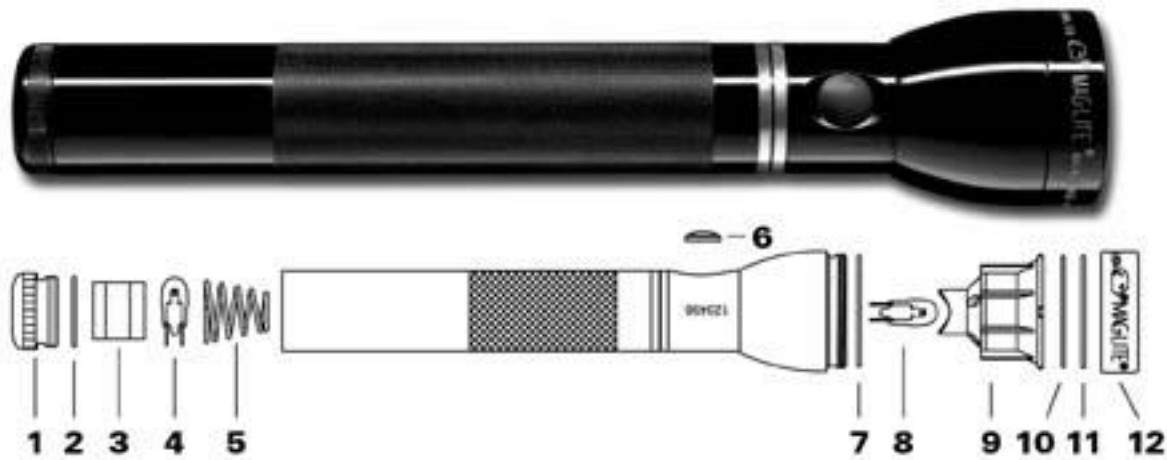


Figure 1: Maglite RL 1019 Flashlight reprinted from Flashlightsales.com (n.d)

- | | | |
|---------------------|-------------------|---------------|
| 1- Tail cap | 5- Battery Spring | 9- Reflector |
| 2- O-Ring, tail cap | 6- Switch seal | 10- Lens |
| 3- Lamp protector | 7- O-Ring, head | 11- Lens seal |
| 4- Spare halogen | 8- Halogen Lamp | 12- Face cap |

1- Tail Cap

The tail cap (fig. 2) is located at the bottom of the flashlight and is made of metal. The purpose of the tail cap is to keep the batteries from falling out and to protect the inside of the flashlight. The tail cap is a circular piece of metal, that is threaded in order to be screwed in. It also has vertical marks to help with grip.



Figure 2: Tail Cap retrieved from Opticsplanet.com (n.d)

2- O-Ring, tail cap

The Maglite RL 1019 has two O-Rings, one on the tail cap and one on the head. The purpose of the O-Ring is to create a seal to prevent water and debris from entering the flashlight. The O-Ring is squeezed in where there is a groove, such as the tail cap and the face cap. The O-Ring takes up the available space and creates a seal. The O-Ring is a thin circular ring made of rubber. This tail ring is fitted between the tail cap and the shaft of the flashlight (fig. 3).

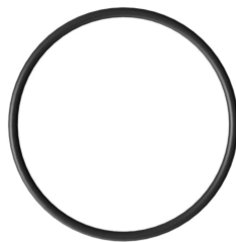


Figure 3: O-Ring retrieved from Amazon.com (n.d)

3- Lamp Protector

The lamp protector's (fig. 4) purpose is to protect the halogen lamp to ensure that the lamp doesn't break in case of the flashlight sustaining damage. The lamp protector is cylindrical piece of plastic which can be fitted over the halogen lamp.



Figure 4: Lamp Protector retrieved from Campsaver.com (n.d)

4- Spare Halogen Lamp

The Maglite RL 1019 comes with two halogen lamps, one already inside the flashlight, and a spare one. The spare halogen lamp (fig. 5) is stored in a compartment within the shaft of the flashlight. The halogen lamp is the source of light. The halogen lamp is a clear light bulb, with two metallic prongs sticking out at the bottom.



Figure 5: Halogen Lamp retrieved from Amazon.com (2015)

5- Battery Spring

The battery spring (fig. 6) helps keep the batteries in place, as well as brings the electrical currents from the batteries to the desired circuit. It allows electricity to travel throughout the flashlight, which allows for the flashlight to be turned on. The battery spring is a thin piece of metallic wire coiled into the shape of a conical spring



Figure 6: Battery Spring retrieved from Campsaver.com (n.d)

6- Switch Seal

The switch seal (fig. 7) is a cover that is put over the on/off button. The switch seal prevents water and debris from entering the on/off button. Since the on/off button is pressed so often, the switch seal also prevents the button from being worn down too quickly. The switch seal is a grey circular button made of rubber.



Figure 7: Switch seal retrieved from Amazon.com (2006)

7- O-Ring, head

This is the second O-Ring present in the Maglite RL 1019. Both O-Rings are identical in appearance and serve the same purpose. This O-Ring (fig. 8) is located between the shaft of the flashlight and the face cap.

