CLAIMS

1. A surgical retractor comprising:

an adjustable retractor frame having an adjustable circumference comprising a first frame segment and a second frame segment and two connectors;

the first frame segment and the second frame segment each comprising a first and a second substantially straight arm portion and a middle portion connecting the first and second substantially straight arm portions, the first and second substantially straight arm portion and the middle portion substantially in the same plane and each segment having a continuous fixed length, the long axes of the first and second substantially straight arm portions being parallel to each other and projecting to the same side of the middle portion, the middle portion forming a first and a second bend with the first and second substantially straight arm portions, respectively so that the long axis of the middle portion is perpendicular to the long axes of the first and second substantially straight arm portions, each frame segment having a top and bottom face with an inner edge and an outer edge;

the first frame segment and the second frame segment configured to connect to form said adjustable retractor frame when the first substantially straight arm portion of the first frame segment connects with the first substantially straight arm portion of the second frame segment and the second substantially straight arm portion of the first frame segment connects with the second substantially straight arm portion of the second frame segment;

the connectors configured to receive the first and second substantially straight arm portions of the first and second frame segments to form the adjustable retractor frame, wherein the connector can be in (i) an unlocked configuration that allows the substantially straight arm portions of the frame segments to move with respect to one another allowing the adjustable retractor frame to adjust or (ii) a locked configuration that fixes a substantially straight arm portion at a position relative to a substantially straight arm portion of the other frame segment; and

two or more retractor blades coupled to the frame where the face of the retractor blade forms an angle with the plane of the frame.

2. The retractor of claim 1, wherein the frame segments further comprise an expansion stop on one or both faces and at one or both ends of the frame segment that is configured to stop expansion of the frame prior to a frame segment passing completely through a connector.

3. The retractor of claim 1, wherein each of the connectors comprise a removable stop coupled with a prescribed slot or pattern of holes formed in the frame segment that together are configured to reversibly lock the connector in place.

4. The retractor of claim 1, wherein the connectors are configured to allow one or more frame segments to be expanded and do not allow one or more frame segments to be contracted.

5. The retractor of claim 4, wherein the connectors are affixed or removeably affixed to at least one frame segment.

6. The retractor of claim 4, wherein each of the connectors comprises a pawl configured to engage one or more frame segment.

7. The retractor of claim 6, wherein the connectors comprise individual pawls configured to interact with individual frame segments.

8. The retractor of claim 1, wherein each of the connectors is configured to position the ends of the frame segments in a stacked configuration.

9. The retractor of claim 1, wherein each of the connectors is configured to position the ends of the frame segments in an offset configuration.

10. The retractor of claim 1, wherein each of the connectors comprises a motorized, controlled, screw drive, worm gear, or removable locking system that allows the movement of both adjacent frame segments towards or away from each other

allowing the frame to be contracted or expanded when using the system.

11. The retractor of claim 1, wherein each of the connectors comprises one or more spring loaded brake mechanisms.

12. The retractor of claim 1, further comprising:

two or more retractor blade connectors for coupling the two or more retractor blades to the adjustable retractor frame;

wherein each of the two or more retractor blades are adjustable, each of the two or more retractor blade connectors being configured to receive a proximal portion of one of said two or more retractor blades and to reversibly fix a retractor blade position with a retractor blade locking mechanism incorporated therein, wherein the proximal portion of the retractor blade is moveable up and down until locked by said retractor blade locking mechanism.

13. The retractor of claim 1, wherein the outer edge of each of the first and second frame segment forms one or more notches or teeth.

14. The retractor of claim 13, wherein the teeth of the first frame segment are directed in an opposite direction relative to the teeth of the second frame segment when the first frame segment and the second frame segment are connected to form said adjustable retractor frame.

15. The retractor of claim 1, wherein the substantially straight arm portions of adjacent frame segments are positioned having the inner edge of one substantially straight arm portion aligned substantially parallel to the outer edge of an adjacent frame segment.

16. The retractor of claim 1, wherein the substantially straight arm portions of each of the first and second frame segment are about 2.5 to 50 centimeters in length and the

middle portion of each of the first and second frame segment is about 2.5 to 100 centimeters in length.

17. The retractor of claim 1, wherein the adjustable retractor frame in an expanded configuration has an adjustable internal distance of 2.5 to 90 centimeters.

18. The retractor of claim 1, wherein 2, 3, 4, 5, or 6 retractor blades are coupled to the adjustable retractor frame.