CLAIMS

1. ~~An adjustable~~A surgical retractor comprising:

~~A~~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, ~~where~~ the long ~~axis~~axes of the first and second substantially straight arm portions ~~are~~being parallel to each other and projecting to the same side of the middle portion, the middle portion ~~forms~~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~~,~~;

~~wherein~~ the first frame segment~~s~~ and the second frame segment ~~are~~ configured to connect to form~~with~~ said ~~a first arm portion of the first frame segment with the first arm portion of the second frame segment and the second arm portion of the first frame segment with the second arm portion of the second frame segment forming an adjustable retractor frame, and~~ 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 adjustment 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 ~~further~~ 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 5, wherein the frame segments are unequal in length.~~

~~7. The retractor of claim 5, wherein the frame segments are equal in length.~~

~~8. The retractor of claim 1, wherein the frame segments are equal in length.~~

~~9.~~6. The retractor of claim 4, wherein each of the connectors comprises a pawl configured to engage one or more frame segment.

~~10.~~7. The retractor of claim ~~9~~6, wherein the connectors comprise~~s~~ individual pawls configured to interact with individual frame segments.

~~11.~~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.

~~12.~~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.

~~13.~~10. The retractor of claim 1, wherein each of the connectors ~~is further comprised~~comprises ~~of~~ 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.

~~14.~~11. The retractor of claim 1, wherein each of the connectors ~~further~~ comprises one or more spring loaded brake mechanisms.

~~15.~~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, ~~and~~ each of the two or more ~~the~~ retractor blade connectors ~~is~~ being configured to receive a proximal portion of one of ~~the~~said two or more retractor blades and to reversibly fix ~~the~~a retractor blade position with a retractor blade locking mechanism incorporated ~~into the connector~~therein, wherein the proximal portion of the retractor blade is moveable up and down until locked by ~~a~~said retractor blade locking mechanism.

~~16. The retractor of claim 1, wherein the frame is a rounded polygon.~~

~~17. The retractor of claim 1, wherein the frame is a rounded quadrilateral.~~

~~18.~~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.

~~19.~~14. The retractor of claim ~~18~~13, wherein the teeth of the first frame segment are directed in an opposite direction relative to the teeth ~~on~~of the second frame segment when the first frame segment and the second frame segment are connected to form said adjustable retractor frame.

~~20.~~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.

~~21.~~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.

~~22.~~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.

~~23. The retractor of claim 1, wherein rounded angle of the frame segment is approximately 90 degrees.~~

~~24.~~18. The retractor of claim 1, wherein 2, 3, 4, 5, or 6 retractor blades are coupled to the adjustable retractor frame.

~~25. The retractor of claim 1, wherein 2, 3, 4, 5, or 6 retractor blades are comprised so they may become decoupled from the retractor frame.~~

~~26. The retractor of claim 1, wherein at least one retractor blade is coupled to a connector.~~

~~27. The retractor of claim 1, wherein at least one retractor blade coupled to a frame segment.~~

~~28. The retractor of claim 1, wherein at least one retractor blade is configured to be moveable along the retractor frame.~~

~~29. The retractor of claim 1, wherein the retractor is coupled to a bed frame.~~

~~30. The retractor of claim 1, wherein the retractor is attached to patient after being expanded.~~

~~31. The retractor of claim 1, wherein the retractor is configured for human surgical retraction.~~

~~32. The retractor of claim 1, wherein the retractor is configured for veterinary surgical retraction.~~

~~33. A surgical retractor frame segment comprising a first and second substantially straight and substantially parallel, with respect to each other, arm portions connected by a~~

substantially straight middle portion, the middle portion being connected to each substantially straight arm portion by a curve portion, the frame segment having a top and bottom face with an inner edge and an outer edge.

34. The frame segment of claim 33, further comprising one or more expansion stops that can be reversibly connected to the top or bottom face of the frame segment at or near one or both ends of the frame segment.

35. A surgical retractor connector comprising a body forming two or more lumens, each lumen configured to receive substantially straight arm portions of two adjacent frame segments, a ratchet mechanism configured to interact with at least one edge of a frame segment when inserted into the connector lumen, wherein the connector can be in (i) an unlocked configuration that allows the substantially straight arm portions of the adjacent frame segments to move with respect to one another allowing the circumference of the 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 adjacent frame segment.

36. The connector of claim 35, further comprising a retractor blade positioned below the frame and forms an angle with the plane of the frame.

37. The connector of claim 36, wherein the retractor blade is affixed to the connector body.

38. The connector of claim 36, wherein the retractor blade is attached a retractor blade arm that is configured to be removeably connected to the connector body.

39. A method of using the surgical retractor of claim 1, comprising:

inserting a contracted retractor of claim 1 in a wound or incision; and

expanding the surgical retractor in one or more superior, inferior, or lateral direction to expose a body cavity; and

locking the frame.