

P. M. WILLIS.
 SELF LUMINOUS WRITING AND READING DEVICE.
 APPLICATION FILED NOV. 17, 1917.

1,373,783.

Patented Apr. 5, 1921.

Fig. 1.

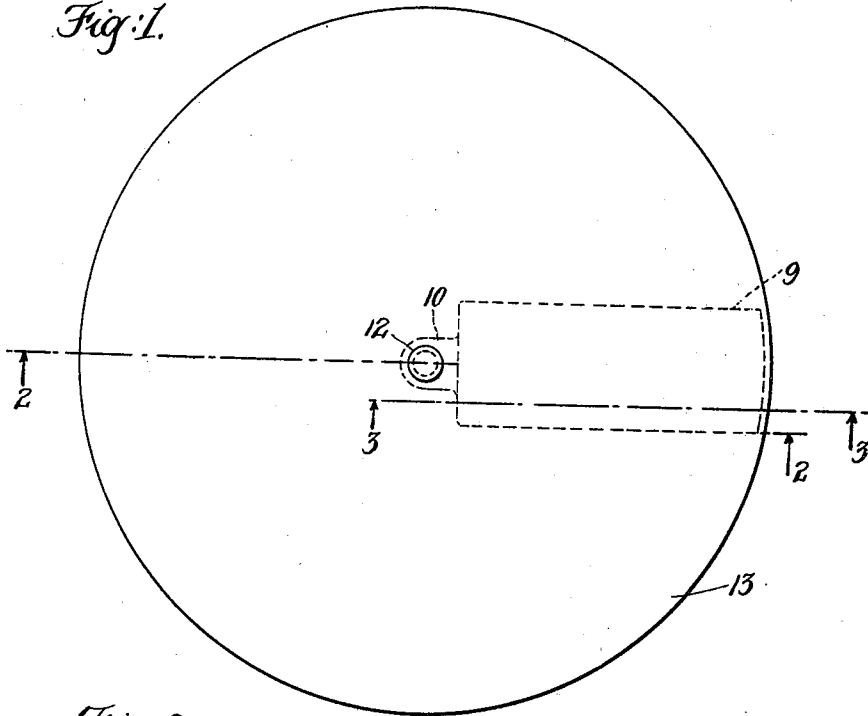


Fig. 2.

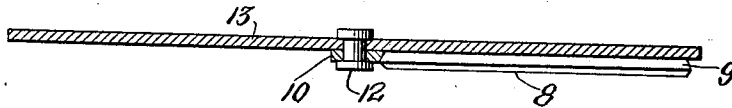


Fig. 3.

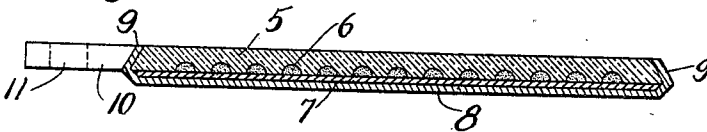
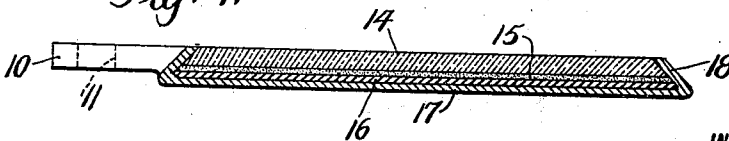


Fig. 4.



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SELF-LUMINOUS WRITING AND READING DEVICE.

1,373,783.

Specification of Letters Patent.

Patented Apr. 5, 1921.

Application filed November 17, 1917. Serial No. 202,608.

To all whom it may concern:

Be it known that I, PAUL M. WILLIS, a citizen of the United States, residing at Orange, in the county of Essex and State of New Jersey, have invented a certain new and useful Self-Luminous Writing and Reading Device, set forth in the following specification and illustrated in the accompanying drawings.

- 10 This invention is a self-luminous device for military or general use. Its object is to provide a simple and compact instrument which can be employed in the dark for making or reading notations and computations
15 without recourse to any light extraneous to the device itself, and to provide a self-luminous device which can be conveniently employed in many circumstances for night signaling over short distances or for marking
20 the location of objects or persons and for various other purposes which may be served by a self-luminous article.

