S. KAPLAN & E. BATAULT.

SPECULUM AND SPATULA.

APPLICATION FILED SEPT. 15, 1906.

949,236. Patented Feb. 15, 1910.

Fig. 1

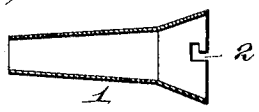


Fig. 2

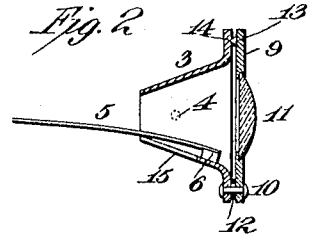


Fig. 3

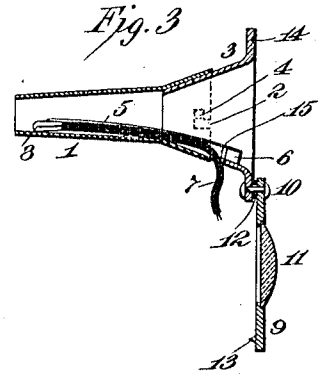


Fig. 4

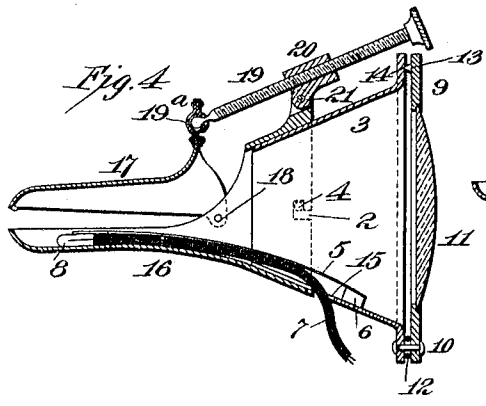


Fig. 5

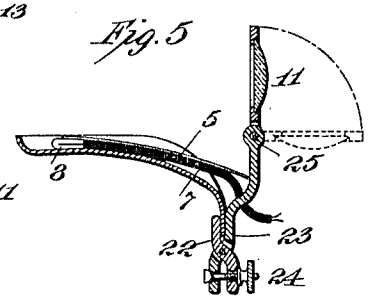


Fig. 6

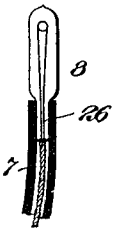


Fig. 7

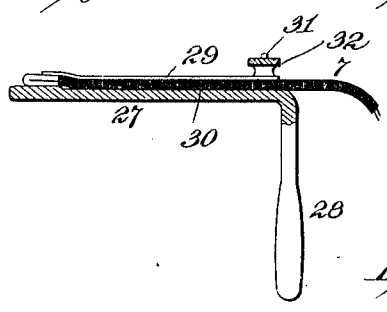


Fig. 8

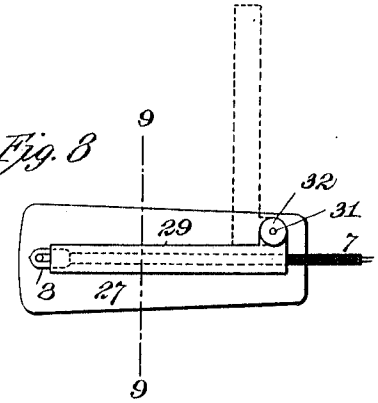


Fig. 9

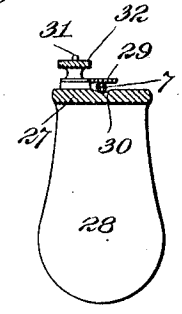
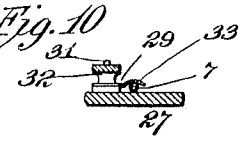


Fig. 10



Witnesses:

Jas. F. Coleman

Samuel C. Pearce.

Inventors

Samuel Kaplan

Emile Batault,

By Dyer & Dyer Attorneys.

UNITED STATES PATENT OFFICE.

SAMUEL KAPLAN AND EMILE BATAULT, OF GENEVA, SWITZERLAND.

SPECULUM AND SPATULA.

949,236. Specification of Letters Patent. Patented Feb. 15, 1910.

