United States Patent

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[72] Inventor **Paul C. Horn**
Jacksonville, Florida (323 Rogers Terrace, Lakeland, FL 33803)

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[54] **PROTECTIVE DEVICE FOR TONGUE DEPRESSORS**
5 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **128/15,** 128/139
[51] **Int. Cl.** **A61b 13/00**
[50] **Field of Search** ..... 128/15, 16, 21, 3, 10, 11, 20, 132, 139, 136(Cursory); 296/91; 2/2.5

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Primary Examiner—Richard A. Gaudet
Assistant Examiner—Kyle L. Howell
Attorneys—George H. Baldwin and Arthur G. Yeager

ABSTRACT: A protective device for use with a tongue depressor comprising a transparent deflector closely adjacent to and generally covering the mouth of a patient. The deflector is of a size and shape to protect the examiner from droplet contamination emanating from the patient's mouth during visual examination. An elongated handle supports the lower portion of the deflector and an elongated member is connected to the handle and extends therebelow and includes a portion which is parallel to and spaced from the handle and forming a slot for the reception of a tongue depressor. The vertical dimension of the slot is less than the tongue depressor thickness frictionally and releaseably maintaining the depressor within the slot. The handle is provided with a cutout portion above the member portion to accommodate the middle finger of the examiner and provide an area of finger contact of the tongue depressor to restrain relative movement between the depressor and the handle.

