CLAIMS

1. A dental mouthpiece formed in a curve, the dental mouthpiece comprising:

a main body portion at a central part of the curve having a first end and a second end, the main body portion having an anterior wall inside the curve and a posterior wall outside the curve, the anterior wall and the posterior wall defining an interior space corresponding to a distance between the anterior wall and the posterior wall, at least one connector connecting the anterior wall to the posterior wall, an anterior intervening wall protruding from and extending along an edge of the anterior wall, the anterior intervening wall having a span that extends partially across the distance of the interior space towards the posterior wall, and a posterior intervening wall extending along an edge of the posterior wall partially across the distance towards the anterior wall, and wherein an edge of the span of the anterior intervening wall has alternating crests and troughs that extend different distances partially across the interior space towards the posterior intervening wall;

a suction connector portion connected to the first end, the suction connector portion connecting the interior space to a vacuum suction source; and

a cheek retractor portion connected to the second end.

2. The mouthpiece of claim 1, wherein the at least one connector is a cylindrical shaped pillar.

3. The mouthpiece of claim 1, wherein the at least one connector includes at least one of a wall spanning longitudinally in the main body portion in the interior space.

4. The mouthpiece of claim 1, further comprising a bridge structure that includes one or more protrusions protruding from the posterior wall within the interior space, wherein the protrusions include spaced crests and troughs.

5. The mouthpiece of claim 4, wherein the protrusions vary in height and length.

6. The mouthpiece of claim 4, wherein spaces between the crests are troughs of the battlement-shape.

7. The mouthpiece of claim 1, wherein the alternating crests and troughs on the anterior intervening wall and the posterior intervening wall are semi-circle shaped.

8. The mouthpiece of claim 1, wherein at least one of the anterior intervening wall and the posterior intervening wall includes a plurality of portions of varying heights relative to a longitudinal axis of the mouthpiece.

9. The mouthpiece of claim 1, wherein the troughs of the anterior intervening wall and the posterior intervening wall decrease in size as the troughs approach the cheek retractor portion.

10. The mouthpiece of claim 1, wherein the anterior intervening wall and the posterior intervening wall meet at a point where the suction connector meets the main body portion.

11. The mouthpiece of claim 1, wherein the anterior intervening wall and the posterior intervening wall meet at a point where the main body portion meets the cheek retractor portion.

12. The mouthpiece of claim 1, further comprising a bite block integrated to the suction connector portion, wherein the bite block provides crush-resistance during biting by a patient.

13. The mouthpiece of claim 1, wherein the main body portion, the suction connector portion, and the cheek retractor portion are formed by injection-molding as one piece.

14. The mouthpiece of claim 1, wherein a material that forms the main body portion, the suction connector portion, and the cheek retractor portion is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

15. The mouthpiece of claim 1, wherein the posterior wall further includes a stability bar protruding from an interior surface of the posterior wall and along a longitudinal axis of the main body portion.

16. The mouthpiece of claim 15, wherein the at least one connector includes a plurality of evenly spaced connectors located along the stability bar.

17. The mouthpiece of claim 1, wherein the suction connector portion comprises a cutout corresponding to a protrusion on a vacuum adapter to provide an interlocking fit.

18. The mouthpiece of claim 1, where in the suction connector portion connects to the vacuum suction source, wherein activation of the vacuum suction source provides suction of fluids from the interior space of the main body portion.

19. The mouthpiece of claim 18, wherein the activation of the vacuum suction source draws fluids from an exterior of the main body portion into the interior space of the main body portion.

20. The mouthpiece of claim 1, wherein the cheek retractor portion includes a surface that applies pressure based on resilience of the cheek retractor portion.

21. A dental mouthpiece comprising:

a main body portion having a first end and a second end, the main body portion comprising:

an anterior wall,

a posterior wall spaced at a distance from the anterior wall, wherein an interior space corresponding to the distance between the anterior wall and the posterior wall is defined by the anterior wall and the posterior wall,

at least one connector that connects the anterior wall to the posterior wall within the interior space,

at least one intervening wall protruding from and extending along an edge of the anterior wall or the posterior wall, the at least one intervening wall having a span that extends partially across the distance of the interior space, and wherein an edge of the span of the at least one intervening wall has a plurality of alternating crests and troughs that extend different distances partially across the interior space, and

a neck extending from the second end of the main body portion, wherein a width of the neck is less than a width of the main body portion at the first end;

a suction connector portion connected to the first end of the main body portion, the suction connector portion further configured to connect the interior space to a vacuum suction source; and

a cheek retractor portion connected to the neck that extends from the second end of the main body portion, wherein the width of the neck is less than a width of the cheek retractor portion.

22. The mouthpiece of claim 21, wherein the at least one intervening wall includes a plurality of portions of varying heights relative to a longitudinal axis of the mouthpiece.

23. The mouthpiece of claim 21, further comprising a bite block integrated to the suction connector portion, wherein the bite block provides crush-resistance during biting by a patient.

24. The mouthpiece of claim 21, wherein the main body portion, the suction connector portion, and the cheek retractor portion are formed by injection-molding as one piece.

25. The mouthpiece of claim 21, wherein the suction connector portion comprises a cutout corresponding to a protrusion on a vacuum adapter to provide an interlocking fit.

26. The mouthpiece of claim 21, where in the suction connector portion connects to the vacuum suction source, wherein activation of the vacuum suction source provides suction of fluids from the interior space of the main body portion.

27. The mouthpiece of claim 26, wherein the activation of the vacuum suction source further draws fluids from an exterior of the main body portion into the interior space of the main body portion.

28. The mouthpiece of claim 1, wherein the span of the anterior intervening wall extends from the edge of the anterior wall to at least a mid-point of the interior space between the anterior wall and the posterior wall.