Application filed September 15, 1906. Serial No. 334,816.

To all whom it may concern:

Be it known that we, SAMUEL KAPLAN, residing at Geneva, Canton of Geneva, Republic of Switzerland, a citizen of France, and EMILE BATAULT, a citizen of Switzerland, residing at Geneva, Canton of Geneva, Switzerland, have invented an Improvement in Specula and Spatulas, of which the following is a specification.

The object we have in view is the production of a device for bringing light into the inside of specula and spatulas and other similar devices in a simple and practical way, permitting the use of a magnifying lens, for purposes of examination. We attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a section of an ear speculum or otoscope, Fig. 2 is a section of the lamp support and lens to be used with the speculum shown in Fig. 1, Fig. 3 is a section of the parts shown in Figs. 1 and 2, attached together, Fig. 4 is a section of a bivalvular speculum, with the lamp support and lens in place, Fig. 5 is a section of a uni-valvular speculum or spatula with the invention applied, Fig. 6 is a perspective view of one form of electric lamp and conductor for use in the devices illustrated in the other views, Fig. 7 is a sectional view of a modified form of spatula, Fig. 8 is a plan view thereof, Fig. 9 is a section on the line 9—9, Fig. 8, and Fig. 10 a detail of a further modification.

In all of the views like parts are designated by the same reference characters.

In Figs. 1, 2 and 3, the speculum 1 is made in the usual shape of a slightly conical tube ending in a conical bell. This bell is provided with a notch 2 forming a portion of a bayonet-joint. The lamp support 3, having a conical portion so that it can be exactly adjusted within the conical bell of the speculum, is provided with a pin 4, which is adapted to engage with the notch 2, in order to complete the bayonet joint and secure the speculum 1 to the lamp support 3. The lamp support 3 is provided, in addition, with a flat spring 5 which is secured to a block 6, the height of which corresponds nearly to the diameter of the rubber envelop 7 of the flexible conductor of the lamp 8. At its external, wider portion, the lamp support is provided with a cover 9 which is pivotally mounted at 10 and carries at its middle a magnifying glass 11. An elastic ring 12 is placed between the lamp support and the cover so as to produce a friction joint to cause the cover 9 to remain in any desired position. A small catch 13 may be provided to engage within a groove 14 to insure the centering of the lens. In Fig. 3 the cover and lens are shown as turned to one side. In Fig. 2, the lens is shown as centered within the lamp support.

To assemble the apparatus, the lamp is placed under the spring 5, so that it will rest at about the free end of the latter, and the flexible conductor 7 will rest under the spring, and pass out through a slit 15, which is of such a size that the elastic conductor will be slightly compressed therein. The conical portion of the lamp support is then introduced into the speculum 1, so that the pin 4 will engage the notch 2 and both parts will be slightly turned with respect to one another so as to lock the two parts together. The apparatus is then ready for use. The lamp is maintained in the speculum by the flat spring, which may be, if desired, slightly incurved over the lamp. The conductor 7 is secured within the slit 15 by frictional contact therewith, but the parts being frictionally secured in position, the location of the lamp is not absolute, and may, to a certain extent, be regulated according to the wish of the operator; if he so desire, it may be placed farther in or out of the speculum 1. It will be seen that the character and shape of the speculum may be varied without changing the shape of the lamp support. Therefore one support may be used with a number of specula of different sizes and shapes, provided that their conical bells fit the lamp supports.

In the bi-valvular speculum illustrated in Fig. 4, the lower or fixed valve 16 is provided with a conical bell, which receives a lamp support 3 identical to the one described before. In this form of speculum, the valve 17 is pivoted upon the first as is usual, by means of the pivot 18, and is moved by means of the screw 19 which is attached to the valve 17 by a universal joint 19^a, and is supported within a nut 20, which is connected to the valve 16 by the pivot 21. The attachment of the lamp in the apparatus is exactly the same as that already described.

