Oct. 5, 1954 C. D. GOVAN 2,690,745

TONGUE BLADE

Filed April 21, 1952

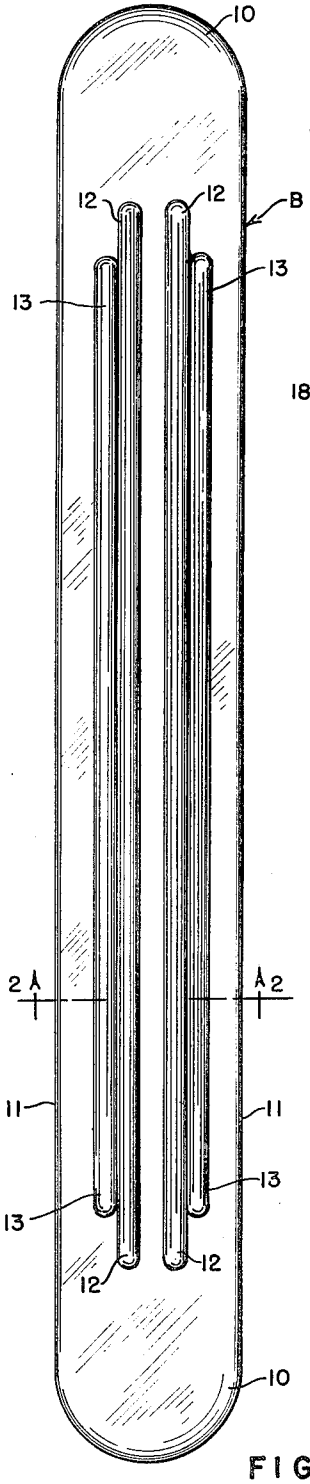


FIG.-1

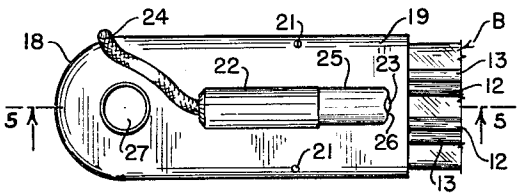


FIG.-4

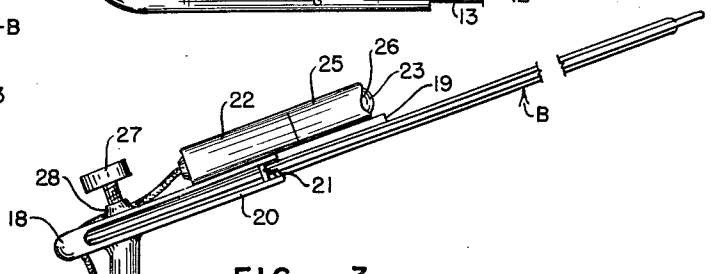
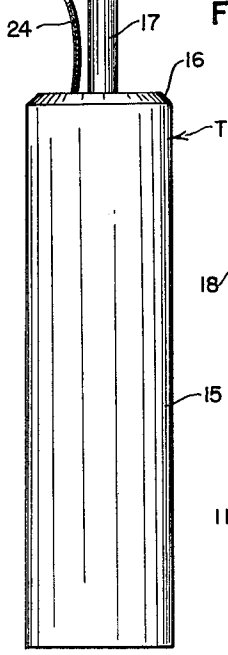


FIG.-3



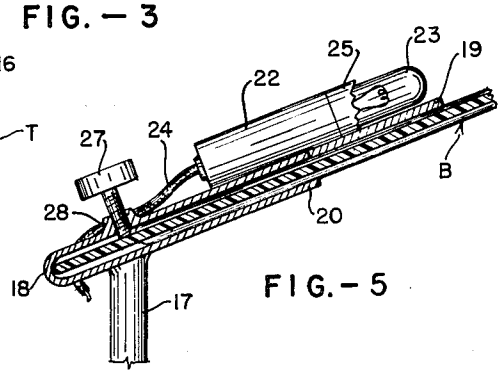


FIG.-5

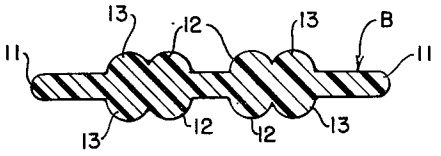


FIG.-2

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TONGUE BLADE

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4 Claims. (Cl. 128—15)

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This invention relates to tongue blades and the like, such tongue blades being utilized by physicians to depress the tongue during an examination of the throat and adjacent parts of a patient.

Previously, tongue blades have been made of wood, without color or decoration. The conventional wooden tongue blade is flat and rounded at the ends, but the edges along the side and at the ends are substantially right angles, so that these edges may tend to cut or damage soft tissue. Also, the conventional wooden tongue blade may tend to crack or splinter, if struck by a sharp instrument or tool, and sometimes when being inserted in a holding tool. Also, if a wooden tongue blade, after one use, is attempted to be sterilized, it tends to warp out of shape and is therefore useless. Plain, wooden tongue blades, when utilized in the examination of children, do not have the same eye appeal that a colored blade would have, and even though the promise of the doctor to give the tongue blade to the child following examination, is sometimes sufficient to produce a greater spirit of cooperation in the child, a colored tongue blade is much more appealing to the child's eye. Thus, the promise of a gift of a colored tongue blade increases considerably the tendency for the child to cooperate in the examination.