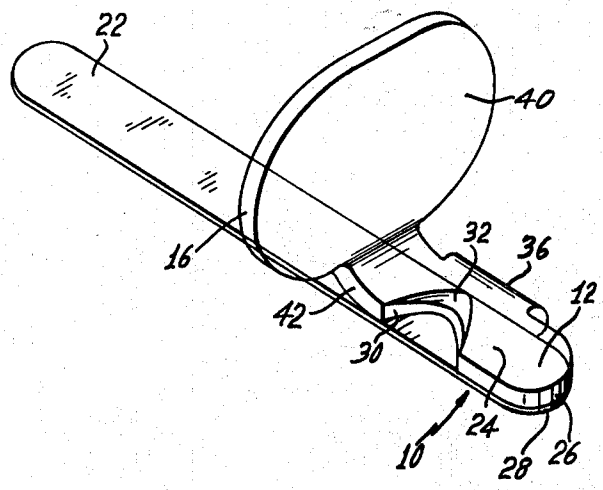


FIG. 1

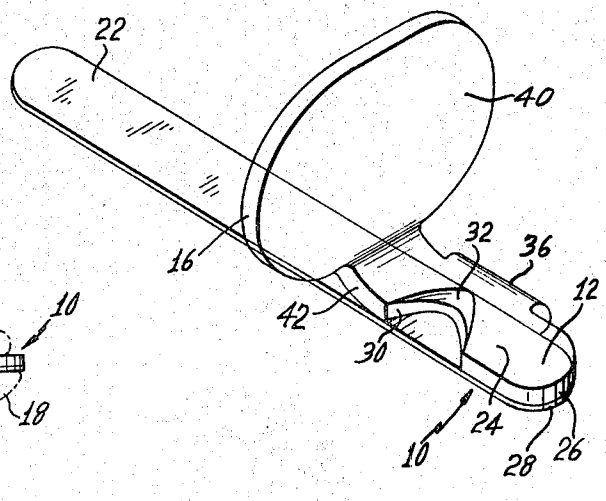


FIG. 2

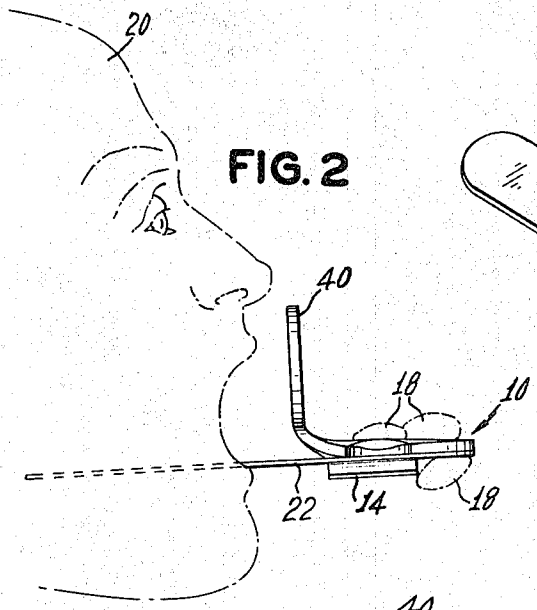


FIG. 3

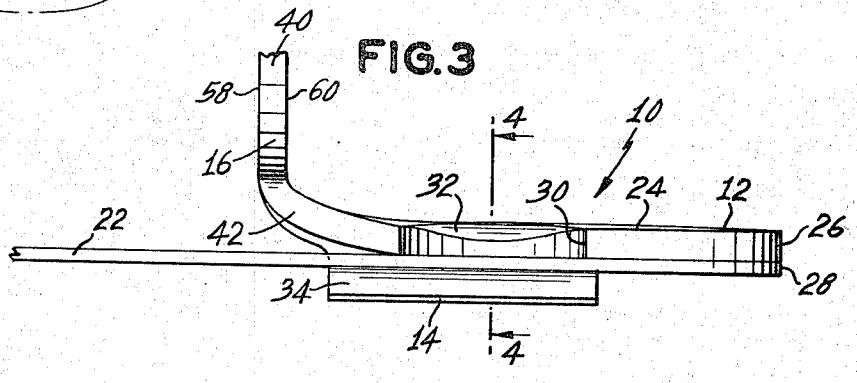


FIG. 4

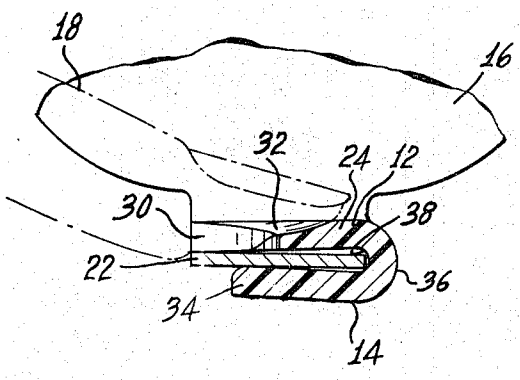
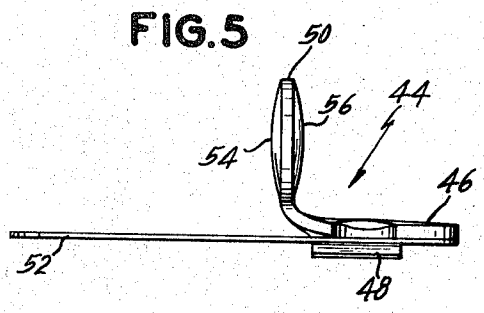


FIG. 5



INVENTOR.
Paul C. Horn

BY
George H. Baldwin
ATTORNEY

PROTECTIVE DEVICE FOR TONGUE DEPRESSORS

SUMMARY OF THE INVENTION

This invention relates to a diagnostic device for use with a tongue depressor during visual examination by an examiner of a patient's mouth and throat. More particularly, the invention pertains to a transparent protective shield or deflector for use with a tongue depressor to protect the examiner from droplet contamination emanating from a patient's mouth during visual examination of the patient's mouth and throat by the examiner.

In general, the invention hereinbelow disclosed provides a protective diagnostic device for use with a tongue depressor during visual examination by an examiner of a patient's mouth and throat. The protective device comprises in combination a generally vertical transparent deflector for placement closely adjacent to and generally covering the open mouth of a patient The deflector is of such size and shape as to protect the examiner from droplet contamination emanating from the patient's mouth during visual examination of the patient's mouth and throat by the examiner. The combination further includes holding means associated with the deflector for releaseably attaching the tongue depressor to the protective device.

