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EAR SPECULUM AND OTOSCOPE

Filed June 8, 1962

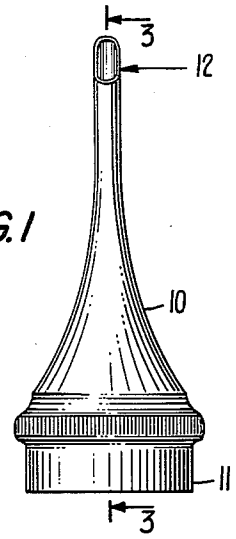


FIG. 1

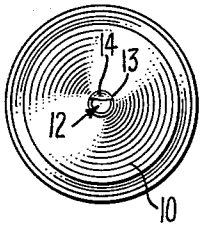


FIG. 2

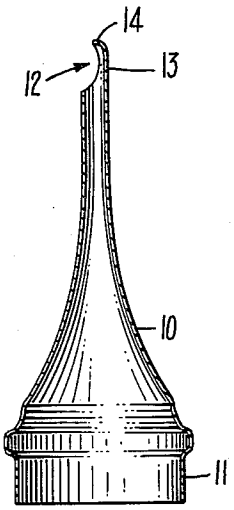


FIG. 3

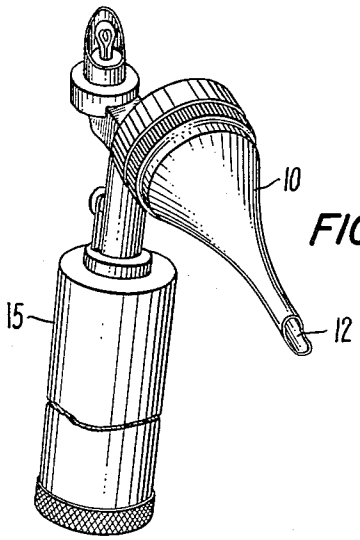


FIG. 4

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EAR SPECULUM AND OTOSCOPE

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This invention relates to an improved ear speculum particularly adapted for removing cerumen from the ear canal, and to otoscopes employing the improved speculum.

In the examination of the ear drum an ear speculum is conventionally used to enter the ear canal and permit visualization of the ear drum. Frequently, however, it is not possible to visualize the ear drum sufficiently to make an accurate diagnosis because of the presence of obstructing cerumen.

Some procedures have been devised to remove the obstructing cerumen by irrigation or use of a cerumenolytic. Such procedures, however, take up office time and are annoying both to the patient and the operator. Alternatively, an ear curette, a cotton-tipped toothpick or an ear spoon may be inserted into the ear canal in an attempt to remove the obstructing cerumen. When this is done without the aid of a viewing device, there is great danger of injury to the ear canal or the tympanic membrane. When these devices are inserted through an ear speculum the procedure is frequently unsatisfactory, as the instrument used to remove the obstruction often sufficiently blocks the view of the obstructing cerumen to make it difficult to remove the cerumen satisfactorily. Further such a procedure requires the operator to use both hands to manipulate the speculum and instrument so that an assistant is often necessary to hold the patient's head during the procedure. Still another disadvantage of such a method is that there is risk of injury to the tympanic membrane or the ear canal. All of the above problems are aggrevated in pediatric offices since small size specula must be used, and the younger patients are frequently less than cooperative.

According to the present invention, these difficulties are avoided by the use of a novel ear speculum having a projection integrally formed on the distal end thereof which is adapted to remove the obstructing cerumen by rotational, hooking or scooping motion of the speculum, while the obstruction, and the ear canal are under direct visual observation. Accordingly, efficient removal of obstructing cerumen is possible without appreciable risk of injury to the ear canal or tympanic membrane.

A more complete understanding of this invention may be had by reference to the figures in which:

FIGURES 1 and 2 are a side and end view respectively, of an ear speculum embodying the present invention;

FIGURE 3 is a section along line 3—3 of FIGURE 1; and

FIGURE 4 shows an otoscope embodying the present invention.

As shown, the invention comprises the combination of a conventional otoscope speculum having a generally conical portion **10** and a base **11** and, integrally formed on the distal end of cone **10**, a projection **12** which is adapted to engage and remove cerumen from the ear canal.

Projection **12** may assume a wide variety of shapes. In general, any shape which is adapted to engage and remove wax in the ear canal may be used. Such shapes include spoons, loops, and the like. A particularly suitable shape, because of its efficiency for the purpose, comprises a substantially cylindrical extension **13** from a portion of the distal end of the speculum **10** having a hood-like tip **14** on the end thereof. Tip **14**, may have a substantially hemispherical shape and a hole drilled in the center thereof to permit visualization of the ear canal. Alternatively the tip **14** may extend as a convex hood from the bottom and the sides of the field of vision, leaving the central and upper portions of the field of vision unobstructed.

In the preferred embodiment, illustrated in FIGURES 1–3, member **12** comprises a cylindrical extension **13**, which, in cross-section is an arc of about 150° to 180°, and a convex tip **14** blocking a little less than 50% of the view through the speculum when the line of vision is directed along the central axis thereof. If the spoon tip is less than about 150°, the efficiency of the device for removing wax is impaired. If tip **14** blocks more than 50% of the view, the utility of the speculum as a device for visualizing the ear drum is reduced. It is important in the improvement of the present invention that the tip and sides of the spoon, have no sharp outside edges which might cut or bruise the ear canal.

The device illustrated in FIGS. 1–4 is an otoscope speculum that is conventionally attached to a hand illuminator **15**. It is to be understood, however, that this invention is not limited to otoscope specula but may be used in any ear speculum, and in conjunction with other light sources such as a head mirror.

In using an ear speculum of the present invention to remove wax, the speculum is inserted into the ear canal until a blockage of cerumen is visualized. The wax is removed by inserting the tip into the mass of wax by a hooking or rotational motion and exerting a slow firm traction to remove the wax. In cases where the wax does not completely occlude the ear canal the operator may hook the tip into the side of or underneath the plug of wax, or may use the side of the spoon in a scooping motion. In using this device only one hand is required for manipulation, and the other hand is free to hold the patient's ear and head, making the assistance of another person unnecessary.

It should be noted that if the operator looks somewhat obliquely through the speculum, so that his line of vision extends away from the operating tip, the tip will block substantially less of his view than when his line of vision is along the central axis of the speculum. Such an oblique view will, therefore, be to his material advantage.

Because the spoon is integrally formed with the speculum, the tip may be of greater size than an ordinary ear spoon or curette. Therefore, the device is more efficient in removing obstructing ear wax, than the conventional procedure of inserting spoon or curette through speculum.

I claim:

1. An ear speculum comprising the combination of a substantially conically shaped member having a truncated distal end suitable for entering the ear canal and visualizing the internal portions thereof, and an extension of an arcuate section of said member integrally formed on said distal end, and having a convex hood extending over the end thereof, said hood blocking a portion, not exceeding 50%, of the view through said speculum.

2. An ear speculum comprising the combination of a substantially conically shaped member having a truncated

distal end suitable for entering the ear canal and visualizing the internal portions thereof, and a substantially cylindrical extension of an arcuate section of about 150° to about 180° of said distal end, said extension having a convex hood extending over the end thereof which blocks a portion not exceeding 50% of the view through the speculum when the line of vision is directed along the central axis thereof.

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