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L. L. GAGNON

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DIAGNOSTIC INSTRUMENT

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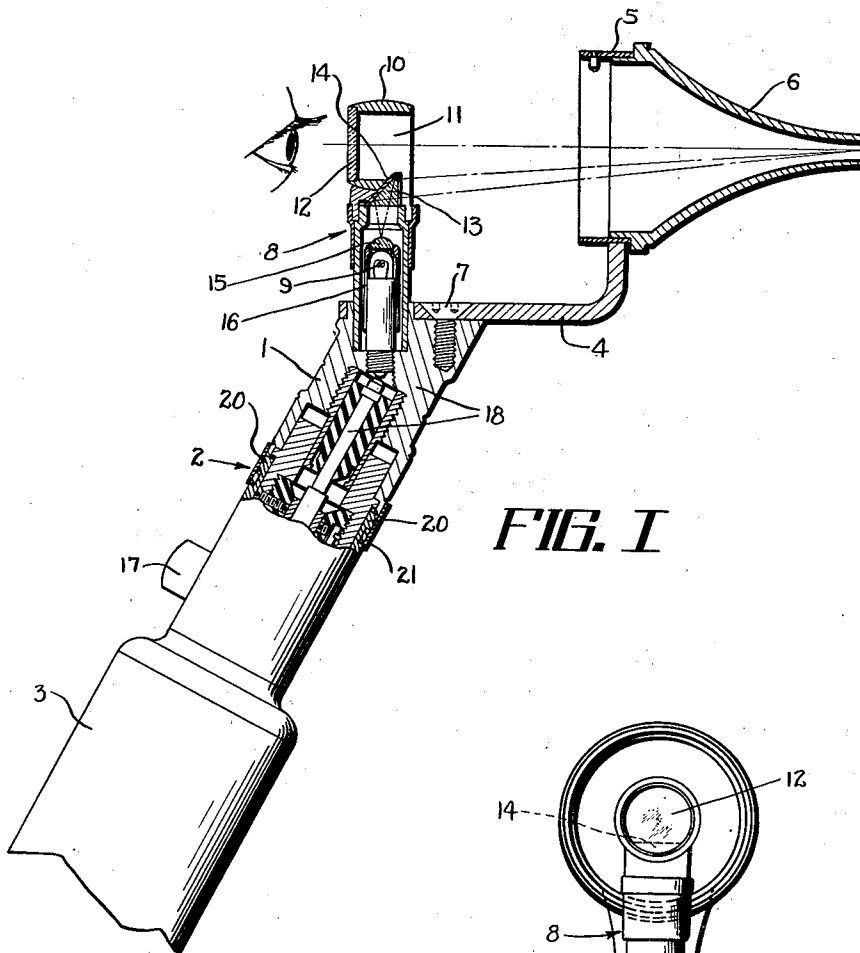


FIG. I

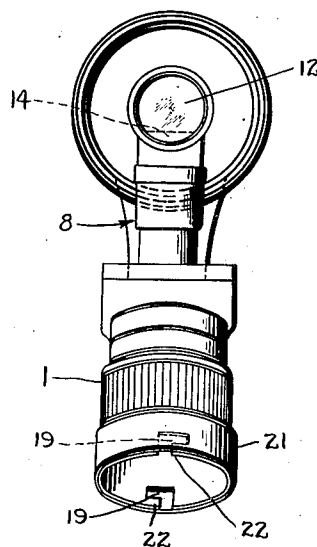


FIG. II

INVENTOR
Louis L. Gagnon.
BY
Harry H. Styll
ATTORNEY

UNITED STATES PATENT OFFICE

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DIAGNOSTIC INSTRUMENT

Louis L. Gagnon, Southbridge, Mass., assignor
to American Optical Company, Southbridge,
Mass., a voluntary association of Massachusetts

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2 Claims. (Cl. 128—9)

This invention relates to improvements in diagnostic instruments and has particular reference to an instrument of the illuminated type for use in making examinations of the aural cavities of the body and the like.

One of the principal objects of the invention is to provide an improved form of illuminated instrument for use in making examinations and aiding in treating diseases of the aural cavities of the body and the like wherein the light from the source of illumination will not in any way reach the eye and restrict or interfere with the vision of the examiner or person using the instrument.

Another object is to provide an instrument of the above character having illuminating means and observing means which will permit the relatively free and easy introduction and manipulation of operating instruments into the speculum of the instrument.

Other objects and advantages of the invention will become apparent from the following description taken in connection with the accompanying drawing, and it will be understood that many changes may be made in the details of construction and arrangement of parts shown and described without departing from the spirit of the invention as set forth in the accompanying claims. I, therefore, do not wish to be limited to the exact arrangement of parts and details of construction shown and described as the preferred form only has been shown by way of illustration.

Referring to the drawing:

Fig. I is a fragmentary side elevation of the instrument embodying the invention and showing portions thereof in cross section; and

Fig. II is an end elevation of the head of the instrument shown in Fig. I.

Some attempts have been made, in the past, to produce a diagnostic instrument wherein the illuminating and observing means would not interfere with the use of operating instruments, but such diagnostic instruments, in most instances, were so constructed that the light rays coming from their source of illumination traversed the line of sight through the observing means prior to being deflected into the speculum of the instrument. This produced an annoying glare which greatly hindered and restricted the vision of the examiner or person using the instrument.

It, therefore, is one of the primary objects of this invention to overcome the glare obstruction or annoyance of prior art instruments of this

character by deflecting the light rays coming from the source of illumination towards the speculum prior to their traversing the line of sight through the observing means of the instrument.

