

SURGICAL SAW FOR CUTTING OFF JAWBONE

BACKGROUND OF THE INVENTION

TECHNICAL FIELD

5 The present invention relates to a surgical saw for cutting off a jawbone for cutting a certain part of both sides of a protruded jawbone during a plastic operation for shaping a protruded jawbone, and in particular to a surgical saw for cutting off a jawbone in which a toothed portion and a shank are parallel and reciprocate for
10 thereby cutting off a jawbone.

BACKGROUND ART

Generally, a human's jaw represents a portion protruded from a lower portion of a face. If a person has a certain width between the left and right portions of a jaw
15 and a properly protruded portion, the person looks smooth. If a person has an over protruded jaw or over-concave portion, the person looks bad. On particular, in the case of a person who has a large width between the left and right portions of the jaw and has an angled corner portion in both lower sides of the jaw, the face looks larger, so that the person looks tough and strong. So, the person gives a bad impression to
20 others.

Therefore, recently, a rectangular jaw shaping plastic operation is widely performed, in which a contour line of the face is formed to look slim and smooth by cutting off both sides of the jaw protruded in a lower direction of the face for thereby implementing a smooth impression. In the above rectangular jaw shaping plastic
25 operation, a jawbone cutting-off operation is widely performed, in which both corner sides of the jawbone is cut-off. In the above jawbone cutting-off operation, a protruded portion of the jawbone by which a human's face looks protruded or rectangular, is cut-off for thereby basically removing the protrusions, so that it is possible to implement

a significant operation effect.

As shown in Figure 1, the conventional jawbone cutting-off saw 1 which is used for shaping a rectangular shaped jaw includes a rotation shaft 10 formed in a thin straight rod shape, and an ellipse or circular toothed portion 11 engaged to a front
5 end of the rotation shaft 10.

As shown in Figures 2 and 3, in the conventional jawbone cutting-off saw, a rear end of the rotation shaft 10 is engaged to a jaw 21 of a handle 2. The toothed portion 11 is angular-operated at a certain angle range integrally with the rotation shaft by a rotation motor mechanism installed in the handle 2 for thereby cutting-off the
10 corner portions of the jawbone 101 of a skull 100 at the angle as shown in Figures 4 and 5.

In the case of the conventional jawbone cutting-off surgical saw, since the rotational radius of the toothed portion 11 is large, an outer skin of the jaw is cut, and then the jawbone 102 is cut-off through the cut outer skin. Therefore, an operation
15 scar is formed after the operation. In addition, as shown in Figure 5, since the jawbone is cut-off in a nearly vertical direction with respect to a face, the contour line of the jaw seen in the lateral direction is a smooth curved line. However, the contour line of the jaw in the front direction with respect to the face which most important for the expression of a person is not reshaped. In addition, since the jawbone is cut-off in a
20 state that the contour of the face of a patient is not seen in the front direction, it is impossible to accurately reshape the contour line of the jaw even when an expert doctor who has a long operation background performs the operation. Furthermore, when the jawbone is cut-off in a certain direction which is nearly vertical with respect to the front face, and the cut-off portion has a certain angle with respect to the front
25 face. In this case, the jawbone is repeatedly cut-off by a little depth for overcoming the above-described angled problems. Therefore, the operation is very difficult. As a result, in the case that the conventional jawbone cutting-off surgical saw is used for reshaping the jawbone in the lateral direction, it is impossible to smoothly reshape the

contour line of the jaw. Since the jawbone is cut-off in the vertical direction with respect to the face, a muscular tissue embedded in the jawbone or a nerve structure may be damaged during the operation.

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DISCLOSURE OF THE INVENTION

Accordingly, it is an object of the present invention to provide a surgical saw for cutting off a jawbone which overcomes the problems encountered in the conventional art.

10 It is another object of the present invention to provide a surgical saw for cutting off a jawbone which is capable of cutting off a jawbone at a certain angle with respect to a front face while checking a contour line of a face by cutting off an inner side of a mouth without cutting off an outer skin, so that there is not any operation scar in the face, and a natural contour line is obtained based on a simple surgical operation.

15 In order to achieve the above object, there is provided a surgical saw for cutting off a jawbone which includes a shank which includes a straight line portion having a rear end fixed by a jaw of a handle, and a curved portion extended at a certain deflection angle in a certain direction between left and right directions and a lower direction from a front end of the straight line portion, and a toothed portion in which teeth are arranged in parallel with respect to the straight line portion in a vertical lower
20 direction and engaged to a front end of the curved portion of the shank.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become better understood with reference to the accompanying drawings which are given only by way of illustration and thus are not
25 limitative of the present invention, wherein:

Figure 1 is a perspective view illustrating a conventional jawbone cutting-off surgical saw;

Figure 2 is a perspective view illustrating a motored saw in which a

conventional jawbone cutting-off saw is engaged;

Figure 3 is a side view illustrating a motor saw in which a conventional jawbone cutting-off saw is engaged;

Figure 4 is a perspective bottom view illustrating a using state of a motored saw
5 in which a conventional jawbone cutting-off saw is engaged;

Figure 5 is a perspective top view illustrating a using state of a motored saw in which a conventional jawbone cutting-off saw is engaged;

Figure 6 is a perspective view illustrating a surgical saw for cutting off a jawbone according to the present invention;

10 Figure 7 is a perspective view illustrating a motored saw in which a jawbone cutting-off saw is engaged according to the present invention;

Figure 8 is a front view illustrating a jawbone cutting-off saw according to the present invention;

15 Figure 9 is a side view illustrating a jawbone cutting-off saw according to the present invention;

Figure 10 is a perspective bottom view illustrating a using state of a jawbone cutting-off saw according to the present invention; and

Figure 11 is a perspective top view illustrating a using state of a jawbone cutting-off saw according to the present invention.

