United States Patent

Wilbanks

[15] 3,651,800

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[54] SURGICAL INSTRUMENT

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[30] Foreign Application Priority Data

May 15, 1970 Japan 45/15403

[52] U.S. Cl. 128/12

[51] Int. Cl. A61b 1/06

[58] Field of Search 128/12, 13, 14, 15, 16, 20

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Primary Examiner—Lucie H. Laudenslager

Attorney—Shoemaker and Mattare

[57] ABSTRACT

An elongated hand-held surgical instrument for use in intraoral lower jaw defect correcting surgery including an operative end portion for insertion within a surgical wound or incision and having an integral curved tab therein for engaging behind a ramus of a mandible and a retracting portion inwards of said end portion having opposite concave-convex surfaces for retracting the cheek and corner of the mouth during surgery with the concave surface engaging the corner of the mouth.

7 Claims, 6 Drawing Figures

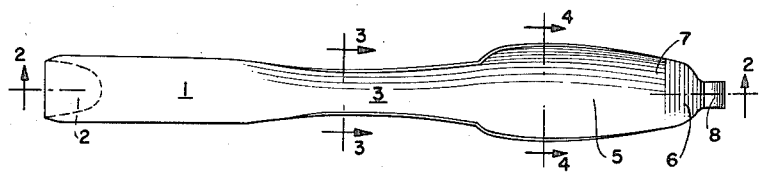

FIG. 1.

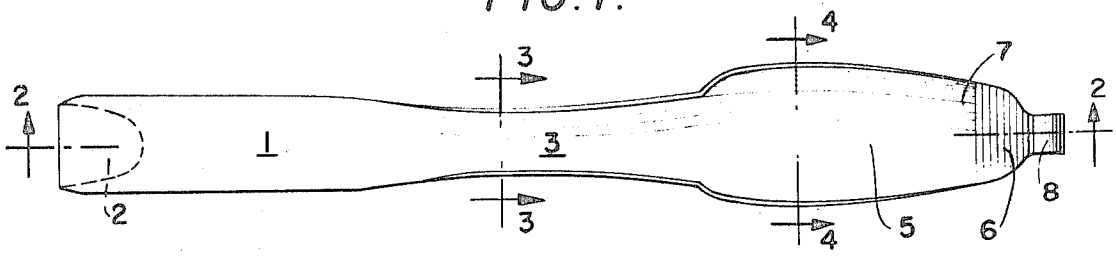

FIG. 2.

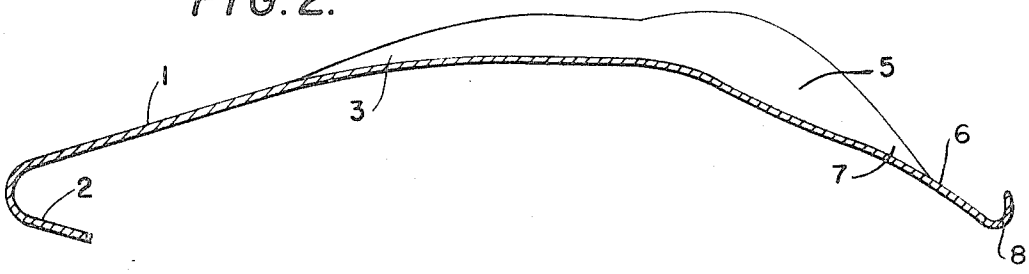

FIG. 3.

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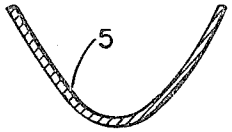


FIG. 5.

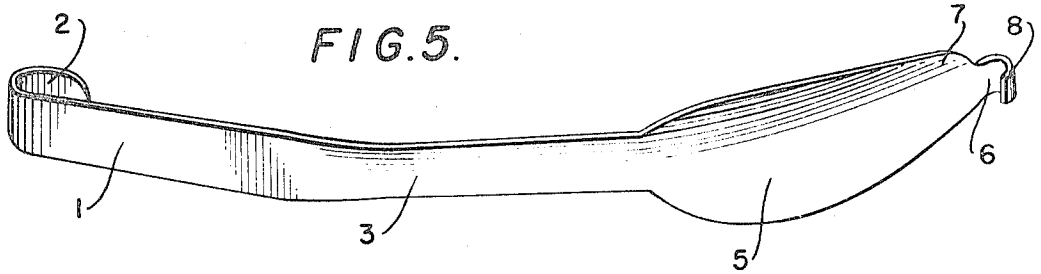
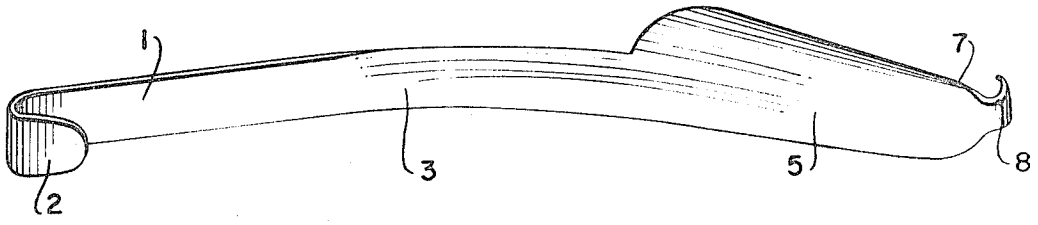


FIG. 6.



