Sept. 10, 1963 C. W. RECTOR 3,103,052

NATURAL EXPRESSION FORMER

Filed Sept. 13, 1960

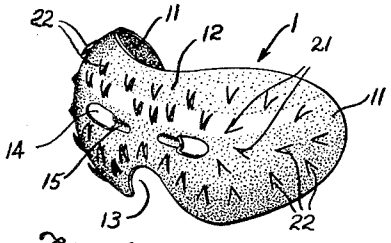


Fig. 1.

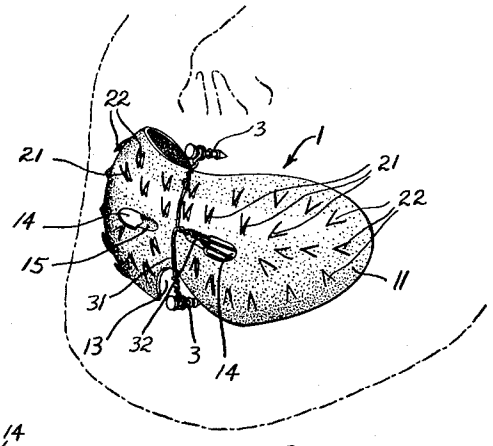


Fig. 2.

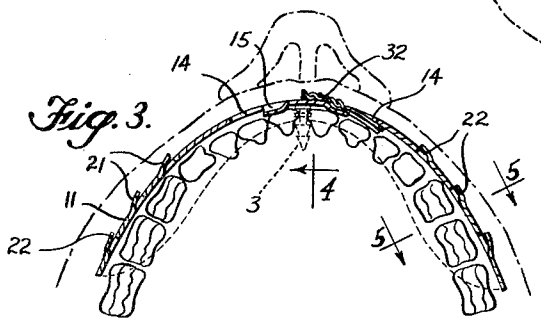


Fig. 3.

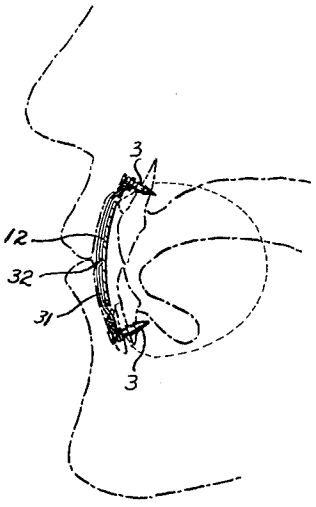


Fig. 4.

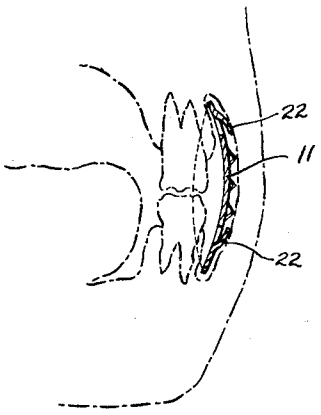


Fig. 5.

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The present device is intended for use by morticians in restoring the expression of the mouth of a corpse to one more natural than has heretofore been possible. In addition to restoring the natural expression the present device is also a lip closing device, and it is capable of being used with dentures or where dentures are lacking, and still will attain a natural expression. Thus the present device has a threefold primary purpose.

There have been devices for one or more such purposes available, but in all instances known to me they have been objectionable in certain respects. One such device, made of metal, is of rigid construction, and is limited to uses where dentures are absent, but it provides a rough external outline and unnatural fullness, visible to the observer, because of its metallic inflexibility and rigidity. Another, although soft and flexible to the touch, presents additional thickness when used as a former alone with natural or artificial dentures already present, thus also giving the undesirable impression of excessive fullness about the mouth. In addition, the smooth surface of this latter device lacks the necessary means of holding the tissues of the mouth in place, once they are formed to the desired expression, and the lips then tend to draw and become thin. Still another such device is of stretchable elastic material, and necessarily so in order to instal it properly, and as a result in many cases it draws the musculature about the mouth into an unnatural or strained expression. Still another, which is of resilient material, must be stretched in order to engage its spurs with the muscles around the mouth, and it is extremely difficult to avoid overstretching the muscles, and thus because of the inherently necessary manner of engaging the device with the muscles to avoid a drawn or unnatural expression.