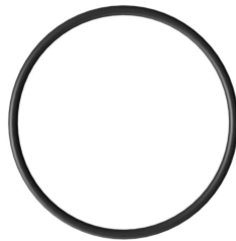


Figure 8: O-Ring retrieved from Amazon.com (n.d.)

8- Spare Halogen Lamp

This is the second halogen lamp (fig. 9) that comes with the Maglite RL 1019. This is the halogen lamp that is used to power the light. Both halogen lamps are identical in appearance and serve the same purpose.



Figure 9: Halogen Lamp retrieved from Amazon.com (2015)

9- Reflector

The reflector (fig. 10) is made up of a reflective material. When the flashlight is turned on, the halogen lamp projects a light and the reflector reflects it. The reflection of the light is what intensifies the beam of light, as well as gives us a concentrated beam of light. The reflector has a short cylindrical neck, and the body flares out to form a cone.



Figure 10: Reflector retrieved from Zbattery.com (n.d)

10- Lens

The lens (fig. 11) is a piece of glass that is fitted over the reflector. The lens protects the reflector and the lamp, as well as prevents both from getting dirty or damaged. The lens is a thin circular

piece of glass. It has a diameter of 2.05 inches, and a thickness of 0.08 inches. (Maglite Glass Lens)



Figure 11: Lens retrieved from Brightguy.com (n.d)

11- Lens Seal-

The lens seal (fig 12.) is put between the lens and the face cap. It is a buffer between the delicate glass of the lens and the hard aluminum of the face cap. The lens seal is a thin circular ring made of rubber.



Figure 12: Lens seal retrieved from Cheaperthandirt.com (n.d)

12- Face Cap-

The face cap (fig. 13) is fitted over the lens seal and the lens to prevent it from moving. Similar to the tail cap, the lens cap is screwed on and also helps protect the flashlight. It is a thick black ring with the words “MAGLITE AA” written on it. It is also threaded in order to be screwed in.



Figure 13: Face cap retrieved from Opticsplanet.com (n.d)

Conclusion

Flashlights are extremely useful and invaluable tools. They can be used in the workforce, as well in our personal homes. The sturdy construction of the Maglite RL 1019 makes it suitable for both.

While many modern phones offer a flashlight option, the beams of light are often not strong enough or concentrated enough. Having a dedicated tool as a source of light can prove to be worth it in case of a power outage, and of course flashlights are irreplaceable in the workforce.

List of Figures

Figure 1 Maglite RL 1019 With Parts Labeled
 Figure 2 Tail Cap
 Figure 3 O-Ring, tail
 Figure 4 Lamp Protector
 Figure 5 Spare Halogen Lamp
 Figure 6 Battery Spring
 Figure 7 Switch Seal
 Figure 8 O-Ring, head
 Figure 9 Halogen Lamp
 Figure 10 Reflector
 Figure 11 Lens
 Figure 12 Lens Seal
 Figure 13 Face Cap

References

Flashlight History - Who Invented Flashlight? (n.d.). Retrieved from

<http://www.historyoflighting.net/electric-lighting-history/history-of-flashlight/>

Maglite Aa Face Cap - Black 203-000-004 Color: Black (n.d.).

[Figure] Retrieved April 6, 2020, from www.opticsplanet.com/maglite-aa-face-cap-black.html.

MagLite Bulb Protector AA Mini Mag 108-000-062 (n.d.).

[Figure] Retrieved April 4, 2020, from www.campsaver.com/maglite-bulb-protector-aa-mini-mag.html.

Maglite C-Cell Springs 108-000-033 (n.d.)

[Figure] Retrieved April 4, 2020, from www.campsaver.com/maglite-c-cell-springs.html

Mag Charger® LED Rechargeable System (n.d.).

Retrieved April 4, 2020, from https://maglite.com/products/mag-charger-led-rechargeable-system?_pos=10&_sid=4705767a1&_ss=r

Maglite D Cell LED Reflector (n.d.).

[Figure] Retrieved April 4, 2020, from zbattery.com/Maglite-D-Cell-LED-Reflector.

Maglite D Size Switch Seals (2006.)

[Figure] Retrieved April 2020, from www.amazon.com/MagLite-D-size-Switch-Seal/dp/B0002TXTAM.

Maglite Glass Lens (n.d.).

[Figure] Retrieved April 4, 2020, from www.brightguy.com/product/maglite-glass-lens/.

Mag-Lite LR00001 Replacement Halogen Lamp for Mag-Lite Rechargeable Flashlight (2015)

[Figure] Retrieved April 4, 2020, from www.amazon.com/Mag-Lite-LR00001-Replacement-Rechargeable-Flashlight/dp/B0085DEGTK

Maglite Tail Cap, Black 200-000-100 Color: Black (n.d.).

[Figure] Retrieved April 4, 2020 from <http://www.opticsplanet.com/maglite-tail-cap-black.html>

Misell, D. (1899, January 10). D. Misell Electric Device. Retrieved from

<https://patents.google.com/patent/US617592A/en>

Weltool Maglite Flashlight Barrel and Facecap O Ring for Mag Lite Magcharger (n.d.).

[Figure] Retrieved April 4, 2020, from www.amazon.com/Weltool-Maglite-Flashlight-Magcharger-Incandescent/dp/B078PJ27NK.