CLAIMS

WHAT IS CLAIMED IS:

1. A dispensing apparatus for dispensing a multi-component composition, the apparatus comprising a plurality of compartments, each containing a respective component of a composition, an orifice communicating with the plurality of compartments, and a common electrical drive mechanism for simultaneously dispensing the respective components from the plurality of compartments through the orifice, wherein the electrical drive mechanism comprises a single motor, wherein each compartment includes a respective piston extruding a respective component of the composition from the apparatus, the pistons of the plurality of compartments being driven by a common gear mechanism coupled to the motor; and wherein the electrical drive mechanism includes a controller that controls a dose of each of the components in a single dispensing cycle.

~~2. The dispensing apparatus according to claim 1 wherein the electrical drive mechanism comprises a single motor.~~

~~3. The dispensing apparatus according to claim 1 or claim 2 wherein each compartment includes a respective piston for extruding a respective component of the composition from the apparatus, the pistons of the plurality of compartments being driven by a common gear mechanism coupled to the motor.~~

~~4. The dispensing apparatus according to claim 3 wherein the electrical drive mechanism includes a controller for controlling a dose of at least one of the components in a single dispensing cycle.~~

~~5~~2. The dispensing apparatus according to claim ~~3~~ 1 wherein the electrical drive mechanism includes a switch ~~for alternating~~ that alternates between dosed dispensing and continuous dispensing.

~~6~~3. The dispensing apparatus according to any one of claims 1 ~~to~~ and ~~5~~ 2 wherein the plurality of compartments are comprised in a detachable cartridge assembly which is removably attached to the electrical drive mechanism.

~~7~~4. The dispensing apparatus according to claim ~~6~~ 3 wherein the detachable cartridge assembly includes the orifice for the dispensed composition.

~~8~~5. The dispensing apparatus according to claim ~~7~~ 4 wherein the detachable cartridge assembly includes a head member comprising a plurality of chambers, each associated

with a respective compartment, and a plurality of outlet conduits, each extending from a respective chamber, the outlet conduits converging to form a common outlet.

~~9~~6. The dispensing apparatus according to claim ~~8~~ 5 wherein the outlet conduits are of ~~substantially~~ equal length.

~~10~~7. The dispensing apparatus according to claim ~~9~~ 6 wherein the plurality of chambers comprises two chambers in a side-by-side relationship with a centrally located outlet therebetween.

~~11~~8. The dispensing apparatus according to claim ~~10~~ 7 wherein the detachable cartridge assembly includes an outer surface of the dispensing apparatus.

~~12~~9. The dispensing apparatus according to any one of claims ~~6~~ 3 to ~~11~~ 8 further comprising a self-centering coupling between the electrical drive mechanism and the compartments ~~to mate together~~mating the electrical drive mechanism and the compartments together.

~~13~~10. The dispensing apparatus according to claim ~~12~~ 9 wherein the electrical drive mechanism includes a plurality of clutch members, each detachably mating with a respective drive element associated with a respective compartment.

~~14~~11. The dispensing apparatus according to claim ~~13~~ 10 wherein the clutch members and the drive elements each have a spiral flute construction.

~~15~~12. The dispensing apparatus according to any one of claims 1 and 2 to ~~14~~ 11 further comprising a housing enclosing the plurality of compartments and the electrical drive mechanism.

~~16~~13. The dispensing apparatus according to claim ~~15~~ 12 wherein the housing has an ~~substantially~~ oval cross-section.

~~17~~14. The dispensing apparatus according to claim ~~15~~ 12 or claim ~~16~~ 13 further comprising an actuator button on an upper surface of the housing.

~~18~~15. The dispensing apparatus according to claim ~~17~~ 14 wherein the actuator button comprises the entire upper surface of the housing.

~~19~~16. The dispensing apparatus according to claim ~~15~~ 12 or claim ~~16~~ 13 further comprising a nozzle on the housing ~~for dispensing the composition~~, and an actuator button on a side surface of the housing located beneath the nozzle.

~~20~~17. The dispensing apparatus according to any one of claims 1 and 2 to ~~19~~ 16 further comprising an indicator ~~for indicating~~that indicates an amount of at least one component of the composition remaining in a respective compartment of the apparatus.

~~21~~18. The dispensing apparatus according to claim ~~20~~ 17 wherein the indicator includes an illuminated display.

~~22~~19. The dispensing apparatus according to claim ~~20~~ 17 or claim ~~21~~ 18 wherein the indicator ~~is adapted to~~ responds to a sensed location of a part of the drive mechanism.

~~23~~20. The dispensing apparatus according to claim ~~20~~ 17 or claim ~~21~~ 18 wherein the indicator ~~is adapted to~~ responds to a pressure applied to a component of the composition.

~~24~~21. The dispensing apparatus according to claim ~~20~~ 17 or claim ~~21~~ 18 wherein the indicator ~~is adapted to~~ responds to a resistance force applied to the drive mechanism.

~~25~~22. The dispensing apparatus according to claim ~~20~~ 17 wherein the indicator includes a window ~~for~~ that provides viewing access into at least one compartment.

~~26~~23. The dispensing apparatus according to claim ~~25~~ 22 wherein the window ~~views~~ is located on a side of the at least one compartment.

~~27~~24. The dispensing apparatus according to claim ~~25~~ 22 wherein the window ~~views~~ is located on an exit end of the at least one compartment.

~~28~~25. The dispensing apparatus according to claim ~~20~~ 17 wherein the indicator comprises at least two different components of the composition which have a mutually different visual appearance and are sequentially disposed in a single compartment.

~~29~~26. The dispensing apparatus according to any one of claims 1 and 2 to ~~28~~ 25 wherein the orifice is self-closing ~~to~~ and prevents oozing or drool of the composition from the orifice when the drive mechanism is stopped after a dispensing cycle.

~~30~~27. The dispensing apparatus according to any one of claims 1 and 2 to ~~29~~ 26 wherein the drive mechanism ~~is adapted to~~ provides a forward drive during a dispensing cycle, and a reverse drive to lower any pressure acting on the composition within the compartments at the end of each dispensing cycle.

~~31~~28. The dispensing apparatus according to any one of claims 1 and 2 to ~~30~~ 27wherein the compartment includes a rigid container having a flexible portion ~~to accommodate~~accommodating excess pressure within the compartment on termination of the dispensing.

~~32~~29. The dispensing apparatus according to any one of claims 1 and 2 to ~~31~~ 28 wherein the composition is an oral care composition ~~which fills the plurality of compartments~~.

~~33~~30. The dispensing apparatus according to any one of claims 1 and 2 to ~~32~~ 29 wherein the plurality of compartments are respectively filled with a plurality of dentifrice components.

~~34~~31. The dispensing apparatus according to claim ~~33~~30, wherein the dentifrice components comprise toothpaste.