DESCRIPTION OF THE DRAWINGS

The novel features which are believed to be characteristic of this invention are set forth with particularity in the appended claims. The invention itself, however, may best be understood by reference to the following description taken in connection with the accompanying drawing, in which:

FIG. **1** is a perspective view showing the improved protective shield for a tongue depressor of this invention in combination with a tongue depressor;

FIG. **2** is a side elevational view showing the combination of FIG. **1** in use;

FIG. **3** is an enlarged, partial side elevational view of the combination as shown in FIG. **1**;

FIG. **4** is a partial cross-sectional view taken along line **4–4** of FIG. **3**, and

FIG. **5** is a side elevational view showing another embodiment of the protective shield for a tongue depressor of this invention in combination with a tongue depressor.

DETAILED DESCRIPTION

Referring to the drawing in detail now nd in particular to FIG. **1** thereof, the improved protective shield for a tongue depressor **10** of this invention is seen to include a handle portion **12**, a tongue depressor receiving and holding portion **14** and a deflector or shield portion **16** all of which are integral and formed from a single piece of material. The shield or protector **16** may also be referred to as a "visual screen," as it is the portion of the device through which the operator thereof (such as a doctor, nurse or the like, whose thumb and fingers of the left hand are shown in dashed line configuration at **18** in FIGS. **2** and **4**), looks into the mouth and oropharynx of the person **20** being examined. The tongue depressor **22** used in combination with the protective shield of this invention is a conventional tongue depressor which is readily available and widely marketed.

The handle portion **12** includes an elongated flat member **24** of a length sufficiently long such that the same can be readily clasped by at least two or three fingers of the hand of the user thereof, and of a width generally corresponding to the width of tongue depressor **22** with which the protective device **10** is used. The rear or outer end **26** of member **24** is rounded to correspond to the rounded end **28** of the conventional tongue depressor **22** Member **24** is further provided with a cutout portion at **30** which is shaped to fit the thumb or finger to permit easy and ready insertion, removal or positioning of the tongue depressor **22** within the protective holder **10**. The member **24** is additionally beveled adjacent to and above the inner edge of cutout **30** as at reference numeral **32**.

The tongue depressor receiving and holder portion **14** of the device includes an elongated flat member **34** having a width approximately equal to the width of the conventional tongue depressor **22**. The length of member **34** is somewhat shorter than the length of member **24**, but yet long enough to secure the tongue depressor **22** within the device. Member **34** is connected to member **24** by a curved jointing section **36** which extends therebetween. Member **34** is so attached to member **24** that an opening or slot **38** exists therebetween. The opening **38** is of sufficient dimension to readily accommodate the thickness of conventional tongue depressor **22** such that the same may be easily and readily slipped into the opening **38**, and properly positioned between members **24** and **34** upon slight flexing of section **36** and separation of member **34** from member **24**. Connecting section **36** is flexible enough to permit members **24** and **34** to be slightly separated away from each other, yet stiff enough to permit the tongue depressor **22** to be engaged by the inner surfaces of members **24** and **34** and be frictionally held therebetween within slot or opening **38**. While the holding arrangement for tongue depressor **22**, depicted in the embodiment of FIGS. **1—4**, is of a slip-on arrangement, other types of arrangements for holding the device **10** on the tongue depressor **22** could be provided and used if so desired, such as snap-on, clamp-on, or other frictional type arrangements.

