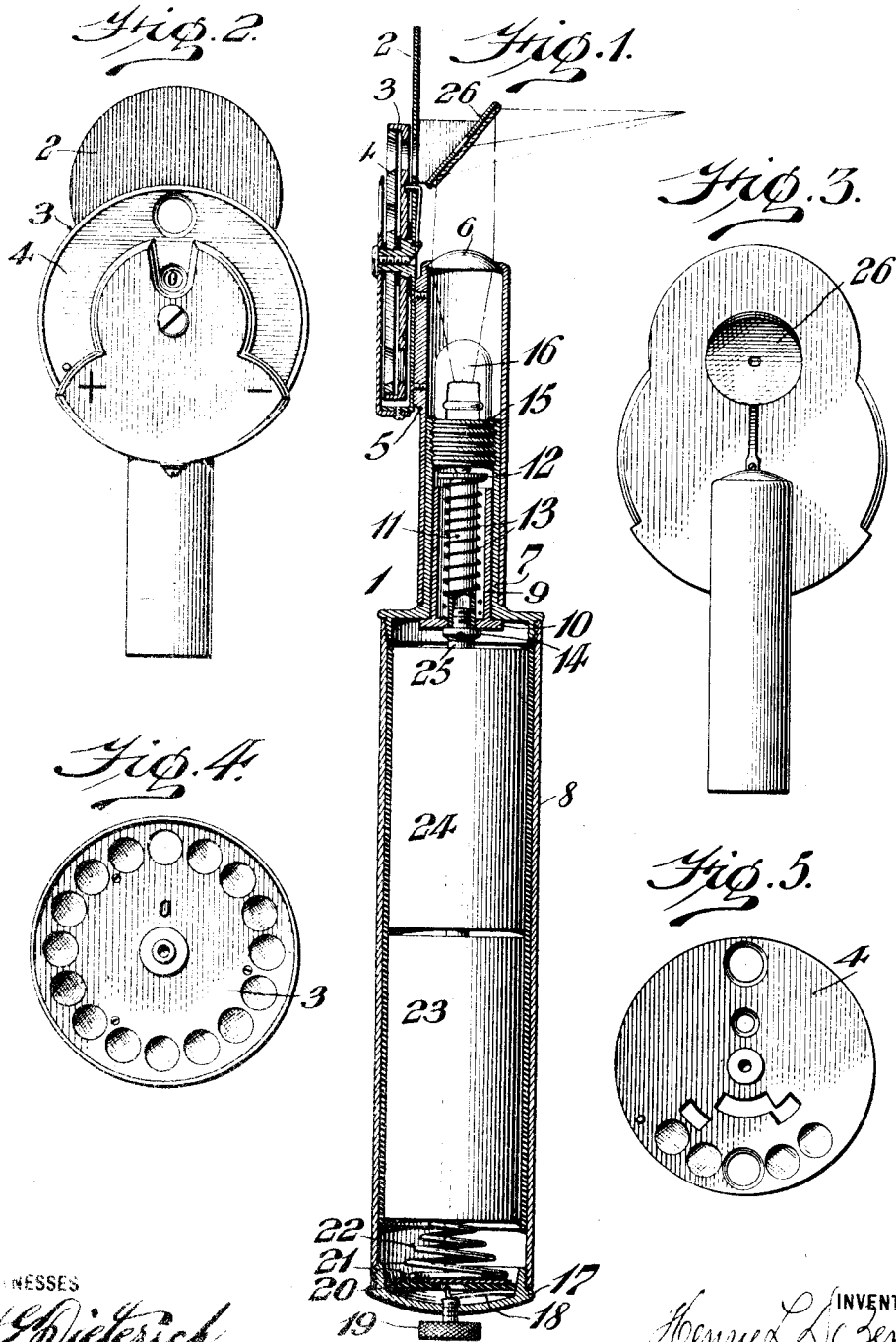


H. L. DE ZENG.
OPHTHALMOSCOPE.
APPLICATION FILED JULY 8, 1910.

1,066,386.

Patented July 1, 1913.



WITNESSES

W. H. Dieterich
L. Douville.

BY

Henry L. De Zeng.
Wiederheim Fairbanks.

ATTORNEYS

UNITED STATES PATENT OFFICE.

HENRY L. DE ZENG, OF MAPLE SHADE, NEW JERSEY.

OPHTHALMOSCOPE.

1,066,386.

Specification of Letters Patent.

Patented July 1, 1913

Application filed July 8, 1910. Serial No. 570,933.

To all whom it may concern:

Be it known that I, HENRY L. DE ZENG, a citizen of the United States, residing at Maple Shade, in the county of Burlington, State of New Jersey, have invented a new and useful Ophthalmoscope, of which the following is a specification.

