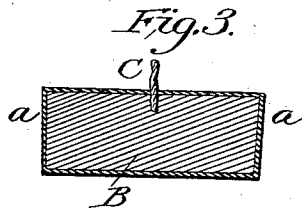
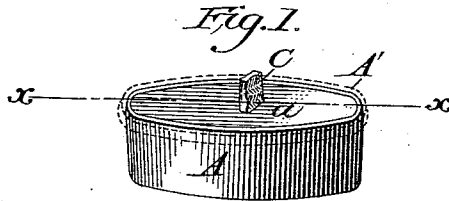
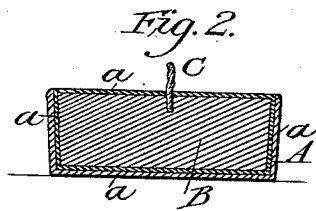


(No Model.)

W. H. FULLER.  
MAGNESIUM LIGHT.

No. 386,875.

Patented July 31, 1888.



Witnesses.  
James D. Griswold.  
Monica J. Roach.

Inventor.  
Willard H. Fuller.  
By his attorneys,  
Lifford & Brown.

# UNITED STATES PATENT OFFICE.

WILLARD H. FULLER, OF PASSAIC, NEW JERSEY, ASSIGNOR TO THE SCOVILL  
MANUFACTURING COMPANY, OF NEW YORK, N. Y.

## MAGNESIUM LIGHT.

SPECIFICATION forming part of Letters Patent No. 386,875, dated July 31, 1888.

Application filed October 31, 1887. Serial No. 253,820. (No model.)

*To all whom it may concern:*

Be it known that I, WILLARD H. FULLER, of Passaic, in the county of Passaic and State of New Jersey, have invented a certain new and useful Improvement in Magnesium Lights, of which the following is a specification.

My improvement relates more particularly to magnesium lights for use in photography. I will describe the improvement in detail, and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a perspective view of a device embodying my improvement and a cover therefor, shown in dotted outline. Fig. 2 is a vertical section of the same, taken on the plane of the dotted line *x x*, Fig. 1. Fig. 3 is a similar sectional view showing a modification.

Similar letters of reference designate corresponding parts in all the figures.

Referring to Figs. 1 and 2, A designates a case or shell. It is shown as cup-shaped or having an open top. It may be made of metal, wood, paper, or other suitable material. A cover, A', for the case or shell may be employed. I have illustrated a cover therefor in dotted outline in Fig. 1.

B designates gun-cotton contained within the case or shell A. Combined with the gun-cotton is magnesium. The magnesium may be thus combined by placing it upon the top of the gun-cotton, or it may be mixed with the gun-cotton. I have found suitable proportions of these materials to be twenty grains of gun-cotton to fifteen grains of magnesium; but I do not wish to be limited to these proportions.

Outside the gun-cotton and magnesium I apply a coating of collodion or equivalent material. The collodion may entirely surround the gun-cotton and magnesium, or it may, if desirable, be applied to the top portion thereof only. I have illustrated the collodion on a somewhat exaggerated scale at *a* as entirely surrounding the gun-cotton and magnesium.

Combined with the gun-cotton and magnesium is a fuse, C. This fuse may be of the usual or any desired kind, and may be arranged in any suitable relation to the gun-cotton and magnesium. As here shown it is embedded for a distance in the gun-cotton and magnesium at about the center of the latter, and extends partly beyond the same into a

convenient position to be lighted. I do not deem it wholly essential, however, to use a fuse.

If desirable, the bottom of the case or shell may be weighted or made heavier than the balance in order that if the device should be thrown or dropped it would readily assume an upright position. The case or shell not only serves to retain the contents but protects an object upon which it may rest from fire when the magnesium and gun-cotton are ignited.

In Fig. 3 I have shown the gun-cotton and magnesium as surrounded entirely by a coating of collodion or equivalent material. In this case the collodion itself constitutes the case or shell. This form of the device can be used to advantage under certain circumstances. This light is intended for use in photographing objects at night or in dark places. It emits a sudden and very powerful light, sufficient for the purpose specified. It is compact and inexpensive and may be conveniently carried about the person.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a case or shell, of gun-cotton and magnesium contained therein, and a coating of collodion or equivalent material outside the gun-cotton and magnesium, substantially as specified.

2. The combination, with a case or shell, of gun-cotton and magnesium contained therein, a coating of collodion or equivalent material outside the gun-cotton and magnesium, and a fuse, substantially as specified.

3. The combination, with a case or shell, of gun-cotton and magnesium contained therein, a coating of collodion or equivalent material entirely surrounding the gun-cotton and magnesium, and a fuse, substantially as specified.

4. The combination, with a case or shell weighted at the bottom, of gun-cotton and magnesium contained therein, a coating of collodion or equivalent material outside the gun cotton and magnesium, and a fuse having a portion embedded in the mass of gun-cotton and magnesium and a portion extending above the surface thereof, substantially as specified.

WILLARD H. FULLER.

Witnesses:

H. LITTLEJOHN,  
H. P. SEE, Jr.