The deflector portion **16** of the tongue depressor protective holder of this invention includes a protective shield or "visual screen" member **40** which is held in a generally perpendicular position with respect to the plane of the tongue depressor **22**. The deflector **40** is of a transparent material such that the user or operator of the device can look through the same and into the mouth and throat of the patient **20** being examined, see FIG. **2**. Deflector **40**, by virtue of its transparency, permits the visual inspection of the patient's mouth and throat, while protecting the operator or user of the device from possible contamination emanating from the droplets exhaled by and coming from the mouth and throat of the patient **20**. That is to say, that the deflector **40** acts as a shield and deflects backward and downward the droplets and contamination coming from the mouth of the patient which would otherwise present a health hazard to the person examining the mouth and throat of the patient. The screen or shield **40** should be of such size and have a large enough area to give the inspector using the device a suitable measure or zone of protection from contamination, although not so large as to interfere, such as by obstruction from the nose, with the examination and inspection of the mouth and throat of the patient. In one particular embodiment of the invention, shield or deflector **40** of the device **10** was formed in the shape of an ellipse having a transverse axis of about 3 inches and a conjugate axis of approximately 2 inches. A deflector of this size and area was found sufficient to provide a suitable zone of protection for the face of the examiner to protect the same from droplet contamination when the deflector was used in connection with an adult patient and held approximately three-fourths inches from the open mouth of the patient and the examiner was at a convenient distance from the deflector of approximately 15 inches. While the shape of shield **40**, as shown in the embodiment of the invention depicted in FIGS. **1—4**, is that of an oval or ellipse, other shapes could be used if so desired, such as circular, triangular, multiangular, or combinations thereof. Shield **40** is connected to the handle portion **12** of the device by means of a curved connecting section **42** extending between members **24** and **40** such as to give a smooth streamlined overall appearance to the device **10**.

With particular reference to FIG. **5** now, the protective shield for a tongue depressor **44**, depicted therein, includes a handle portion **46**, a tongue depressor receiving and holding portion **48** and a protective shield or deflector portion **50**, all of which are interconnected and which are similar to like portions of protective shield **10** in the embodiment depicted in FIGS. **1—4**. Protective holder **44** is intended to receive and securely hold a conventional tongue depressor **52** for use and

aid in the visual inspection of the mouth and throat of a patient. The deflector or shield **50** of FIG. **5** is different from the deflector **40** of FIG. **1** in that the "visual screen" of deflector **50** is shaped such that its surfaces **54** and **56** are convex such as to form a magnifying lens, while the sides **58** and **60** of the deflector **40** are flat or parallel to each other. By forming the "visual screen" of deflector **50** (FIG. **5**) in the form of a magnifying lens, the operator or user of protective holder **44** is able to perform a much more thorough and complete examination of the patient's mouth and throat than would be possible by the unaided eye or with the use of protective holder **10** (FIG. **1**), whose deflector **40** has a flat "visual screen." The "visual screen" of deflector **50** could be formed with its sides **54** and **56** assuming a concave arrangement if the use of such a protective shield for a tongue depressor would be desired.

The protective shield holder for a tongue depressor of this invention (**10, 44**) can be made to be disposable, or it can be made to be sterilizable either by cold sterilization or by sterilization in an autoclave, depending on the particular choice of material from which the device is constructed. In addition the deflector (**40, 50**) of the device can be specially coated and/or treated to prevent fogging of the same when the device is in use. A product marketed under the trademark Kleer Fog and prepared by Winters Chemical Laboratories, Reading, Pennsylvania, 19603, is an example of a prior art coating material that can be used for this purpose, which product was obtainable on the market prior to the filing of this application.

To use the protective shield **10** of this invention, the same is first positioned on and attached to a conventional tongue depressor **22**. This being accomplished by placing depressor **22** within slot **38** between members **24** and **34** such that it is frictionally held therein by the inner surfaces of members **24** and **34**. Depressor **22** is additionally positioned such that its rearward end **28** is in alignment with the rearward end **26** of the device **10**. Now the combination of the protective device **10** and depressor **22** is ready for use and the same may be employed as depicted in FIG. **2**. The combination is grasped by the user thereof with the thumb and forefingers of his left hand (this being the usual procedure for a normally right-handed person) and held in the position as indicated in FIG. **2**, with the depressor **22** in the patient's mouth and the deflector **40** from ¾ inch to 1½inches in front of the patient's mouth, during the inspection and examination of the patient's mouth and throat. When the combination of the protective shield **10** and the depressor **22** is properly held in the left hand of the examiner (as depicted in FIG. **2**), portions of the middle finger touch and rest upon the top and side of the depressor **22** within and adjacent cutout portion **30** to aid in holding the depressor within the protective shield and to prevent lateral movement of the depressor within the shield. in this manner, the operator or user of the combination is protected from droplet contamination coming from the patient's throat and mouth. Once the examination is completed the combination is removed from the patient's mouth, the depressor **22** is removed from the protective holder **10** and disposed of, and the protective shield **10** is prepared for another and later use.

