Claims:

1. A tubular clamp system, comprising;

a boom structure; and

a clamp mechanism coupled to the boom structure and configured to move a tubular relative to the boom structure, wherein the clamp mechanism comprises:

a carriage assembly movably coupled along a length of the boom structure to raise or lower the tubular; and

a gripper assembly coupled to the carriage assembly, wherein the gripper assembly includes a pair of jaws movable into engagement with a tubular by a lead screw that is rotatable by a first actuator, and wherein the pair of jaws are configured to grip and lift the tubular by a thrust nut that is coupled to the lead screw and is rotatable by a second actuator.

2. The system of claim 1, wherein the first actuator is a low torque actuator.

3. The system of claim 2, wherein the second actuator is a torque thrust actuator having an arm coupled to the thrust nut by a wrench plate.

4. The system of claim 3, wherein the arm is extendable from the torque thrust actuator to rotate the wrench plate which rotates the thrust nut against the lead screw to force the pair of jaws to grip and lift the tubular.

5. The system of claim 4, wherein the gripper assembly is coupled to the carriage assembly by the torque thrust actuator and is raised off of the carriage assembly when the tubular is lifted.

6. The system of claim 5, wherein a clamp force applied to the tubular by the gripper assembly is proportional to the weight of the tubular.

7. The system of claim 6, wherein the gripper assembly is configured to automatically release the grip on the tubular when the tubular is pulled or pushed up through the gripper assembly.

8. The system of claim 7, wherein the clamp mechanism is movable along the boom structure to raise and lower the tubular gripped by the gripper assembly.

9. The system of claim 8, wherein the lead screw is disposed through the thrust nut.

10. The system of claim 9, wherein the torque thrust actuator applies a force to the wrench plate via the arm at a distance that is offset from a center axis of the lead screw.

11. A clamp mechanism for moving a tubular relative to a boom structure, comprising;

a carriage assembly movably coupled along a length of the boom structure to raise or lower the tubular; and

a gripper assembly coupled to the carriage assembly,

wherein the gripper assembly includes a pair of jaws movable into engagement with a tubular by a first actuator, and

wherein the pair of jaws are configured to grip and lift the tubular by a second actuator.

12. The mechanism of claim 11, wherein the pair of jaws are movable into engagement with the tubular by a lead screw that is rotatable by the first actuator.

13. The mechanism of claim 12, wherein the pair of jaws are configured to grip and lift the tubular by a thrust nut that is coupled to the lead screw and is rotatable by a second actuator.

14. The mechanism of claim 13, wherein the second actuator is a torque thrust actuator having an arm coupled to the thrust nut by a wrench plate.

15. The mechanism of claim 14, wherein the arm is extendable from the torque thrust actuator to rotate the wrench plate which rotates the thrust nut against the lead screw to force the pair of jaws to grip and lift the tubular.

16. The mechanism of claim 15, wherein the gripper assembly is coupled to the carriage assembly by the torque thrust actuator and is raised off of the carriage assembly when the tubular is lifted.

17. The mechanism of claim 16, wherein the lead screw is disposed through the thrust nut.

18. The mechanism of claim 17, wherein the torque thrust actuator applies a force to the wrench plate via the arm at a distance that is offset from a center axis of the lead screw.

19. The mechanism of claim 11, wherein a clamp force applied to the tubular by the gripper assembly is proportional to the weight of the tubular.

20. The mechanism of claim 11, wherein the gripper assembly is configured to automatically release the grip on the tubular when the tubular is pulled or pushed up through the gripper assembly.

21. A tubular clamp system, comprising;

a boom structure; and

a clamp mechanism coupled to the boom structure and configured to move a tubular relative to the boom structure, wherein the clamp mechanism comprises:

a carriage assembly movably coupled along a length of the boom structure to raise or lower the tubular;

a gripper assembly comprising a pair of jaws and coupled to the carriage assembly;

a first actuator configured to rotate a lead screw with respect to a thrust nut to move the pair of jaws into engagement with the tubular; and

a second actuator configured to rotate the thrust nut to grip and lift the tubular with the pair of jaws.