The invention is exemplified in the accompanying drawings in which—

- 25 Figure 1 is a plan view of one form of the invention;

Fig. 2 is a transverse sectional view of the device of Fig. 1, taken on the section line 2, 2 of Fig. 1.

- 30 Fig. 3 is a sectional view of the self-luminous pivoted plate of Figs. 1 and 2, taken on the section line 3, 3 of Fig. 1; and

Fig. 4 is a similar sectional view of a modified form of the self-luminous pivoted
35 plate.

- In the device of Figs. 1, 2 and 3, an oblong beveled glass plate 5 is provided with parallel grooves 6 in one surface. These grooves are filled with radio-active self-luminous material. A backing sheet 7 is held against the grooved surface of the glass plate, being in this instance a compressible white or light-reflecting paper sheet compressed between the glass plate and a metal
40 backing plate 8 having its margin 9 crimped or bent over the beveled edge of the glass. Also the backing sheet 7 may be suitably cemented to the flat surfaces of the glass plate between its grooves.

- 50 This scheme will retain the radio-active self-luminous material in powder form without the admixture of an adhesive agent into the powder, which generally impairs its self-luminous efficiency. The masses of self-

luminous material retained in the holding grooves will generally be in themselves transparent or translucent and the light-reflecting sheet 7 will economize their light by reflecting it back through the self-luminous material and through the glass plate 5
60 to its outer surface.

The outer surface of the glass plate 5 may be ground or otherwise made suitable for receiving chirographic or other characters.

A lug 10 may be secured to the margin of the metal backing plate 8, and may be perforated as at 11. By this lug the self-luminous plate may be conveniently secured to a person or object, for instance it may be hung on the back of an officer leading men through
70 the trenches or on patrol. Also the device thus constituted may be used as a signal light over short distances.

By means of the perforated lug 10 and a suitable bolt 12 the self-luminous plate may
75 be detachably pivoted to the central perforation in the disk 13 of celluloid or other light-transmitting material, so that the self-luminous plate may swing about the entire under surface of the disk with its illuminating
80 glass plate 5 in contact therewith. Thus the entire disk may be illuminated in successive portions by light transmitted through it, and the disk may be suitably translucent and adapted to receive on its upper surface the
85 marks of a pen or pencil and to permit of their easy erasure. The entire device thus assembled may be used as a signal or marker as mentioned of the self-luminous plate
90 separately.

In the modification of the self-luminous plate shown in Fig. 4, the self-luminous powder 15 is compressed between a smooth glass plate 14 and a compressible light-reflecting back sheet 16 retained by the metal
95 backing plate 17.

The invention may be practised in other ways within the scope of the following claims.

1. A device comprising a transparent
100 plate with recesses in one surface, a reflecting backing cemented to said recessed surface of the transparent plate, and self-luminous powder in said recesses.

2. A device comprising a transparent
105 plate with recesses in one surface, a backing-plate secured thereto adjacent its recessed surface, a compressible backing compressed

between said backing-plate and said recessed surface of the transparent plate, and self-luminous material in said recesses.

3. A device comprising a transparent
5 plate with grooves in one surface, a backing-plate secured thereto adjacent its grooved surface, a reflecting compressible backing compressed between said backing plate and the grooved surface of the transparent plate,
10 and self-luminous powder compressed in said grooves.

4. A device comprising a light-transmitting plate, and a self-luminous plate of lesser area pivoted on one side thereof in
15 position to swing into register with successive portions of the light-transmitting plate.

5. A device comprising a translucent plate with a writing surface adapted for receiving marks from a writing instrument, and a self-luminous member pivoted to said
20 plate adjacent to its surface opposite its said writing surface.

6. A device comprising a light-transmitting writing platen, and a self-luminous member movably connected under said
25 platen by means permitting said member to move under and illumine successive portions thereof.

In testimony whereof, I have affixed my signature to this specification.

PAUL M. WILLIS.