The present device, then, has for its object the provision of an expression former which without change can be adapted to most, if not all mouths with or without dentures, but which can be trimmed readily to fit if found to be too large, either locally or over all, which is sufficiently rigid and form-sustaining that it maintains the natural expression, yet thin enough that it does not provide unwanted bulk. It also is arranged in such manner as to engage or disengage easily the several muscles, to restore to them the natural tension rather than to permit them to sag, and to retain them in a natural expression without distortion. It especially lends itself to speed and ease of application, and to a trial and error method of achieving the desired result. It is of a nature that affords no hazard to the operator. In addition it is low in cost and is arranged to accommodate other devices used in the preparation of corpses, as for example, the needle injector wires which retain the expression former in place and which primarily maintain the jaws closed.

With these and other objects in mind, as will shortly appear, the present invention comprises the novel expression former shown in the accompanying drawings in a presently preferred form, and as will be more fully described herein and defined in the claims.

FIGURE 1 is a general perspective view of the expression former as it would be supplied ready for use.

FIGURE 2 is a similar view of the expression former but related as it would be in use to the features of a corpse.

FIGURE 3 is a transverse sectional view through the former, showing the same related to the features of a corpse.

FIGURE 4 is a vertical sectional view, substantially at the line 4—4 of FIGURE 3, and FIGURE 5 is a similar view substantially at the line 5—5 of FIGURE 3.

The aim of morticians is so to compose the features of a corpse as to give the face an expression similar to that which the deceased possesed in life. Primarily and almost exclusively this effort is concentrated in arranging the lines of and about the mouth so that on the one hand the buccal muscles will not droop, the lips will not appear thin and drawn, and there will be no protrusions or excess bulk apparent. Such efforts are complicated occasionally by the absence of dentures, or by the presence of dentures which force lip closing devices commonly used to bulge out, and so to give an unnatural expression about the mouth. Also it must be kept in mind that dental arches vary in breadth and curvature, and an expression former to be of practical value must be capable of fitting all sizes and types of dental arch, as well as the curvature in a vertical plane of the gums and teeth.

The present device comprises what may be termed a plate, although it is not flat, formed of thin, limitedly flexible but inelastic material, for the most part formed in a shape that is inherently form-sustaining, notwithstanding its thinness, which may be as little as 0.02" or even less. Such a plate, indicated in general by the numeral **1**, may be of a plastic material such as thermoplastic polyethylene, or any other suitable material, formed transversely to the general shape of a dental arch, and consisting of two cups **11** and a medial connection **12** between them. Besides being curved transversely to fit the dental arch the cups **11** are curved in the vertical direction as well, so that they are appreciably cupped, whereby they will fit closely to the curvature of the teeth and gums, as is best seen in FIGURE 5, without undue bulging outwardly of the cheeks. The medial connection **12** is slightly curved in the vertical direction, but is appreciably flatter in this direction than the cups **11**, as may be seen by comparison of FIGURES 4 and 5. This medial connection also fits the dental arch, but by reason of its greater flatness the former **1** as a whole may be flexed transversely to fit smaller or larger dental arches, without buckling in the region of the connection **12** and without distortion of the cups **11**.

The former **1** is of a size and marginal shape to fit between the lips and cheeks and the gums and teeth of the corpse, and to extend beyond the lips. Indeed, it extends materially beyond the orbicularis oris muscle which encircles and to a degree controls the expression of the lips. The expression of the lips is not wholly controlled by the orbicularis oris but is also controlled to an appreciable extent by muscles which radiate from the orbicularis oris. In order to restore a natural expression to the mouth it is necessary that the natural tension of each of these muscles be substantially restored, and especially those adjacent the corners of the mouth.

To accomplish this end the plate **1** is provided with a series of spurs surrounding the lips and in general directed towards the lip margins. These spurs are preferably arranged in two series, each series being generally oval in shape, in each cup **11**. Thus, for example, the spurs **21** are arranged in an oval close to the lip margins, and the spurs **22** are arranged in an outer oval. The spurs **21** are intended to pierce and so engage the orbicularis oris muscle, and thereby to retain the lips closed and the expression natural, and the spurs **22** engage primarily the radial musculature and prevent these muscles from sagging, thereby restoring the natural tension and expression to them and to the face as a whole.