Fig. 5 shows a form of lamp support with a lens, which can be applied to specula hav-

ing only a single valve, such, for instance, as spatulas. This form of lamp support may be used with the specula already described. This modification of the invention comprises a variety of nippers or pincers having the two branches 22 and 23, so arranged that they can be fastened or clamped like a vise to the rim of the valve or the edge of the speculum by means of a nut 24 which is engaged by the screw, as shown. The branch 23 of the nippers is longer than the other so that it may be used to attach the flat spring 5 which secures the lamp, as previously explained. A lateral slit in the branch 23 is used to support and maintain the conductor 7 in position. In addition, the branch 23 is shown as carrying a lens 11 which is pivoted at 25 on its frame, so that it may be brought from the full-line to the dotted-line position.

The lamp 8, as shown in Fig. 6, is preferably of a somewhat flat shape,—although this is not essential—so that it will take but little room. This is almost indispensable in the otoscope, in which the space is limited. The lamp is provided with a small glass neck 26 and the conductors to the lamp are covered by a flexible rubber tube 7 which may be tightened around the neck so that a liquid-tight joint may be provided. The lamp and its conductors are thus rendered absolutely water-tight and may be conveniently and easily sterilized either in an antiseptic solution or in a tube containing tablets for producing formol vapor. The lamp support can be sterilized by other means, as heat, and is ready to receive, at any moment, a small sterilized lamp.

Figs. 7, 8 and 9 show another modification of the invention. In this modification, the spatula 27 has an integral handle 28 and a longitudinal groove 30. The conductor 7 rests within this groove and is held in position by means of a spring 29 corresponding to the spring 5, already described. The spring 29 may be supported in any manner, that shown being solely for the purpose of illustration. The spring is provided with an offset end, as shown in Fig. 8, and through this offset end a bolt 31 passes, the bolt being a fixture on the spatula 27. A nut 32 clamps the spring 29 against the spatula and holds the conductor 7 and lamp in position. By loosening the nut 32 and swinging the spring 29 to one side, as shown in dotted lines, Fig. 8, the lamp may be applied or removed.

A further modification is shown in Fig. 10, in which the spring 29 is provided with a curved portion 33. This spring is used with a spatula which need not have the groove 30. To adjust or remove the conductor and lamp in this modification, it is but necessary to loosen the nut 32 to a sufficient extent to allow the portion 33 to be turned around. A magnifying glass may be attached, if desired, to the spring 29.

Having now described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A speculum or spatula with an unindented wall and a flat spring secured to such speculum or spatula, in combination with an electric lamp held solely by the said spring directly against the wall of the speculum or spatula.

2. A speculum or spatula having a spring secured thereto and with an unindented wall, in combination with an electric lamp and a flexible conductor therefor, the lamp being engaged directly between the spring and the wall of the instrument in such a manner that the position of the lamp in relation to the instrument may be varied without detaching the lamp from the instrument.

3. A lamp securing device adapted to be secured to a speculum or spatula, which comprises an attachment having a spring for clamping the lamp directly against a wall of the speculum or spatula, and having a slit to frictionally engage with the flexible conductor of the lamp.

4. An attachment for specula and spatulas, which includes a flat spring for clamping an electric lamp directly against a wall of the speculum or spatula, and having a joint for removable attachment to the speculum or spatula, and carrying a magnifying glass.

5. An attachment for specula and spatulas, which includes a flat spring for clamping an electric lamp directly against a wall of the speculum or spatula, and having a joint for removable attachment to the speculum or spatula, and carrying a magnifying glass, the magnifying glass being so mounted that it may be swung to one side.

6. An attachment for a speculum or spatula, which includes a flat spring for clamping an electric lamp directly against a wall of the speculum or spatula, and having a joint for removable attachment to the speculum or spatula, and carrying a magnifying glass secured to a pivotally mounted cover, which may be swung to one side.

7. An attachment to a speculum or spatula, having means for holding an independent lamp directly in engagement with a wall of the speculum or spatula, in combination with an independent lamp having a neck and a rubber tube which covers the flexible conductor of the lamp and is tightened around the neck of the lamp.

This specification signed and witnessed this fourth day of September 1906.

SAMUEL KAPLAN.
EMILE BATAULT.

Witnesses:
FRANCIS T. KEENE,
L. H. MUNIER.