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SURGICAL INSTRUMENT

BACKGROUND OF THE INVENTION

The present invention relates broadly to the art of surgical instruments.

More particularly, this invention relates to a surgical instrument, specifically a tissue retractor for use in intraoral surgical correction of developmental deformities of the human jaw.

Still more particularly, this invention relates to a hand-held tissue retractor for use in the correction of mandibular prognathism, i.e. a protruding lower jaw by intraoral osteotomy.

While many operating techniques, both intra- and extraoral, have been devised to correct the protruding lower jaw deformity, the intraoral approach has certain advantages such as the absence of an external scar.

Accordingly the surgical instrument or tissue retractor of this invention is provided for use in an intraoral osteotomy termed a double oblique osteotomy in which each vertical ramus of the mandible (lower jaw) is cut in two oblique directions. As the lateral aspect of the ramus is visualized, one obliquity is produced by slanting the cut from near the upper anterior border of the ramus down and posteriorly to the posterior border, and the other obliquity is produced at the same time by cutting through the ramus on the bias in a lateral-to-medial direction, as opposed to a perpendicular cut from lateral to medial. It is readily apparent that this latero-medial obliquity facilitates the setback of the jaw with the desired overlap of the smaller portion of the bone upon the main portion thereof.

Accordingly, the invention provides a hand-held surgical instrument or tissue retractor including a handle portion, an arched or bowed intermediate shank portion, a continuous arched or bowed concave-convex or spoon shaped portion, and an outer portion having an upwardly curved tab for engaging behind the ramus during the operation.

Specifically, in accordance with the invention, the handle portion is straight and flat and has a reversely curved tab bent toward the tip end of the retractor to provide a cradle for the user's little finger, the shank portion is concave-convex of less width than the concave-convex spoon shaped portion and the outer portion is flat and the ramus engaging tab is of reduced width.

The surgical instrument of the invention when introduced into the wound facilitates the above-mentioned double oblique osteotomy. It elevates and protects the overlying musculature of the jaw during the bone surgery, retracts tissue, i.e. the cheek and corner of the mouth, without undue trauma due to the concave-convex design of the spoon portion, it engages the posterior border of the vertical ramus of the mandible, bringing the ramus anteriorly and holding it firmly during the operation, and it also facilitates visibility of the operative site due to its bow shape which takes the handle portion out of the direct line of vision.

BRIEF DESCRIPTION OF THE DRAWINGS

Further and more specific advantages and features of the invention will be more readily apparent from the following description when taken in connection with the accompanying drawings in which:

FIG. 1 is a top plan view of the surgical instrument of the invention;

FIG. 2 is a longitudinal cross-sectional view taken along line 2—2 of FIG. 1;

FIGS. 3 and 4 are transverse cross-sectional views taken along lines 3—3 and 4—4, respectively, of FIG. 1;

FIG. 5 is a perspective view of the surgical instrument as viewed from front or upper side; and

FIG. 6 is a similar view of the surgical instrument as viewed from the rear or lower side.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The surgical instrument of the invention is a one-piece shaped stainless steel member having a thickness of one-sixteenth of an inch and being approximately 11 inches long.

As viewed in plan, the instrument has the general appearance of a spoon having a narrow protruding tip. As viewed from the side, the instrument has a straight handle portion and is bowed or arched outwardly of the handle portion to the tip.

Thus, the handle portion 1 is flat and straight and approximately 4 inches long and 1 inch wide. The end of the handle is tapered and turned under in a U-shaped bend to prove a finger cradling tab 2. The handle portion merges into a shank portion 3 which has opposite concave-convex surfaces, and a length somewhat shorter than the length of the handle. The shank portion in turn merges into a bowl or spoon shaped portion having opposite concave-convex surfaces and of deeper concave cross section. This bowl or spoon shaped retracting portion is approximately 1⅝ inches in width at its widest diameters at 5 and narrows gradually from this point down to be approximately seven-eighths of an inch wide at its outer end of the bowl shaped portion. Approximately the last inch of length of the device beyond the bowl or spoon portion is flat at 6 as compared with the convexity of the bowl portion at its greatest and has tapered side edges as at 7. An arcuate or curved rectangular tab 8 approximately three-eighths of an inch in width projects from the end of the flat outer portion. This tab is bent upwardly in semi-circular fashion back toward the concave side of the bowl or spoon shaped retracting portion and constitutes means for engaging behind the vertical ramus of a mandible during an intraoral jaw defect correcting osteotomy.

