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[54] **MOUTH EXPLORING DEVICE**

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[51] **Int. Cl.** **A61b 1/24**

[58] **Field of Search** 128/10, 12, 15, 20

[56] **References Cited**

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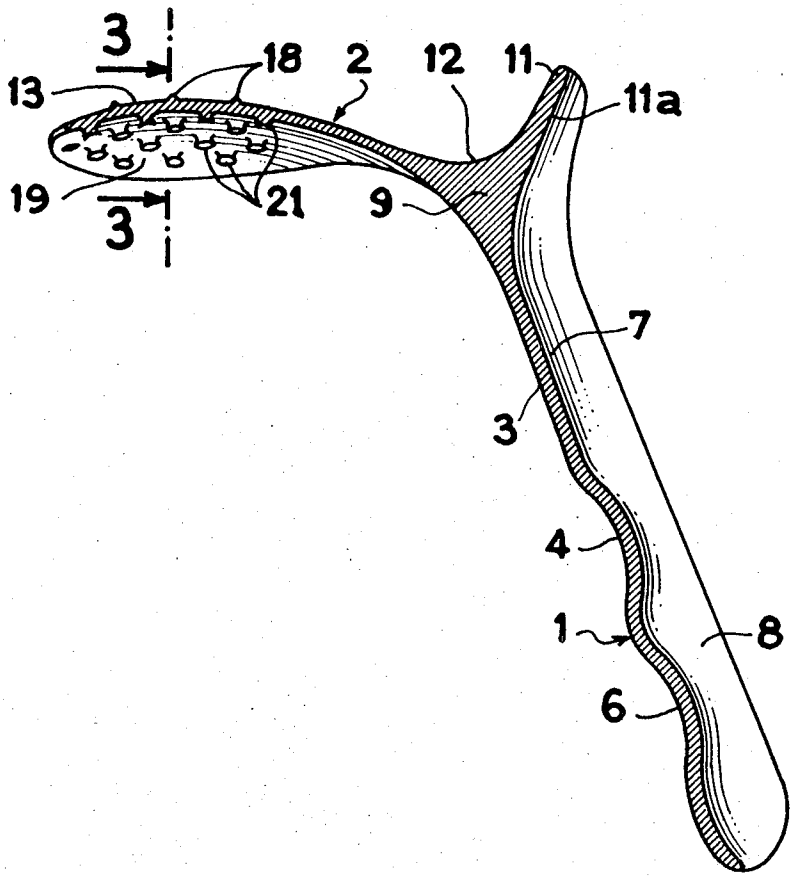
[57] **ABSTRACT**

A mouth exploring device comprising a handle and an exploring strip connected to the handle. The strip has two convex lateral edge portions which extend in a front part of the strip and define a substantially V-shaped notch having convex flanks so that the strip has a generally heart-shaped profile.

