What is claimed is:

1. A cam lock clamp, comprising:

a disc spring stack comprising a number of disc springs;

a stud having a body portion, a first end portion, and a second end portion, the first end portion comprising a head area having a first diameter larger than a cross-sectional dimension of the body portion, the second end portion having a second diameter larger than the cross-sectional dimension of the body portion and arranged to support ~~one or more~~the disc ~~springs~~ spring stack concentrically about the stud, the stud configured to be non-rotatably affixed to a consumable electrode in a semiconductor plasma processing environment;

a socket arranged to mechanically couple concentrically around the stud and the supported ~~one or more~~ disc ~~springs~~ spring stack with the head area of the stud exposed above an uppermost portion of the socket, the socket configured to be firmly attached to ~~a~~ the consumable ~~material~~electrode, the disc spring stack being arranged within the socket to limit lateral movement of the stud in a direction substantially normal to a longitudinal axis of the stud, the disc spring stack and the stud arranged to be in rigid contact with the socket at a base portion of the socket; and

a camshaft having a substantially cylindrical body with a diameter larger than the first diameter of the head area, the camshaft being configured to mount within a bore of a backing plate and further comprising an eccentric cutout area located in a central portion of the cylindrical camshaft body, the camshaft being further configured to rotatably engage and lock the head area of the stud when the consumable ~~material~~ electrode and the backing plate are proximate to one another, the longitudinal axis of the stud being substantially normal to a longitudinal axis of the camshaft upon the rotatable engagement of the camshaft to the stud.

2. The cam lock clamp of claim 1 wherein the camshaft further comprises a first end and a second end, the first end having a keying pin configured to engage a slot in the backing plate, the second end having an opening arranged to rotate the camshaft to fully engage the head area of the stud thereby clamping the consumable ~~material~~ electrode to the backing plate.

3. The cam lock clamp of claim 1 further comprising a pair of camshaft bearings having an inside diameter and an outside diameter, the inside diameter sized such that the pair of camshaft bearings are mountable over opposite ends of the camshaft, the outside diameter sized to be larger than the diameter of the camshaft and smaller than the bore of the backing plate.

4. The cam lock clamp of claim 3 wherein the camshaft bearings are comprised of a substantially non-particle shedding material.

5. The cam lock clamp of claim 1 wherein the eccentric cutout area of the camshaft further comprises a cross-sectional area defined by a cutter path edge having a first and a second radius, the first radius arranged to tightly pull the head area of the stud toward the backing plate as the camshaft is rotated and the second radius configured to lock the ~~stud~~ head area of the stud in proximity to the backing plate as the camshaft is additionally rotated, the second radius further configured to provide an audible clicking noise to indicate when the stud is fully secured.

6. The cam lock clamp of claim 1 wherein the consumable ~~material is an~~ electrode ~~arranged~~ is configured to be mounted within an etch chamber.

7. The cam lock clamp of claim 1 wherein the stud, the socket, and the camshaft are each comprised of materials capable of withstanding a 230 °C environment.

8. The cam lock clamp of claim 1 wherein the socket has external threads.

9. A cam lock clamp, comprising:

a disc spring stack comprising a number of disc springs;

a stud having a body portion, a first end portion, and a second end portion, the first end portion comprising a head area having a first diameter larger than a cross-sectional dimension of the body portion, the second end portion having a second diameter larger than the cross-sectional dimension of the body portion and arranged to support ~~one or more~~the disc ~~springs~~ spring stack

concentrically about the stud, the stud configured to be non-rotatably affixed to a consumable electrode in a plasma etch system;

a socket arranged to mechanically couple concentrically around the stud and the supported one or more disc springs with the head area of the stud exposed above an uppermost portion of the socket, the socket configured to be firmly attached to ~~a backing plate~~the consumable electrode, the disc spring stack and the stud arranged to be in rigid contact with the socket at a base portion of the socket; and

a camshaft having a substantially cylindrical body with a diameter larger than the first diameter of the head area, the camshaft being configured to mount within a bore of a ~~consumable material~~backing plate and further comprising an eccentric cutout area located in a central portion of the cylindrical camshaft body, the camshaft being further configured to rotatably engage and lock the head area of the stud when the consumable ~~material~~ electrode and the backing plate are proximate to one another, a longitudinal axis of the stud being substantially normal to a longitudinal axis of the camshaft upon the rotatable engagement of the camshaft to the stud.