It is not sufficient to maintain the lips closed, but the jaws must also be held closed. To accomplish the latter end it is common practice to use injector needles **3** which are fixed in the upper and lower jaws respectively and

then are joined by wires 31 which are twisted together at 32. The plate 1 should ordinarily be recessed as indicated at notch 13 to accommodate at least the lower injector needle 3. Furthermore, in order that there be no bulge in the lips, produced by the twisted ends 32 of the wires, the plate 1 is provided with an aperture 14 near the median line to receive the ends of the wires 31, and with a groove or depression 15 leading into the same. The aperture 14, while located adjacent the medial vertical plane, is desirably offset to one side, and the depression 15 leads from that plane to the slightly laterally offset aperture. Two such apertures and grooves, at opposite sides of the median line, may be used, although one is sufficient, and when two are used they assist in orienting the plate during the process of manufacture.

In use the plate 1 is inserted between the gums and teeth and the lips and after the jaws have been closed properly and held, the plate is engaged by its spurs 21 and 22 with the muscles surrounding the lips, care being taken to restore the initial tension to the muscles and so to produce a natural expression. Disengagement and re-engagement with the muscles to achieve the desired result by trial and error is easily accomplished. If the plate is of a curvature greater than the dental arch of the corpse it may be flexed in the medial portion 12 without distortion or change in the shape of the cups 11, and without buckling at the relatively flat medial connection 12. Similarly if it is of insufficiently great curvature it may be bent outwardly to fit without buckling in the medial portion, and without substantial distortion at any other place.

The plate is capable of being formed of a plastic material of the general nature indicated, which will retain its shape when formed, which can be thin enough, say about one-forty-eighth inch, that it will not produce any bulk by its presence, while still permitting flexure, and it can be of a color which will simulate the natural color of the lips. It can readily be trimmed, if this is found necessary. The cups are always form-sustaining, despite their thinness, the material being resiliently flexible, though substantially inelastic. The former has a threefold purpose: it closes the lips, it forms the mouth, and it replaces dentures. In addition it cooperates with jaw-closing devices commonly used, and the spurs are strategically located to support the general buccal musculature, and to facilitate forming the overall desired facial expression. Each spur is located to control a particular muscle, except that the inner spurs 21 in the aggregate regulate the orbicularis oris as a whole and support the lips in proper position. The cups are precurved and maintain their curvature to the contour of the gums and teeth in the vertical direction as well as transversely.

The device is of light weight and low in cost. It has no pointed metallic projections which can injure the mortician preparing the corpse.

The plate is simply made. It can be preliminarily blanked out in the flat, at the same time punching out holes 14 and pressing grooves 15. Next it is formed with pressure and heat into the cupped and curved form described, using the holes 14 as guides or register devices, and blanking and pressing out the spurs 21, 22. This simple two-stage manufacturing operation, and the material of which the former is made, contribute to low cost.

I claim as my invention:

1. A natural expression former for insertion within the mouth of a corpse, comprising a plate of a marginal shape to define two end portions and a medial connecting portion, of a size to extend outwardly to all points beyond the lips and to fit between the lips and the teeth and gums, the plate as a whole having an inherent transverse curvature, and in its end portions at least being inherently curved also in the direction at right angles to the transverse curvature, and being of a material sufficiently inflexible yet thin that it is rendered form sustaining by reason of its double curvature, yet does not bulge when inserted, the material of said plate being also limitedly flexible to bend at least in its medial portion to fit differing dental arches, without substantial buckling or disturbance of the overall shape thereof, and being further substantially inelastic, and spurs projecting from said plate toward and engageable with the muscles around the mouth, to restore to such muscles a tension corresponding to their natural tension during life.

2. An expression former as in claim 1, including an aperture in the plate located in the vicinity of the central portion of the closed lips and of a size to receive and confine the twisted end of an injection needle wire which holds the jaws closed.

3. An expression former as in claim 1, wherein the plate is of a thin plastic material.

4. An expression former as in claim 3, wherein the spurs are of plastic material outstanding from and integral with the plastic plate.

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