What is claimed is:

1. A motorized drum comprising:

   a drum shell;

   a motor disposed inside the drum shell, said motor having a motor rotor;

   a ~~cycloidal~~ speed reducer for producing at an output thereof a reduced rate of rotation relative to a rate of rotation of the motor rotor, wherein the output of the speed reducer is coupled to the drum shell to rotate the drum shell; and

   a hollow input shaft coaxially disposed with respect to the speed reducer to accommodate ~~that accommodates plural~~ miscellaneous components ~~therethrough~~through the speed reducer.

2. The motorized drum of claim 1, wherein the speed reducer is a cycloidal reducer and the hollow input shaft is provided with an integral eccentric raceway that engages an input gear of said cycloidal reducer, whereby the input gear is urged into eccentric motion within said cycloidal reducer as said hollow input shaft is rotated.

3. The motorized drum of claim 1, wherein the speed reducer is a cycloidal reducer and said cycloidal reducer is provided with an internal toothed ring gear that functions as the output of said cycloidal reducer, the internal toothed ring gear being rotationally affixed to the drum shell for transmitting rotary power thereto, whereby the drum shell and the internal toothed ring gear rotate at the same rate of rotation.

4. The motorized drum of claim 3, wherein there is further provided a fixed shaft, and said cycloidal reducer is provided with a guide pin housing, said guide pin housing constituting a fixed reference point, and there is further provided a torque coupler having orthogonally placed driving face pairs for coupling said guide pin housing to said fixed shaft.

5. The motorized drum of claim 4, wherein said torque coupler engages a keyless bushing that is affixed to said fixed shaft.

6. The motorized drum of claim 1, wherein said hollow input shaft is provided with plural axially protruding driven tabs for receiving an input torque from the motor rotor.

7. The motorized drum of claim 1, wherein there is further provided a coupler having orthogonally arranged driven face pairs for coupling said hollow input shaft to the motor rotor.

8. ~~A~~ The motorized drum of claim 1 ~~comprising~~

   ~~a drum shell;~~

   ~~a motor disposed inside the drum shell, said motor having a motor rotor;~~

   ~~a reducer output connected to said drum shell for delivering rotary power to the drum shell, said~~wherein the speed reducer ~~constituting an~~is a harmonic drive speed

reducer ~~having an~~and the input shaft ~~that~~ drives a wave generator, the wave generator being disposed against a flexible splined member, whereby the flexible splined member engages a rigid circular spline member at two radially opposed zones, the flexible spline member having n external teeth, and the circular spline member having at least n + 1 internal teeth.

9. The motorized drum of claim 8, wherein said circular spline member ~~being~~ is affixed to said drum shell, said circular spline member and said drum shell rotating at the same rate of rotation.
10. The motorized drum of claim ~~8, wherein the harmonic drive speed reducer has an input that is hollow through which other components may pass~~1, wherein the output of the speed reducer is coupled directly to the drum shell to rotate the drum shell at the reduced rate of rotation.
11. A speed reducer arrangement for use in a motorized drum of the type having a drum shell that experiences transaxial loading that is delivered to a central shaft, the speed reducer arrangement comprising:

    a cycloidal rotatory speed reducer having:

        an input gear having n external gear teeth;

        a plurality of guide pins;

        a cycloidal disk having apertures therethrough for accommodating respective ones of said plurality of guide pins; and

        an output gear having at least n+1 internal gear teeth for engaging the external gear teeth of said input gear in response to rotatory motion of said input gear;

    an input shaft arranged to surround the central shaft and to extend through said input gear, said input shaft having a substantially tubular configuration with an eccentric element on an exterior portion thereof for communicating with said input gear; and

    a coupler arrangement having a first portion joined to said input shaft and a second portion configured to receive a rotatory input, said coupler arrangement being adapted to accommodate transaxial displacement resulting from the transaxial loading of the central shaft.
12. The speed reducer arrangement of claim 11, wherein the second portion of said coupler arrangement comprises a protuberance that presents a driven face.
13. The speed reducer arrangement of claim 12, wherein there is further provided a speed coupler, for delivering a torque to the driven face.
14. The speed reducer arrangement of claim 13, wherein said speed coupler is coaxially disposed with respect to said input shaft.