It is a common practice of many physicians to hold the tongue blade in one hand while examining a patient, although frequently a physician utilizes a tool in which the tongue blade is clamped and which is adapted to direct a beam of light along the blade. A smooth wooden blade is sometimes difficult to hold accurately, while any new type of tongue blade should be adapted to fit present blade holding tools.

Among the objects of the present invention are to provide a novel tongue blade; to provide such a tongue blade which may be made in colors; to provide such a tongue blade which does not tend to bend or warp during sterilization; to provide such a blade which has no sharp edges; to provide such a blade which does not tend to splinter or crack when struck a hard blow; to provide such a tongue blade which is easier to grasp, when held by the fingers, than a plain, smooth, wooden tongue blade; to provide such a tongue blade which is adapted to be used in blade holding tools presently in use; and to provide such a tongue blade which may be made economically.

Additional objects and the novel features of this invention will become apparent from the description which follows, taken in connection with the accompanying drawing, in which:

Fig. 1 is a top plan view of a tongue blade

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constructed in accordance with this invention, on an enlarged scale to show detail with greater accuracy;

Fig. 2 is a cross section taken along line 2—2 of Fig. 1;

Fig. 3 is a side elevation, on a slightly reduced scale, of the tongue blade of this invention mounted in a conventional blade holding tool;

Fig. 4 is a partial top plan view of the blade in the tool of Fig. 3; and

Fig. 5 is a longitudinal section taken along line 5—5 of Fig. 4.

As illustrated in Figs. 1 and 2, a tongue blade B constructed in accordance with this invention may comprise an elongated strip, which is preferably formed of a plastic which may be white or colored, and may be approximately 146 mm. long and 18 mm. wide, the ends 10 of the blade being grounded so as to be substantially semi-circular or the like, and the edges 11 also being rounded, such as also to be semi-circular or the like, it being understood that the rounded edges 11 shown in Fig. 2 extend around the ends 10 of Fig. 1. The thickness of the blade may be about 1 mm., and the blade is provided with a series of longitudinal ridges, preferably formed integrally with the blade, such as two pair of ridges on each side; as shown, each pair may comprise inner ridges 12 and outer ridges 13, the inner and outer ridges of each pair preferably merging with another and the ridges being in opposed positions on opposite sides of the blade. The ends of the ridges 12 and 13 are preferably rounded, and in any event merge into the surface of the blade without the production of any sharp edges. Ridges 12 and ridges 13 may extend to a height of ½ mm. above the level of the blade, and the inner ridges 12 are preferably longer than the outer ridges 13. Thus, the inner ridges 12 may be approximately 101 mm. in length, and the outer ridges 13 approximately 96 mm. in length, the ridges preferably being centered so as to leave an equal flat space at each end of the blade. The central spacing between inner ridges 12 may be about 6 mm., and each pair of ridges 12 and 13 may be approximately 4 mm. at the base. The ridges are sufficiently heavy to impart enough strength to the blade to prevent warping during sterilization, and also sufficiently prominent that they add to the security with which the blade may be held, yet not sufficiently thick that they produce discomfort during use or prevent insertion of the blade into a conventional blade holding tool, such as the tool T of Fig. 3.

The tool T may comprise a casing 15 in which

a battery (not shown) may be placed, and provided with a thumb ring 16 at the top, which is adapted to be rotated in one direction to turn on a switch and the other direction to turn the switch off, the switch being conventional and therefore not shown. Extending centrally from the upper end of the casing 15 is a post 17, on which is mounted a blade socket 18 which is curved around its rear end and the top 19 of which is longer than the bottom 20. Also, the sides of the blade socket are open and the end of the bottom 20 may be spaced from the top 19 by a rivet 21 forming a post at each side, these rivets also imparting stability to the blade socket. The blade socket is mounted at an angle on top of the post 17, such as at an included angle of 135° between the axis of the post 17 and the longitudinal axis of the blade socket 18. A socket 22 for a small light bulb 23 is mounted on the top 19 of the blade socket, while a wire 24 carries current from the battery in casing 15 to the bulb socket 22. A removable cover 25 for the bulb 23 may also be provided, the cover 25 preferably having a hole 26 in the end thereof, so as to restrict the light to a direction longitudinally down the blade B.

The blade B may be fastened in the blade socket 18 by a thumb screw 27 which extends through a threaded boss 28 attached to or formed integrally with the top 19 of the blade socket, the thumb screw being adapted to be tightened to hold the blade securely in the blade socket and to be loosened for removal or replacement of the blade.