In using the surgical instrument or tissue retractor of the invention, the same is grasped so that the little finger is cradled in the U-shaped tab portion or hook 2, the remainder of the fingers wrap around the handle portion 1 and the thumb rests against the concave surface of a portion of the shank portion near the handle. An appropriate incision is made in the intraoral mucosa of the cheek so that the lateral aspect of the mandible or lower jaw bone is exposed. The tissue retractor is introduced into the wound with the concave surface of the bowl or spoon portion toward and against the bone and pushed deep posteriorly so that the curved tab or hook 8 engages the posterior border of the vertical ramus of the mandible or lower jaw. With the retractor in this position, the convex surface of bowl portion 4 engages the corner of the mouth and the overlying musculature is being retracted together with the cheek and corner of the mouth and that side of the jaw is being brought anteriorily and held firmly facilitating the previously mentioned double oblique osteotomy or bone carpentry necessary for the subsequent setback of the jaw. Due to the bowed or arch shape of the shank and bowl portions relative to the handle, the visibility of the operative site is facilitated since the user's hand is out of the direct line of vision. The operative procedure is performed bilaterally, i.e. on both sides of the mandible and the instrument or retractor is adaptable to both sides.

As this invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, the present embodiment is therefore illustrative and not restrictive, since the scope of the invention is defined by the appended claims rather than by the description preceding them, and all changes that fall within the metes and bounds of the claims or that form their functional as well as conjointly cooperative equivalents, are therefore intended to be embraced by those claims.

What is claimed is:

1. In an elongated hand-held and manipulated intraoral jaw defect correcting surgical instrument, an operative end portion for insertion within an interaoral surgical incision having means thereon for engaging the posterior border of the vertical ramus of a mandible, and said instrument further including

a retracting portion inwards of said end portion having opposite concavenconvex surfaces for retracting the cheek and corner of the mouth during surgery with the convex surface engaging the corner of the mouth.

2. A surgical instrument as claimed in claim 1 and further including a shank portion having opposite concave-convex surfaces extending inwards of said retracting portion and a hand gripping portion extending inwards of said shank portion.

3. A surgical instrument as claimed in claim 2 and said retracting portion and shank portion being longitudinally bowed, and said hand grip portion being straight.

4. A surgical instrument as claimed in claim 3 and a reversely bent finger cradling tab extending from the end of said hand grip portion from the surface thereof opposite the concave surface of said retracting portion.

5. An elongated hand-held and manipulated one-piece intraoral surgical instrument comprising, a substantially flat straight hand gripping portion with a hook at the end thereof, a curved concave-convex shank portion forwardly of said hand grip portion, a curved concave-convex retracting portion forwardly of said hand grip portion and of greater width than the width of said shank portion, a tapered end portion forwardly of said retracting portion and a hook at the end thereof facing said tapered end portion.

6. A surgical instrument as claimed in claim 5 and said instrument being of stainless steel.

7. An elongated hand-held and manipulated one-piece stainless steel intraoral surgical instrument comprising, a straight flat hand gripping portion, a longitudinally bowed shank portion beyond said hand gripping portion and having opposite concave-convex surfaces, a longitudinally bowed retracting portion beyond said shank portion and having opposite concave-convex surfaces, said retracting portion having oppositely outwardly bowed side edges and being of deeper concave-convex cross section than said shank portion, an end portion beyond said retracting portion, an integral inwardly curved tab projecting from the surface of said end portion opposite the convex surface of said retracting portion, an integral reversely bent finger cradling tab at the end of said hand grip portion and spaced from the surface thereof opposite the concave surface of said shank portion, whereby with the user's little finger cradled by said last mentioned tab, the other fingers wrapped around the hand grip portion with the thumb resting against the concave surface of the shank portion adjacent the hand grip portion and the instrument inserted within an intraoral surgical incision, the first mentioned tab engages the posterior border of the vertical ramus of a mandible, and a convex surface of the retracting portion engages in the corner of the patient's mouth and retracts the cheek and corner of the mouth with the user's hand out of the direct line of vision toward the operative site.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,651,800 Dated March 28, 1972

Inventor(s) James L. Wilbanks

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the cover sheet, cancel "[30] Foreign Application Priority Data May 15, 1970 Japan.....45/15403".

Signed and sealed this 21st day of November 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

FORM PO-1050 (10-69)

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* U.S. GOVERNMENT PRINTING OFFICE : 1969 O—366-334.