10. The cam lock clamp of claim 9 wherein the camshaft further comprises a first end and a second end, the first end having a keying pin configured to engage a slot in the ~~consumable material~~backing plate, the second end having an opening arranged to rotate the camshaft to fully engage the head area of the stud thereby clamping the ~~consumable material~~backing plate to the ~~backing plate~~consumable electrode.

11. The cam lock clamp of claim 9 further comprising a pair of camshaft bearings having an inside diameter and an outside diameter, the inside diameter sized such that the pair of camshaft bearings are mountable over opposite ends of the camshaft, the outside diameter sized to be larger than the diameter of the camshaft and smaller than the bore of the consumable electrode.

12. The cam lock clamp of claim 11 wherein the camshaft bearings are comprised of a substantially non-particle shedding material.

13. The cam lock clamp of claim 9 wherein the eccentric cutout area of the camshaft further comprises a cross-sectional area defined by a cutter path edge having a first and a second radius, the first radius arranged to tightly pull the head area of the stud toward the ~~consumable material~~backing plate as the camshaft is rotated and the second radius configured to lock the ~~stud~~ head area of the stud in proximity to the ~~consumable material~~backing plate as the camshaft is additionally rotated, the second radius further configured to provide an audible clicking noise to indicate when the stud is fully secured.

14. The cam lock clamp of claim 9 wherein the socket has external threads.

15. A cam lock clamp for use in a semiconductor ~~process~~ plasma etch tool, the cam lock clamp comprising:

a disc spring stack comprising a number of disc springs;

a stud having a substantially cylindrical body portion, a first end portion, and a second end portion, the first end portion comprising a head area having a first diameter larger than a diameter of the substantially cylindrical stud body portion, the second end portion having a second diameter larger than the diameter of the cylindrical stud body portion and arranged to support ~~a plurality of~~the disc ~~springs~~ spring stack concentrically about the stud, the stud configured to be non-rotatably affixed to a backing plate;

a socket arranged to mechanically couple concentrically around the stud and the supported ~~plurality of~~ disc ~~springs~~ spring stack with the head area of the stud exposed above an uppermost portion of the socket, the socket configured to be firmly attached to ~~an~~ a consumable electrode located within the semiconductor ~~process~~ plasma etch tool, the disc spring stack being arranged within the socket to limit lateral movement of the stud in a direction substantially normal to a longitudinal axis of the stud, the disc spring stack and the stud arranged to be in rigid contact with the socket at a base portion of the socket;

a camshaft having a substantially cylindrical body with a diameter larger than the first diameter of the head area, the camshaft configured to mount within a bore of ~~a backing plate~~the consumable electrode located with the semiconductor ~~process~~ plasma etch tool and further comprising an eccentric cutout area located in a central portion of the cylindrical camshaft body, the

camshaft being further configured to rotatably engage and lock the head area of the stud when the consumable electrode ~~material~~ and the backing plate are proximate to one another, the longitudinal axis of the stud being substantially normal to a longitudinal axis of the camshaft upon the rotatable engagement of the camshaft to the stud; and

a pair of camshaft bearings having an inside diameter and an outside diameter, the inside diameter sized such that the pair of camshaft bearings are mountable over opposite ends of the camshaft, the outside diameter sized to be larger than the diameter of the camshaft and smaller than the bore of the consumable electrode.

16. The cam lock clamp of claim 15 wherein the camshaft further comprises a first end and a second end, the first end having a keying pin configured to engage a slot machined into the backing plate, the second end having an opening arranged to rotate the camshaft to fully engage the head area of the stud thereby clamping the consumable electrode to the backing plate.

17. The cam lock clamp of claim 15 wherein the camshaft bearings are comprised of a substantially non-particle shedding material.

18. The cam lock clamp of claim 15 wherein the eccentric cutout area of the camshaft further comprises a cross-sectional area defined by a cutter path edge having a first and a second radius, the first radius arranged to tightly pull the head area of the stud toward the backing plate as the camshaft is rotated and the second radius configured to lock the ~~stud~~ head area of the stud in proximity to the backing plate as the camshaft is additionally rotated, the second radius further configured to provide an audible clicking noise to indicate when the stud is fully secured.

19. The cam lock clamp of claim 15 wherein the stud, the socket, the camshaft, and the camshaft bearings are each comprised of materials capable of withstanding a 230 °C environment.

20. The cam lock clamp of claim 15 wherein the socket has external threads.