As will be evident from Fig. 4, the blade B of this invention may readily be inserted in the blade socket through the opening at the front upper end thereof, and slid back into the socket until the end of the blade is beneath the thumb screw 27. The ends of the ridges 12 and 13 are preferably spaced from the end of the blade sufficiently so that even with the blade inserted clear into the rear end of the blade socket, the thumb screw will engage the smooth flat surface beyond the ends of the ridges 12 and 13. However, the thumb screw is also adapted to hold the blade in the blade socket, even though the blade is not inserted clear into the end. The blade socket 18 conventionally provides a space having a thickness slightly greater than the usual thickness of a wooden tongue blade and, as will be evident, the total thickness of the ridges 12 and 13 may be equivalent to the conventional thickness of a wooden tongue blade, but the main body of the blade is substantially thinner.

As will be evident, the rounded edges 11 of the blade of this invention do not tend to cut or damage soft tissue, while the plastic material of which the blade is made does not tend to crack or splinter. Furthermore, the ridges 12 and 13, as well as the rounded edges 11, can be made at no additional production expense, since the plastic of which the blade is made is preferably susceptible to high speed molding operations. Thus, the additional advantages obtained by the ridges 12 and 13 and the rounded edges 11 may be obtained at little or no extra cost.

The preferred plastic material of which the blade of this invention is made is a plastic which can be molded, and which also is tasteless, odorless and water and saliva resistant. Thus, a suitable plastic is polystyrene, although other plastics such as the polyamine resin known as nylon, or certain of the acrylic resins or the vinyl resins, may be used. Or, a protein plastic such as casein, or plastics which may be poured as liquids into molds and hardened by a subsequent baking operation, such as a phenolic casting resin, may be used. Preferably, for use by pediatricians or other physicians having an extensive practice among children, the colors are assorted. That is, a physician may carry an assortment of colors, so as to permit the child to indicate which color he wishes to be used, since red may appeal to some children, blue to other children, green to still other children, and other colors or shades to additional children.

Preferably, the surface of the final product has a low light reflection coefficient, so that there will be as small amount as possible of reflected light to interfere with the vision of the physician.

From the foregoing, it will be evident that the tongue blade of this invention fulfills to a marked degree the requirements and objects hereinbefore set forth. The strength of a relatively thin blade provided with longitudinal ridges permits the blade to be sterilized for reuse, but even when made in various colors and therefore adapted to be given away to children to increase their interest and cooperation, the cost is still relatively low. Furthermore, the additional strength imparted by the ridges and the lack of any edges which might cut or injure soft tissue may be obtained at no extra cost for material or manufacturing operations. The ridges not only provide strength to the blade but also permit the blade to be held more securely when used by hand, while the termination of the ridges at a point spaced from the ends not only provides a smooth surface at the end of the blade for use in depressing the tongue of the patient, but also provides a smooth surface at the opposite end to permit a thumb screw or the like of a conventional blade holding tool to be applied.

While a specific embodiment of this invention has been described with particularity, it will be understood that changes may be made therein without departing from the spirit and scope of this invention.

What is claimed is:

1. A tongue blade comprising an elongated, smooth-surfaced body formed of plastic material and having a length several times its width and a width several times its thickness, each end thereof being rounded on an arc and all edges therearound being rounded substantially on an arc, said body having a series of longitudinally extending ridges on each side in opposed positions, said ridges being disposed in two pairs with one pair spaced at each side of the center and terminating a substantial distance from each end of the body, each ridge being rounded and having rounded ends and the outer ridge of each pair being shorter than the inner ridge of each pair and the two ridges of each pair merging laterally with each other and extending to a height above the level of the remainder of the body not greater than the thickness of the body.

2. A tongue blade comprising an elongated, smooth-surfaced body formed of plastic-like material and having a length several times its width and a width several times its thickness, each end thereof being rounded and all edges therearound being rounded, said body having a series of longitudinally extending ridges on each side, said ridges being disposed in two pairs with one pair spaced at each side of a longitudinal center line and each ridge being rounded and having rounded ends, the outer ridge of each pair being shorter than the inner ridge of each pair and each ter-

minating at a point spaced from the end of said body a distance at least equal to the width of the body, the two ridges of each pair merging laterally with each other and extending to a height above the level of the remainder of the body for a distance not greater than the thickness of said body.

3. A tongue blade comprising an elongated body formed of plastic-like material and having a length several times its width and a width several times its thickness, each end thereof being rounded and all edges therearound being rounded, said body having a series of longitudinally extending ridges on each side in opposed positions, each ridge being rounded and having rounded ends.

4. A tongue blade comprising an elongated body formed of plastic-like material and having a length several times its width and a width several times its thickness, each end thereof being

rounded on an arc and all edges therearound being smooth, said body having a series of longitudinally extending ridges on each side, said ridges being disposed in two pairs with one pair at each side of a longitudinal center-line, and each ridge extending for at least a major portion of the length of said body and terminating at a point spaced from the end of said body a distance at least equal to the width of said body.

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