No. 887,032. PATENTED MAY 5, 1908.

H. L. DE ZENG.

OPHTHALMOSCOPE.

APPLICATION FILED JAN. 6, 1908.

Fig. 1.

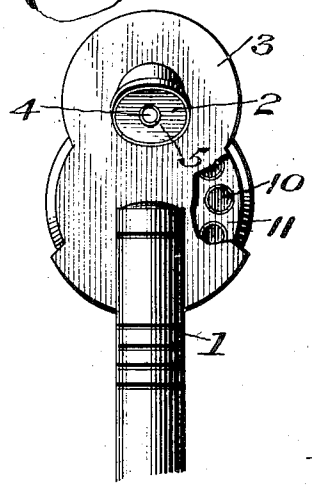


Fig. 3.

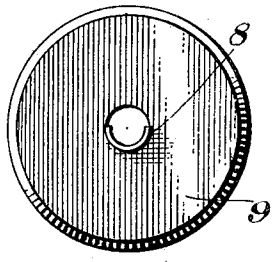


Fig. 2.

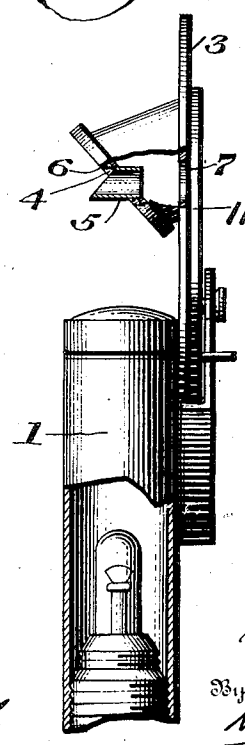


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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OPHTHALMOSCOPE.

No. 887,032. Specification of Letters Patent. Patented May 5, 1908.

Application filed January 6, 1908. Serial No. 409,406.

To all whom it may concern:

Be it known that I, HENRY L. DE ZENG, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Ophthalmoscope, of which the following is a specification.

My invention relates to a new and useful reflector for ophthalmoscopes, retinoscopes, head mirrors, etc., having means for preventing the rays from the light source from reaching the eye of the operator or user.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

Figure 1 represents a front elevation of a portion of an ophthalmoscope embodying my invention. Fig. 2 represents a sectional view on an enlarged scale. Fig. 3 represents a reflector provided with a guard. Fig. 4 represents a perspective view of a guard which may be employed.

I have found in practice in the use of ophthalmoscopes, retinoscopes, head mirrors, etc., for diagnostic work, that when the light strikes a perforated reflector it also strikes the edge of the opening through which the operator is looking. This causes a reflection of the light to enter the eye of the operator and prevents him from seeing clearly. My invention is designed to overcome this defect and in the drawings, I have shown a construction for carrying out my invention but it will be evident that the arrangement of the parts may be varied and other instrumentalities may be employed which will come within the scope of my invention and I do not therefore desire to be limited in every instance to the exact construction as herein shown and described but desire to make such changes as may be necessary.

In the construction shown in Figs. 1 and 2, I have shown my invention as applied to the luminous ophthalmoscope in which 1 designates a portion of the handle of the ophthalmoscope in which the electric lamp is preferably incased or seated, said light being preferably beneath a lens which concentrates the light and directs it upon a reflector or mirror 2 from which it is reflected into the patient's eye, as will be evident, said mirror being suitably supported by the plate or body 3 and being provided with the opening 4 which is in alinement with a suitable opening in the plate 3 and through which the operator makes the examination. I find in practice that in devices of this kind the light striking the edge of the opening 4, in the reflector 2, will cloud the vision of the operator. In order to overcome this defect, I provide a guard or protector 5, which in Fig. 2 is shown as a tube or shield which projects a suitable distance and prevents the rays of light from the lamp from reaching the wall 6 of the opening 4. The operator can thus have a clear vision through the opening 7 in the plate 3 and through the tube 5 or over the shield without any possibility of the rays of light striking the edge 6 of the opening 4 and being reflected into his eye. In place of the tube, I may make the guard or protector in any form, as for example in the form shown in Fig. 4, which is a curved plate or part of a tube 8 adapted to be seated in the opening 4. In Fig. 3, I have shown an ordinary head mirror 9 which can also be provided with the guard or protector 8, as described.

The guards or protectors can be supported in the openings in any desired and necessary manner and it will be understood that any size or shape may be employed which may be necessary and may be applied to any device which reflects light and permits examinations therethrough.

As will of course be understood, the ophthalmoscopes are provided with a series of lenses 10 which are suitably mounted or supported, in the present instance, in the disk 11, so that they can be brought successively into alinement or registered with the opening 4 in the reflector 2 and the opening 7 in the plate 3 through which the operator looks.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A reflecting device having a perforation and a guard or shield for said perforation.

2. A reflecting device having a perforation and a guard or shield suitably supported by said device for preventing the rays of light from striking the wall of said perforation.

3. In a device of the character described, a source of light, a reflector having a perforation therethrough, and means for preventing the rays from said light source from directly entering said perforation.

4. In a device of the character described, a source of light, a reflector having a sight opening therein, and means located therein for preventing the rays from said light source from striking the wall of said opening.

5. In a device of the character described, a source of light, a reflector having an opening therein, a series of lenses suitably supported and adapted to be brought into alinement with said opening, and means for preventing the rays from said light source striking the wall of said opening.

6. A reflector having means for viewing the object therethrough and means for preventing the rays from a light source from directly striking said first mentioned means.

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Witnesses:
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