Referring more particularly to the drawing where like characters of reference designate like parts throughout the several views, the device embodying the invention comprises a base 1 having a detachable connection 2 adjacent one end thereof for attachment to a handle 3 and having a support or bracket 4 adjacent its opposite end. The support or bracket 4 is provided adjacent one of its ends with a ring 5 in which a speculum 6 is detachably secured by friction or other suitable attaching means to permit the use of different size speculums. The opposite end of the support or bracket 4 is attached to the base 1 by a screw or other suitable means 7 and has a portion surrounding a housing or casing 8 in which a source of illumination 9 is supported. The housing or casing 8 is anchored in the base 1 and is provided with a detachable cap member 10 having a sight opening 11 therein, the axis of which extends substantially normal to the longitudinal axis of the housing or casing 8 in substantial axial alignment with the longitudinal axis of the speculum 6. A suitable magnifying lens or lens 12 having the prescriptive power required for the correction of the eye of the examiner may be mounted in the sight opening 11 of the cap member 10.

The housing or casing 8 is provided, intermediate the source of illumination 9 and the sight opening 11, with light deflecting or reflecting means 13 such as a prism, angled mirror or other suitable means which is adapted to intercept the light rays coming from the source of illumination 9 and deflect or reflect the said rays in the direction of the longitudinal axis of the speculum 6. This arrangement bends the rays prior to their traversing the longitudinal axis of the sight opening 11 and thereby prevents the said rays entering the eye of the examiner. The light deflecting or reflecting member 13 is provided with an opaque hood 14, formed by a coating of paint, metal or other suitable means adapted to aid in preventing glare from the source of illumination 9 reaching the eye and interfering with the vision of the examiner. A suitable focusing lens 15 is supported by adjustable telescoping means 16 in line with the light rays coming from the source of illumination 9 to provide means for varying the focus of said light rays as desired.

Current for the source of illumination 9 is supplied by a suitable battery, not shown, carried in the handle 3 and controlled by a switch of a rheostat type 17 by means of which the illuminating means may be turned on or off or regulated as to its intensity. The switch 17 is of the prior art type commonly used in instruments of this nature.

The battery or other source of current supply is connected with the source of illumination by conducting means 18.

The attaching means 2 is of the commonly known bayonet type comprising angled slots 19 formed on one of the members 1 and 3 and adapted to receive projections 20 formed on the other of said members. A collar 21 is placed over the slotted portions 19 to provide means for preventing the ends 22 of said portions from being deflected or bent out of position during use. This also is one of the features of applicant's invention.

Attention is directed to the fact that the support or bracket member 4 provides means for holding the speculum 6 in proper alignment and spaced relation with the light deflecting means 13 and sight opening 11 to provide a relatively direct line of sight and clearance for the insertion and manipulation of operating instruments in the speculum. Attention is also directed to the fact that the casing or housing 8 is of such a size as to produce very little interference with the use of operating instruments.

From the foregoing description it will be seen that simple, efficient and economical means is provided for obtaining illumination in an instrument of this character which will not blur or any way interfere with the vision of the observer or examiner.

Having described my invention I claim:

1. In a device of the character described, a base having a handle connection adjacent one end thereof and a bracket adjacent its other end extending outwardly at an angle relative to the longitudinal axis of the base, said bracket having a speculum supporting portion adjacent one end thereof adapted to detachably receive a speculum and having a relatively slender upright casing adjacent its opposite end and in spaced relation with the speculum support, said casing having a light chamber internally thereof and having a light passageway leading from said light chamber, a source of light in said chamber in alignment with the light passageway, a light deflecting member supported in alignment with the light passageway and with the light source adapted to receive the light rays coming through said passageway and deflect said light rays in the di-

rection of the longitudinal axis of a speculum carried by the speculum support, a detachable cap member fitted over the light deflecting means and having a sight opening extending transversely of the longitudinal axis of the casing with the axis of said sight opening substantially coaxial with the longitudinal axis of a speculum carried by the speculum support, said light deflecting means being positioned between the source of light and the sight opening and the said cap like member having an outside dimension substantially equal to the diameter of the casing, the size of said cap-like member and the spaced relation of the casing and speculum support permitting free and easy introduction and manipulation of operating instruments into the speculum of the instrument.

2. In a device of the character described, a base having a handle connection adjacent one end thereof and a bracket adjacent its other end extending outwardly at an angle relative to the longitudinal axis of the base, said bracket having a speculum supporting portion disposed at an angle to said bracket and at an angle to the longitudinal axis of the base adjacent one end of said bracket adapted to detachably receive a speculum and having a casing adjacent its opposite end separate of and in spaced relation with the speculum support, said casing having a light chamber internally thereof and having a restricted light passageway leading from said light chamber, a source of light in said chamber in alignment with the light passageway, a light deflecting member supported in alignment with the light passageway and with the light source adapted to receive the light rays coming through said passageway and deflect said light rays in the direction of the longitudinal axis of a speculum carried by the speculum support, a cap member above and overlying the light deflecting means and having a sight opening extending transversely of the longitudinal axis of the casing with the axis of said sight opening substantially coaxial with the longitudinal axis of a speculum carried by the speculum support, said light deflecting means being positioned between the source of light and the sight opening and the said cap like member having an outside dimension substantially equal to the outside dimension of the portion having the restricted light passageway therein, the size of said cap-like member and the spaced relation of the casing and speculum support permitting free and easy introduction and manipulation of operating instruments into the speculum of the instrument.

LOUIS L. GAGNON.