8 Claims, 3 Drawing Figures



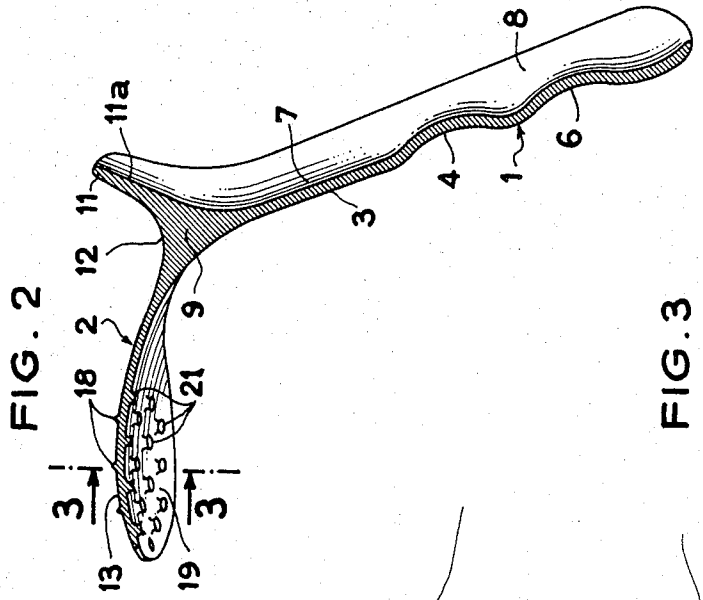


FIG. 2

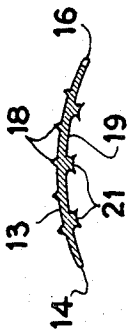


FIG. 3

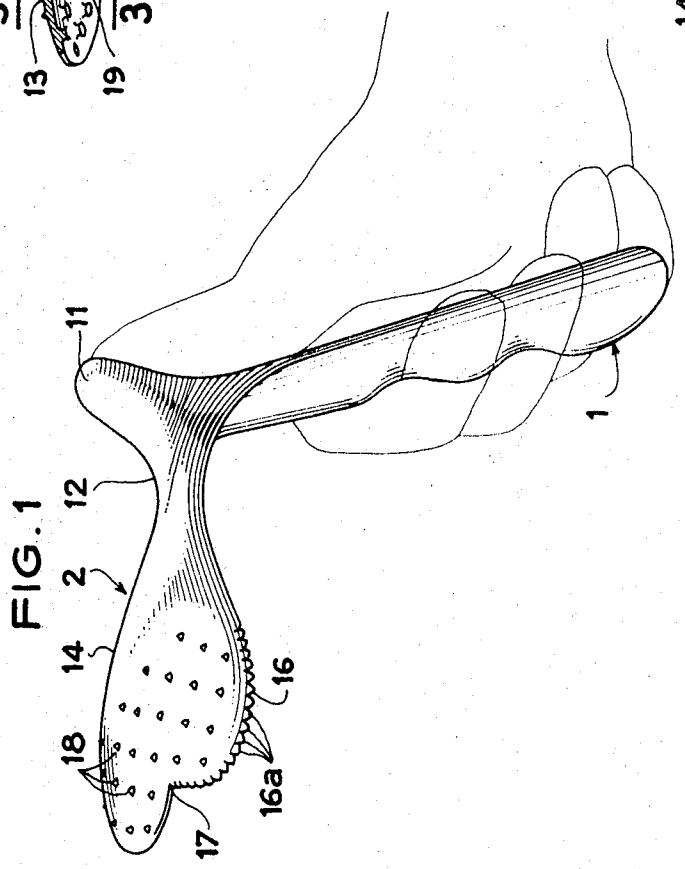


FIG. 1

MOUTH EXPLORING DEVICE

The present invention relates to improvements in tongue depressors of known type including arrangements which render it of utility for both exploring and curative purposes.

More precisely, the invention provides a mouth exploring device comprising a handle to which is connected an exploring strip whose convex lateral edge portions extend in a front part of the strip and define a substantially V-shaped notch having convex flanks so that the strip has a generally heart-shaped profile.

This instrument not only permits examining the pharynx when the tongue is moved downwardly by a pressure exerted thereon by the exploring strip as with known tongue depressors, but also permits, owing to the front V-shaped notch, reaching the frenum labii and the frenum linguae so that it is possible to examine these parts and the neighbouring regions such as the gums, internal mucous membrane of the lips and the mucous membrane of the mouth.

In order to facilitate these operations, the top of the exploring strip has advantageously pointed projections which may retain for example the internal mucous membrane of the lips or that of the cheeks.

One of the convex lateral edge portions of the strip may have ridges or notches so as to permit, in the case of the baby, an incision for a tooth which is in process of pushing through the gum or, in the case of an adult, an examination of the consistence or sensibility of a lesion, or of a mouth tumeur, and, by a surface scraping, a verification of its adherence or non-adherence, or its bleading or non-bleading upon contact with the strip.

The mouth exploring device according to the invention may be composed of plastics material and be in one piece in the manner of known depressors.

Alternatively, it may comprise a detachable strip of plastics material mounted on an independent handle which would preferably be of metal.

A plastics mouth exploring device in one piece may be sterilized provided that the plastics material is chosen for this purpose, so as to permit repeated utilizations of instrument, but it is preferable to adopt a cheap plastics material and provide a sterile packing formed by an individual bag so that the instrument can be thrown away after use. It will be understood that if the mouth exploring device comprises a detachable strip of plastics material, it is this strip which may be discarded after use.

Further features and advantages of the invention will be apparent from the ensuing description with reference to the accompanying drawing.

In the drawing

FIG. 1 is a perspective view of a mouth exploring device viewed from above;

FIG. 2 is a sectional view in the median plane of the instrument;

FIG. 3 is a sectional view taken along line 3—3 of FIG. 2.

The illustrated mouth exploring device, preferably composed of moulded plastics material, comprises a handle **1** to which is connected an exploring strip or blade **2** whose mean plane makes an angle of approximately 120° with the handle. The handle **1**, which has a generally rectilinear shape, has a front face **3** of convex cross sectional shape in which are formed recesses **4,6** adapted to facilitate the handling of the handle by the fingers of the hand of the user, and a rear face having a concave cross sectional shape defined by a recess **7** having curved flanges **8.**

The handle is extended, beyond the region **9** of connection with the strip **2,** by a rearwardly extending curved extension portion **11** which constitutes an abutment in which an extension **11***a* of the bottom of the recess **7** offers a support and bearing face for the thumb of the user so that it is possible to employ the instrument in the manner of a lever.

