CLAIMS

1. An elastic tongue-dorsum retraction device, comprising:

a tongue dorsum connection mechanism;

an elastic retractor; and

a tooth-side fastener,

wherein:

the tongue dorsum connection mechanism is an under-the-tongue-mucosa tunnel-type retraction connection mechanism or a connector adapted to be disposed at the tongue dorsum to prevent sagging of the tongue;

the elastic retractor is made of a medical elastic material, the elastic retractor is a medical elastic film, an elastic strip-shaped object, an elastic wire object or a spring object that can stretch and produce a restoring force under the effect of an external force and can restore its original shape after the external force released, or an elastic mechanism comprising the elastic strip-shaped object, an elastic mechanism comprising the elastic wire object, or an elastic mechanism comprising the spring object;

the tooth-side fastener comprises a support bracket capable of supporting the tooth-side fastener, an elastic-retractor tooth-side connection mechanism that can be connected to the elastic retractor, and a tooth-side fastening mechanism capable of fixing the tooth-side fastener to teeth, the alveolar bone, the maxilla, the mandible, or the maxilla and mandible; and the elastic-retractor tooth-side connection mechanism and the tooth-side fastening mechanism are disposed on the support bracket;

the tooth-side fastener is configured to serve as a force-bearing fulcrum and is adapted to be fixed to teeth or the alveolar bone through the tooth-side fastening mechanism, or the tooth-side fastener is adapted to be removably fixed outside the maxilla lip, the mandible lip, or the maxilla and mandible lips through the tooth-side fastening mechanism; and one end of the elastic retractor is connected to the elastic-retractor tooth-side connection mechanism of the tooth-side fastener, and the other end of the elastic retractor is connected to the tongue dorsum connection mechanism; and

at least one of the tooth-side connection mechanism and the tongue-side connection mechanism comprises a magnetic connection mechanism.

2. The elastic tongue-dorsum retraction device according to claim 1, wherein the tongue dorsum connection mechanism is adapted to be disposed in a tongue dorsum area that is in front of circumvallate papillae of the tongue and has a longitudinal length L of 0.1 cm to 5 cm, a transverse width W of 0.2 cm to 6 cm and a depth H of 0.1 cm to 1.0 cm along the oral cavity.

3. The elastic tongue-dorsum retraction device according to claim 1, wherein the elastic retractor forms an elastic retraction force of 15 g to 300 g between the tooth-side fastener and the tongue dorsum connection mechanism.

4. The elastic tongue-dorsum retraction device according to claim 1, wherein the under-the-tongue-mucosa tunnel-type retraction connection mechanism of the tongue dorsum connection mechanism is an implant that forms an under-the-tongue-mucosa epithelialized tunnel after the implant is removed, or is a thin-walled tube-shaped implant that forms an under-the-tongue-mucosa tunnel after the thin-walled tube-shaped implant is implanted.

5. The elastic tongue-dorsum retraction device according to claim 1, wherein the connector of the tongue dorsum connection mechanism is a fully-implantable connector that can be fully implanted under the tongue mucosa, a semi-implantable connector that is partially implanted under the tongue mucosa and partially exposed out of the tongue mucosa, or a mucosa-surface-fixed-type connector that can be fixed to the mucosa of the tongue dorsum.

6. The elastic tongue-dorsum retraction device according to claim 1, wherein the elastic retractor comprises a tongue-side connection mechanism that can be connected to the tongue dorsum connection mechanism.

7. The elastic tongue-dorsum retraction device according to claim 1, wherein the elastic retractor comprises a tooth-side connection mechanism that can be connected to the tooth-side fastener.

8. The elastic tongue-dorsum retraction device according to claim 1, wherein the elastic retractor is an elastic strip-shaped object, the elastic strip-shaped object is made of a medical silica gel film, a medical latex film, a medical polyurethane film, a medical rubber film or an elastic medical material braid, and the elastic strip-shaped object has a thickness of 0.01 mm to 3 mm.

9. The elastic tongue-dorsum retraction device according to claim 1, wherein the elastic retractor is a medical elastic wire object, the medical elastic wire object is made of medical silica gel, medical latex, medical polyurethane, medical rubber or an elastic medical material braid, and the medical elastic wire object has a diameter of 0.05 mm to 5 mm.

10. The elastic tongue-dorsum retraction device according to claim 1, wherein the elastic retractor comprises a tongue-side connection mechanism, an elastic deformation mechanism and a tooth-side connection mechanism; the tongue-side connection mechanism and the tooth-side connection mechanism are separately disposed at two ends of the elastic retractor, the tongue-side connection mechanism is provided with one tongue-side connection hole, and the tooth-side connection mechanism is provided with at least one tooth-side connection hole; and the elastic deformation mechanism is disposed between the tongue-side connection mechanism and the tooth-side connection mechanism.

11. The elastic tongue-dorsum retraction device according to claim 1, wherein the tongue dorsum connection mechanism and the elastic retractor can be integrally formed by using an integral manufacturing technology so as to form an integral-type elastic retraction mechanism, and the integral-type elastic retraction mechanism comprises the tongue dorsum connection mechanism and the elastic retractor.

12. The elastic tongue-dorsum retraction device according to claim 1, wherein the tooth-side connection mechanism on the elastic retractor is connected to the tooth-side fastener by magnetic connection.

13. The elastic tongue-dorsum retraction device according to claim 1, wherein the tongue-side connection mechanism on the elastic retractor is connected to the tongue dorsum connection mechanism by magnetic connection.

14. The elastic tongue-dorsum retraction device according to claim 1, wherein the support bracket of the tooth-side fastener is a tooth-side fixing support bracket adapted to be fixed to upper teeth or lower teeth, a dental bone nail-type fixing support bracket adapted to be fixed to the alveolar bone, a dental sleeve-type fixing support bracket adapted to be removably fit to

upper teeth or lower teeth, or a support bracket adapted to be removably fixed outside the upper and lower lips.

15. The elastic tongue-dorsum retraction device according to claim 1, wherein the tooth-side fastener comprises a retraction-force adjustment mechanism capable of adjusting the magnitude of the retraction force of the elastic retractor.

16. The elastic tongue-dorsum retraction device according to claim 1, wherein the elastic retractor, the tongue dorsum connection mechanism or the tooth-side fastener is in a color matching that of human tissues.