We claim:

1. An actuator comprising an actuator stem that is moveable between a first position and a second position, an actuator drive member coupled to said actuator stem to move said actuator stem between said first position and said second position, a biasing member that applies a first force on said actuator stem when said actuator stem is in said first position, said actuator drive member applies a second force on said actuator stem when said actuator stem is in said second position,

said actuator stem comprises a first portion and a second portion, and a coupling between said first portion and said second portion,

said coupling comprises a threaded connection,

said threaded connection comprising a controlled thread backlash.

2. The actuator of claim 1 wherein ~~said actuator stem comprises a first portion and a second portion, and a coupling between said first portion and said second portion,~~ said coupling transfers said first force from said biasing member to said first portion of said actuator stem when said actuator stem is in said first position.

3. The actuator of claim 2 wherein said coupling transfers said second force from said actuator drive member to said second portion of said actuator stem when said actuator stem is in said second position.

4. The actuator stem of claim 3 wherein said actuator drive member provides a direct drive to said second portion of said actuator stem when said actuator stem is in said second position.

5. The actuator of claim 1 wherein said actuator drive member comprises a handle that is rotatable about an axis.

6. The actuator of claim 1 in combination with a valve that is operated by movement of said actuator stem.

7. The actuator of claim 6 wherein said valve comprises a diaphragm valve.

8. The actuator of claim 6 comprising a pneumatic actuator that is operable to open and close said valve.

9. The actuator of claim 8 wherein said actuator drive member can be operated to override operation of said pneumatic actuator.

10. The actuator of claim 3 wherein said ~~coupling comprises a~~ threaded connection is between said biasing member and said first portion of said actuator stem~~, said threaded connection comprising a controlled thread backlash~~.

11. The actuator of claim ~~10~~ 1 wherein said controlled thread backlash causes an over-travel condition between said actuator drive member and said actuator stem ~~position~~.

~~12. The actuator of claim 1 wherein said biasing member causes an over-travel condition between said actuator drive member and said actuator stem position.~~

~~13. The actuator of claim 12 wherein said biasing member comprises a biasing member.~~

~~14~~12. The actuator of claim 1 wherein said ~~actuator stem comprises a first portion and a second portion, and a coupling between said first portion and said second portion, said coupling comprising a~~ threaded connection is between said biasing member and said first portion of said actuator stem~~, said threaded connection comprising a controlled thread backlash~~.

~~15~~13. The actuator of claim ~~14~~ 12 wherein said controlled thread backlash causes an over-travel condition between said actuator drive member ~~position~~ and said actuator stem ~~position~~.

~~16~~14. The actuator of claim ~~14~~ 12 in combination with a valve that is operated by movement of said actuator stem.

~~17~~15. An assembly of a valve and an actuator that can be connected so that the actuator controls operation of the valve, comprising:

a valve comprising a valve member having a valve open position and a valve closed position,

said actuator comprising an actuator stem that is moveable between an actuator stem first position that corresponds to said valve open position and an actuator stem second position that corresponds to said valve closed position, an actuator drive member coupled to said actuator stem to move said actuator stem between said actuator stem first position and said actuator stem second position, a biasing member that applies a first force on said actuator stem when said actuator stem is in said actuator stem first position, said actuator drive member applies a second force on said actuator stem when said actuator stem is in said actuator stem second position,

said actuator stem comprises a first portion and a second portion, and a coupling between said first portion and said second portion,

said coupling comprises a threaded connection,

said threaded connection comprising a controlled thread backlash.

~~18~~16. The assembly of claim ~~17~~ 15 wherein said actuator stem is moveable to a third position that is ~~provides~~ an over-travel from said valve closed position.

~~19~~17. The assembly of claim ~~18~~ 16 wherein said actuator stem is moveable to a fourth position that is ~~provides~~ an over-travel from said valve open position.

~~20. The assembly of claim 17 wherein said actuator stem comprises a first portion and a second portion, and a coupling between said first portion and said second portion, said coupling comprising a threaded connection between said biasing member and said first portion, said threaded connection comprising a controlled thread backlash.~~

~~21. The assembly of claim 17 wherein said biasing member causes an over-travel condition between said actuator drive member and said actuator stem position.~~

~~22~~18. The assembly of claim ~~21~~ 15 wherein said biasing member comprises a spring.

~~23~~19. The assembly of claim ~~17~~ 15 wherein said valve comprises a diaphragm valve.

~~24~~20. The assembly of claim ~~17~~ 15 wherein said actuator comprises a pneumatic actuator that is operable to move said valve member between said valve open position and said valve closed position.

~~25~~21. The assembly of claim ~~24~~ 20 wherein said actuator drive member is manually operable and can be used to override operation of said pneumatic actuator.

~~26~~22. The actuator of claim 2 wherein said second portion of said actuator stem is threadably coupled to an actuator housing ~~and said coupling provides a threaded connection between said first portion of said actuator stem and said second portion of said actuator stem~~.

~~27~~23. The actuator of claim ~~26~~ 22 wherein said second portion of said actuator stem is threadably coupled to ~~the~~ said actuator housing with a first thread orientation and said coupling comprises a thread orientation that is opposite said first thread orientation.

~~28~~24. The ~~actuator~~ assembly of claim ~~20~~ 15 wherein said second portion of said actuator stem is threadably coupled to an actuator housing ~~and said coupling provides a threaded connection between said first portion of said actuator stem and said second portion of said actuator stem~~.

~~29~~25. The ~~actuator~~ assembly of claim ~~28~~ 24 wherein said second portion of said actuator stem is threadably coupled to ~~the~~ said actuator housing with a first thread orientation and said coupling comprises a thread orientation that is opposite said first thread orientation.

~~30. An actuator and valve assembly comprising:~~

~~a valve comprising a valve member that can be moved in an axial direction,~~

~~an actuator comprising an actuator stem and an actuator drive member, said actuator drive member being manually operable with said actuator stem to move said valve member,~~

~~a dual drive coupling for said actuator drive member and said actuator stem that provides greater axial stroke of said actuator stem as compared with axial stroke of said actuator stem without said dual drive coupling.~~

~~31. The assembly of claim 30 wherein said dual drive coupling comprises a first threaded connection and a second threaded connection, said first threaded connection comprising a first thread orientation and said second threaded connection comprising a second thread orientation that is opposite said first thread orientation.~~

~~32~~26. An actuator comprising an actuator stem that is moveable between a first position and a second position, said actuator stem comprising a first portion and a second portion, an actuator drive member coupled to said actuator stem to move said actuator stem between said first position and said second position, a threaded ~~coupling~~ connection between said actuator stem first portion and said actuator stem second portion, said threaded ~~coupling~~ connection comprising a controlled thread backlash.

~~33~~27. The actuator of claim ~~32~~ 26 in combination with a flow control device having open and closed positions, wherein said controlled thread backlash provides axial over-travel for one or both of said ~~valve~~ flow control device open and closed positions.

28. The actuator of claim 1 comprising a controlled gap between engaging threads of said threaded connection.

29. The actuator of claim 28 wherein said engaging threads of said threaded connection comprise a root portion and a crest portion.

30. The actuator of claim 1 wherein said controlled thread backlash is effected by selection and control of diameter and pitch of said engaging threads.

31. The actuator of claim 26 comprising a controlled gap between engaging threads of said threaded connection.

32. The actuator of claim 31 wherein said engaging threads of said threaded connection comprise a root portion and a crest portion.

33. The actuator of claim 31 wherein said controlled thread backlash is effected by selection and control of diameter and pitch of said engaging threads.