While only certain preferred embodiments of this invention have been shown and described by way of illustration, many modifications will occur to those skilled in the art and it is intended that all such modifications be included within the true spirit and scope of this invention.

I claim:

1. A protective diagnostic device for protecting a human examiner from droplet contamination emanating from a human patient's mouth during visual examination of a patient's mouth and throat by an examiner comprising in combination a flat tongue depressor and a generally vertical transparent deflector having an area of approximately 5 square inches and being adapted for placement closely adjacent to and in a position generally covering a wide open mouth of a normal adult human patient, holding means associated with and disposed below said deflector releaseably attaching said protective device to said tongue depressor, said holding mean means including a handle connected to the lower portion of said deflector and extending rearwardly therefrom, a member connected to said handle and extending therebelow, a said member having a frictional engaging portion generally parallel to and spaced from said handle and forming a deep U-shaped slot therebetween for the reception of said tongue depressor therein, said slot having a predetermined vertical dimension of less than the thickness of said tongue depressor whereby said tongue depressor is frictionally maintained within said slot between said handle and said frictional engaging portion.

2. The protective diagnostic device as defined in claim **1** wherein a said depressor is located below said deflector and extends generally perpendicularly thereto with the forward tongue depressing end of said depressor terminating at a position forwardly of and spaced substantially from said deflector.

3. A protective diagnostic device for protecting a human examiner from droplet contamination emanating from a human patient's mouth during visual examination of a patient's mouth and throat by an examiner comprising in combination a generally vertical transparent deflector adapted for placement closely adjacent to and in a position generally covering a wide open mouth of a normal adult human patient, and holding means associated with and disposed below said deflector for releaseably attaching said protective device to a detachable tongue depressor, said holding means including a handle connected to the lower portion of said deflector and extending rearwardly therefrom, a member connected to said handle and extending therebelow, said member having a frictional engaging portion generally parallel to and spaced from said handle and forming a slot therebetween for the reception of a tongue depressor therein, said handle further including a cutout portion between its ends and above said member portion, said cutout portion defining a finger receiving portion and adapted to provide an area of contact between a tongue depressor and a finger of an examiner when a tongue depressor is disposed in said slot whereby movement of a tongue depressor within said slot is minimized during use thereby by an examiner.

4. The protective diagnostic device as defined in claim **3** further comprising an elongated and planar tongue depressor frictionally engaged by and between said handle and said member within said slot, said depressor being located below said deflector and extending generally perpendicularly thereto with the forward tongue depressing end of said depressor terminating at a position forwardly of and spaced substantially from said deflector and the rearward end of said depressor terminating spaced rearwardly of said deflector.

5. A protective diagnostic device for protecting a human examiner from droplet contamination emanating from a human patient's mouth during visual examination of a patient's mouth and throat by an examiner comprising in combination a generally vertical transparent deflector adapted for placement closely adjacent to and in a position generally covering a wide open mouth of a normal adult human patient, and holding means including a generally horizontal elongated handle having front and rear end portions, said deflector being connected adjacent its lower portion to said handle adjacent its front end portion, an elongated member connected to said handle between said front and rear end portions and extending therebelow, said member having a portion generally parallel to and spaced from said handle and forming a slot therebetween for the reception of a tongue depressor, said rear end portion of said handle being adapted to be positioned closely adjacent an end portion of a tongue depressor, said rear end portion of said handle being adapted and arranged to be contacted by an index finger of an examiner and an examiner's thumb being adapted and arranged to contact an end portion of a tongue depressor thereby restraining relative movement between said handle and a tongue depressor, said handle having a cutout portion defining a finger receiving portion between said front and rear end portions and above said elongated member adapted to accommodate a middle finger

of an examiner and adapted to provide an area of contact between a tongue depressor and a middle finger of an examiner thereby further restraining relative movement between a tongue depressor and said handle.