The front face of the abutment **11** is the start of a concavity **12** situated in the connecting region **9,** that is to say the start of the exploring strip **2** proper, which, when viewed in plan, is symmetrical with respect to a plane intersecting the centre line of the recess **7.**

The upper face **13** of the strip **2** is slightly convex in both the longitudinal direction (FIG. **2**) and transverse direction (FIG. **3**) so that it corresponds to the curvature of the tongue of the patient.

The lateral edge portions **14, 16** of the strip **2** have a convex profile which joins the relatively narrow connecting region **9** and extends in the front part of the strip **2** in such manner as to define a notch **17** which constitutes the corner of a V-shaped portion having convex flanks which is located in the plane of symmetry of the strip and imparts a heart-shaped appearance to the front part of the strip.

The upper face **13** of the strip **2** is provided with pointed spike-shaped projections which facilitate the retention of the internal mucous membrane of the lips or that of the cheeks when it is raised or lowered for examining the gums, teeth or gum grooves.

The lower face **19** has a concavity corresponding to the convexity of the upper face **13** and is provided with projecting portions or studs **21** whose free end is slightly concave and creates a suction effect upon contact with the surface of the tongue and thus ensures an improved adherence for examination of the pharynx.

One of the lateral edge portions, **14,** of the strip **2** is smooth and this permits ascertaining, by contact, the relief of a mucous membrane, gum, or a tooth for example. The other lateral edge portion **16** is provided with vertical ridges **16***a* so as to permit in particular a sounding or scraping of the surfaces to be explored or even treated, if it concerns, for example, an incision for a tooth of a baby which is in process of pushing through the gums.

It will be understood that various sizes of the mouth exploring device adapted to the age of the patient to be examined may be provided.

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

1. A device for depressing the tongue and exploring the inside of the mouth, comprising a handle, and a tongue depressing and mouth exploring strip having a rear part connected to the handle adjacent an upper end of handle in the position of use of the device, a front part, two curved convex lateral edge portions which extend from said rear part to said front part and define in said front part a substantially V-shaped notch which has curved convex flanks so that the strip has a generally heart-shaped profile in plan in the position of use of the device, the strip extending continuously between said lateral edge portions and between said front part and rear part, the strip having in the position of use of the device with the handle extending downwardly

from the strip a slightly curved convex upper surface substantially throughout the strip in longitudinal and transverse directions of the strip and having a lower surface which is concave and slightly curved with a substantially constant curvature in said longitudinal and transverse directions so that it substantially corresponds to the shape of the part of the tongue the device is to depress.

2. A device as claimed in claim **1**, wherein the upper surface of the strip comprises small pointed spike-shaped portions.

3. A device for depressing the tongue and exploring the inside of the mouth, comprising a handle, and a tongue depressing and mouth exploring strip having a rear part connected to the handle adjacent an upper end of the handle in the position of use of the device, a front part, two convex lateral edge portions which extend from said rear part to said front part and define in said front part a substantially V-shaped notch which has convex flanks so that the strip has a generally heart-shaped profile in plan in the position of use of the device, the strip extending continuously between said lateral edge portions and between said front part and rear part, the strip having a lower surface which comprises projecting studs each of which studs defines suction means.

4. A device as claimed in claim **1**, wherein one of the two lateral edge portions of the strip has a rough surface.

5. A device as claimed in claim **4**, wherein ridges constitute said rough surface.

6. A device for depressing the tongue and exploring the inside of the mouth, comprising a handle, and a tongue depressing and mouth exploring strip having a rear part connected to the handle adjacent an upper end of the handle in the position of use of the device, a front part, two convex lateral edge portions which extend from said rear part to said front part and define in said front part a substantially V-shaped notch which has convex flanks so that the strip has a generally heart-shaped profile in plan in the position of use of the device, the strip extending continuously between said lateral edge portions and between said front part and rear part, the handle having a rear surface having a concave cross sectional shape defined by the flanks of a groove extending longitudinally of the handle, there being further provided an abutment which extends the handle beyond a region of the handle connected to said rear part of the strip, the abutment having a rear surface which has a concave cross-sectional shape and merges with said concave rear surface of the handle so as to provide a curved concave recess for receiving and partly enveloping the thumb of the hand of the user and thereby enable the thumb to participate in the control of the position of the device in use.

7. A device for depressing the tongue and exploring the inside of the mouth, comprising a handle, and a tongue depressing and mouth exploring strip having a rear part connected to the handle adjacent an upper end of the handle in the position of use of the device, a front part, two convex lateral edge portions which extend from said rear part to said front part and define in said front part a substantially V-shaped notch which has convex flanks so that the strip has a generally heart-shaped profile in plan in the position of use of the device, the strip extending continuously between said lateral edge portions and between said front part and rear part, the device further comprising a curved portion which extends the handle beyond a region of the handle connected to the strip, the curved portion constituting an abutment which offers a support for the thumb of the hand of the user.

8. A device as claimed in claim **1**, wherein the strip has a general plane which makes an angle of substantially 120° with the handle.

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