CLAIMS

1. ~~An improved~~ A linear peristaltic pump for pumping a fluid through a flexible tube, comprising :

- a central member mounted for rotation about a central shaft;
- a plurality of planetary gears mounted by a plurality of planetary gear shafts to ~~said~~ the central member~~,~~ respectively;
- a ring gear ~~disposed~~ in a mesh engagement with each of ~~said~~ the plurality of planetary gears;
- a roller ~~disposed~~ located on each of ~~said~~ the planetary gears offset from ~~said~~ the planetary gear shafts~~,~~ respectively;
- a generally flat compression surface located relative to ~~said~~ the central axis for enabling the flexible tube to be inserted between ~~said~~ the generally flat compression surface and at least one of ~~said~~ the plurality of rollers; and
- a motor for effecting relative rotation between ~~said~~ the central member and ~~said~~ the ring gear for enabling ~~said~~ the plurality of rollers to serially collapse the flexible tube and to move in a substantially linear motion along ~~said~~ the generally flat compression surface for pumping the fluid through the flexible tube.

2. ~~An improved~~A linear peristaltic pump as set forth in claim 1, wherein ~~said~~ the ring gear is an outer ring gear ~~disposed~~ located outside of ~~said~~ the plurality of planetary gears.

3. ~~An improved~~A linear peristaltic pump as set forth in claim 1, wherein ~~said~~ the ring gear is an inner ring gear ~~disposed~~ located inside of ~~said~~ the plurality of planetary gears.

4. ~~An improved~~A linear peristaltic pump as set forth in claim 1, wherein ~~said~~ the plurality of planetary gears are radially mounted about a periphery of ~~said~~ the central member.

5. ~~An improved~~A linear peristaltic pump as set forth in claim 1, wherein each of ~~said~~ the rollers is an idler roller.

6. ~~An improved~~A linear peristaltic pump as set forth in claim 1, wherein ~~said~~ the motor rotates ~~said~~ the central member relative to ~~said~~ the ring gear.

7. ~~An improved~~A linear peristaltic pump as set forth in claim 1, including a motor drive connecting ~~said~~ the motor to ~~said~~ the central shaft for rotating ~~said~~ the central shaft; and

~~said~~ the central member mounted to ~~said~~ the central shaft for rotation in accordance with ~~said~~ the central shaft.

8. ~~An improved~~A linear peristaltic pump as set forth in claim 1, wherein ~~said~~ the ring gear is fixed relative to ~~said~~ the motor.

9. ~~An improved~~A linear peristaltic pump as set forth in claim 1, including a resilient member for accommodating minute non-linear motion of ~~said~~ the plurality of rollers along ~~said~~ the generally flat compression surface.

10. ~~An improved~~A linear peristaltic pump as set forth in claim 1, including a resilient member for accommodating minute non-linear motion of ~~said~~ the plurality of rollers along ~~said~~ the generally flat compression surface; and

~~said~~ the resilient member comprising a resilient spring for biasing ~~said~~ the generally flat compression surface toward ~~said~~ the central shaft.

11. ~~An improved~~A linear peristaltic pump as set forth in claim 1, including a resilient member for accommodating minute non-linear motion of ~~said~~ the plurality of rollers along ~~said~~ the generally flat compression surface; and

~~said~~ the resilient member comprising the flexible tube having a tube wall of sufficient thickness and sufficient resiliency accommodating for minute non-linear motion of ~~said~~ the plurality of rollers along ~~said~~ the generally flat compression surface.

12. ~~An improved~~A linear peristaltic pump as set forth in claim 1, including a pivot for pivotably mounting ~~said~~ the generally flat compression surface is pivotably mounted between an open position and a closed position;

~~said~~ the open position enabling insertion and removal of flexible tube between ~~said~~ the generally flat compression surface and at least one of ~~said~~ the plurality of rollers, and

~~said~~ the closed position effecting engagement between ~~said~~ the generally flat compression

surface and at ~~Least~~ least one of ~~said~~ the plurality of rollers.