My invention relates to a new and useful ophthalmoscope, wherein I provide an electric lamp and means contained within the instrument for supplying the lamp with the necessary current for lighting it and with means for varying the relative position of the reflector and lamp:

Figure 1 represents a vertical sectional view of an ophthalmoscope embodying my invention. Fig. 2 represents a rear elevation of the upper portion thereof on an enlarged scale. Fig. 3 represents a front elevation of the upper portion of the ophthalmoscope. Fig. 4 represents an elevation of one of the disks in detached position. Fig. 5 represents an elevation of the other disk employed.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—I have found in practice in the ophthalmoscopes now in use, wherein it is necessary to connect the same with a suitable source of current supply, that, in many instances, it is not possible to do so by reason of the fact that the houses or other localities in which the device is to be used, are not supplied with electricity, and furthermore the batteries heretofore employed are large and cumbersome and impractical to carry about from place to place. My invention is designed to overcome these defects and in the drawings I have shown a construction which I have found operates successfully, but it will be evident that changes may be made in the construction, 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 to the exact construction as herein shown and described, but desire to make such changes as may be necessary.

1 designates an ophthalmoscope which is of suitable construction, in the present instance being formed of a casing 2 on which is rotatably mounted the plate or disk 3

having a suitable number of lenses or openings and adjacent which disk is a second plate or disk 4 which is also provided with a suitable number of lenses properly mounted therein and with an opening free from a lens, it being understood that the said plates or disks are provided with proper notations.

In the present instance, the casing 2 is suitably mounted, in any desired manner, upon a sleeve 5, the upper end of which is provided with a condensing lens 6 which is carried or mounted therein in any suitable or desired manner. The sleeve 5 is adapted to receive and to slide upon the tube 7 which in the present instance is in threaded engagement with the handle 8 of the ophthalmoscope, said handle being tubular in form and of any suitable size and diameter. Carried by the tube 7 is a sleeve 9, one end of which is closed, as by an insulator 10, in the present instance, integral with said sleeve 9, and which is provided with an opening through which passes an electrical conductor 11 having a cap 12 adjacent one end and against which cap bears a coil spring 13, the opposite end of which bears against the insulator 10 in order to hold the conductor 11 in its extended position, it being understood that when the conductor is forced downwardly, from the position seen in Fig. 1, the cap 12 abuts the end of the sleeve 9 in order to limit the movement of the said conductor. In the present instance the conductor 11 carries a contact screw 14. The inner portion of the tube 7 adjacent its outer end is threaded in order to receive the threaded base 15 of a lamp 16 which is adapted to be contained in the sleeve 5, as will be evident from Fig. 1. 17 designates a closure for the opposite end of the handle 8, which parts, in the present instance, are in threaded engagement with each other, and said closure carrying a spring arm 18, the free end of which is adapted to be engaged by any suitable means, such as a thumb screw 19, in threaded engagement with the closure 17, in order that the spring arm may be forced inwardly.

20 designates a fiber disk carried by the closure 17, said disk having an opening at a suitable point therein in order to permit movement therethrough of the end of the spring arm 18.

21 designates a metal plate carried upon

the fiber disk 20 and with which plate the spring arm 18 is adapted to contact when suitably actuated therefor.

22 designates a spring seated upon the metal plate 21.

23 designates a battery adapted to be contained within and carried by the handle 8 and one pole of which battery 23 is adapted to be in contact with the spring 22, the other pole of the battery 23 being in contact with a pole of a battery 24 also contained within and carried by the handle 8, the opposite pole 25 of this battery being in contact with the contact screw 14 carried by the conductor 11.

26 designates an oblique mirror carried by the casing 2 of the ophthalmoscope and suitably situated with respect to the condensing lens 6 in order to receive the rays of light therethrough and to reflect the same to a proper point.

It will be understood that the lamp 16 is screwed into the tube 7, causing the contact point of the lamp 2 to abut the cap 12 of the conductor 11, and by reason of the resilient support for the conductor 11, that is spring 13, a suitable amount of play is permitted to said conductor 11 and whereby the lamp can be properly screwed into the tube 7 to prevent injury to the parts and to maintain electrical contact. When the spring arm 18 is out of contact with the metal plate 21, as seen in Fig. 1, the circuit is open and no current is passing to the lamp 6, but when the thumb screw 19 is properly actuated, the end of the spring arm 18 is moved into engagement with the metal plate 21, thus closing the circuit which will be formed by the pole of the lamp contacting with the con-

ductor 11, the latter with the pole 25 of the battery 24, the opposite pole of which battery 24 being in contact with the pole of the battery 23, the opposite pole of said latter battery being in contact with the spring 22 and this latter is in contact with the metal plate 21, with which the spring arm 18 has been forced into contact, so that the circuit passes through the closure 17, handle 8, tube 7 and socket or base 15 of the lamp, which will accordingly be lighted and the rays of which will be directed through the condensing lens 6 to the mirror 26 and so properly reflected.

By reason of the adjustability of the sleeve 5 on the tube 7, the position of the condensing lens 6 with respect to the lamp 16 may be varied as may be necessary, and the projection of the reflected light, governed as desired.

The arrangement and operation of the plates or disks and lenses may be accomplished in any desired manner.

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

In a diagnostic instrument, a handle adapted to carry a source of electric energy, a diagnostic instrument, adjustable members, the inner carried by the handle and the outer supporting said instrument, an electric lamp supported by the said inner member of said adjustable members, and a reflector and a condenser carried by said diagnostic instrument.

HENRY L. DE ZENG.

Witnesses:

F. A. NEWTON,
C. D. McVAY.