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MODES FOR CARRYING OUT THE PREFERRED EMBODIMENTS

The construction, operation and effects of the jawbone cutting-off surgical saw according to the present invention will be explained with reference to the accompanying drawings.

25 As shown in Figure 6, the jawbone cutting-off surgical jaw 3 according to the present invention includes a slim rod shaped shank 30, and a toothed portion 31 engaged to a front end of the shank 30.

The handle 30 is formed of a crank shaped shank which includes a straight line

portion 30a and a curved portion 30b which is slightly slanted from the front end of the straight line portion 30a between a side portion and a lower portion. As shown in Figure 7, an engaging structure formed in a rear portion of the straight line portion 30a is engaged with a jaw 41 of a handle 4, so that the toothed portion 31 engaged to the end portion of the curved portion 30b is fixed at a certain distance from the jaw 41 of the handle 4. Therefore, a linear movement force of the jaw 41 which repeatedly reciprocates by a motored mechanism installed in the handle 4 is transferred to the toothed portion 31.

In the above shank 30, the curved portion 30b is formed in such a manner that a skin of an inner mouth is cut off at a minimum length and is deflected in a left or right direction and is deflected in a lower direction. Namely, in the preferred embodiment of the present invention, the jawbone cutting-off saw 3 is formed of a left cutting-off saw capable of cutting off a left side of the jawbone and a right cutting-off saw capable of cutting off a right side of the same. When cutting in the left side direction, as shown in Figure 8, the curved portion 30b is curved at a deflection angle of 45° within an angle range of $30^\circ \sim 60^\circ$ in the right direction with respect to the straight line portion 30a and is curved at a deflection angle of 45° preferably within an angle range of $30^\circ \sim 60^\circ$ in a lower direction. In addition, when cutting in the right side direction, the curved portion 30b is curved at a deflection angle of $30^\circ \sim 60^\circ$ in the left direction and is curved at a deflection angle of $30^\circ \sim 60^\circ$ in the lower direction.

The toothed portion 31 directly cuts off the jawbone 101. As shown in Figures 6 through 9, the toothed portion 31a is arranged in parallel with respect to the straight line portion 30a in the front end of the shank 30, namely, in the front end of the curved portion 30b in such a manner that the toothed portion 31a is arranged in the vertical lower direction. As shown in Figures 10 and 11, as the shank 30 reciprocates by the jaw 41, the toothed portion 31a of the lower portion cuts off the jawbone 101.

As shown in Figures 10 and 11, in the jawbone cutting-off surgical saw according to the present invention, in a state that the curved portion 30b is inserted

through the skin cut in the inner mouth in a direction crossing the face of the patient, the jaw 41 reciprocates by the motored mechanism installed in the handle 4, and the toothed portion 31 reciprocates integrally with the shank 30, so that the forwardly or laterally protruded portions of the jawbone 101 are cut-off in a parallel angle with respect to the surface of the face. Therefore, in the present invention, it is possible to cut off the protruded portions of the jawbone 101 in all directions at the same curvature as the face and at a similar angle. Therefore, in the present invention, it is possible to reshape the protruded portions of the jawbone without an angle in the contour line of the jaw.

When performing a jaw plastic operation using the jawbone cutting-off saw according to the present invention, it is possible to cut off the jawbone by cutting the inner side of the mouth without cutting off an outer skin of the mouth, so that the contour line of the jaw is reshaped without operation scar.

In addition, the jawbone is cut at a slanted angle which is parallel with respect to the front surface based on one time cutting operation with respect to the jawbone by directly checking the cut portions and the contour line of the jaw for thereby implementing a natural appearance of the jaw at a short time. In addition, since the toothed portion is not largely inserted into the skin, it is possible to prevent any damage of skin such as muscular tissue or nerve of the jaw.

As the present invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, it should also be understood that the above-described embodiments are not limited by any of the details of the foregoing description, unless otherwise specified, but rather should be construed broadly within its spirit and scope as defined in the appended claims, and therefore all changes and modifications that fall within the meets and bounds of the claims, or equivalences of such meets and bounds are therefore intended to be embraced by the appended claims.

CLAIMS

1. A surgical saw for cutting off a jawbone, comprising:

5 a shank which includes a straight line portion having a rear end fixed by a jaw of a handle, and a curved portion extending from a front end of the straight line portion and being deflected in a certain direction between left and right directions substantially at an angle of $30^{\circ}\sim 60^{\circ}$ with respect to the straight line portion and in a lower direction substantially at an angle of $30^{\circ}\sim 60^{\circ}$ with respect to the straight line portion; and

10 a toothed portion in which teeth are arranged in parallel with respect to the straight line portion in a vertical lower direction and engaged to a front end of the curved portion of the shank.