13. ~~An improved~~A linear peristaltic pump for pumping a fluid through a flexible tube, comprising :
- a central member mounted for rotation about a central shaft;
a plurality of planetary gears mounted by a plurality of planetary gear shafts to ~~said~~ the central member~~,~~ respectively;
- an outer ring gear ~~disposed about and~~ in a mesh engagement with each of ~~said~~ the plurality of planetary gears;
- a roller ~~disposed~~ located on each of ~~said~~the planetary gears offset from ~~said~~ the planetary gear shafts~~,~~ respectively;
- a generally flat compression surface located relative to ~~said~~ the central axis for enabling the flexible tube to be inserted between ~~said~~ the generally flat compression surface and at least one of ~~said~~ the plurality of rollers; and
- a motor for effecting relative rotation between ~~said~~ the central member and ~~said~~ the outer ring gear for enabling ~~said~~ the plurality of rollers to serially collapse the flexible tube and to move in a substantially linear motion along ~~said~~ the generally flat compression surface for pumping the fluid through the flexible tube.

14. ~~An improved~~A linear peristaltic pump for pumping a fluid through a flexible tube, comprising :
- a central member mounted for rotation about a central shaft;
- a plurality of planetary gears mounted by a plurality of planetary gear shafts to ~~said~~ the central member~~,~~ respectively;
- an outer ring gear ~~disposed~~ in a mesh engagement with each of ~~said~~ the plurality of planetary gears;
- a roller mounted on each of ~~said~~ the planetary gears and offset from ~~said~~ the planetary gear shafts~~,~~ respectively;
- a generally flat compression surface located relative to ~~said~~ the central shaft for enabling the flexible tube to be inserted between ~~said~~ the generally flat compression surface and at least one of ~~said~~ the plurality of rollers;
- a motor for effecting relative rotation between ~~said~~ the central member and ~~said~~ the outer ring gear for enabling ~~said~~ the plurality of rollers to serially collapse the flexible tube against ~~said~~ the generally flat compression surface and to move in a substantially linear motion along ~~said~~ the

generally flat compression surface for pumping the fluid through the flexible tube; and

~~said~~ the flexible tube having a tube wall of sufficient thickness and sufficient resiliency for accommodating minute non-linear motion of said plurality of rollers along ~~said~~ the generally flat compression surface for compensating for nonlinear motion of ~~said~~ the plurality of rollers relative to ~~said~~ the generally flat compression surface.

15. A dispenser system for a liquid located in a container with a flexible tube extending between a first and a second end with the first end communicating with the container and with a check valve located at the second end of the flexible tube, comprising:

- a central member mounted for rotation about a central shaft;
- a plurality of planetary gears mounted on a plurality of planetary gear shafts to ~~said~~ the central member~~,~~ respectively;
- an outer ring gear ~~disposed about and~~ in a mesh engagement with each of ~~said~~ the plurality of planetary gears;
- a roller ~~disposed~~ located on each of ~~said~~ the planetary gears offset from ~~said~~ the planetary gear shafts~~,~~ respectively;
- a generally flat compression surface located relative to ~~said~~ the central axis for enabling the flexible tube to be inserted between said generally flat compression surface and at least one of ~~said~~ the plurality of rollers; and
- a motor for effecting relative rotation between ~~said~~ the central member and ~~said~~ the outer ring gear for enabling ~~said~~ the plurality of rollers to serially collapse the flexible tube and to move in a substantially linear motion along ~~said~~ the generally flat compression surface for pumping the fluid through the flexible tube.

16. ~~An improved~~A linear peristaltic pump for pumping a fluid through a flexible tube, comprising:

- a central member mounted for rotation about a central shaft;
- a plurality of planetary gears mounted by a plurality of planetary gear shafts to ~~said~~ the central member~~,~~ respectively;
- an inner ring gear ~~disposed within and~~ in a mesh engagement with each of ~~said~~ the plurality of planetary gears;
- a roller ~~disposed~~ located on each of ~~said~~ the planetary gears offset from said planetary gear shafts~~,~~ respectively;

- a generally flat compression surface located relative to ~~said~~ the central axis for enabling the flexible tube to be inserted between ~~said~~ the generally flat compression surface and at least one of ~~said~~ the plurality of rollers; and

- a motor for effecting relative rotation between ~~said~~ the central member and ~~said~~ the inner ring gear for enabling said plurality of rollers to serially collapse the flexible tube and to move in a substantially linear motion along ~~said~~ the generally flat compression surface for pumping the fluid through the flexible tube.