Claims:

1. A liquid container comprises: an over-cap detachable from a body, the over-cap detachably connects the body to a vessel and covers an entrance to the vessel; a portion of the body is adapted to be squeezed or displaced to dispense a liquid from a reservoir in the body through a passage through the body; characterised in that a portion of the over-cap for covering the entrance comprises a shutter for shutting the passage, the over-cap and a portion of the body which receives and attaches to the over-cap cooperate to hold the over-cap on the vessel so that the shutter unblocks the passage as the body is being detached from the vessel.

2. A liquid container according to claim 1 wherein the portion of the body that is adapted to be squeezed or displaced to dispense the liquid from the reservoir is a piston slide-able in the reservoir.

3. A liquid container according to claim 1 or 2 wherein the over-cap connects to a vessel cap which consists of pasteurise-able material and connects to the vessel.

4. A liquid container according to claim 1 or 2 wherein the over-cap is arranged to close the entrance.

5. A liquid container according to any preceding claim wherein the body comprises an assembly of the portion adapted to be squeezed or displaced and an article which partially encloses the reservoir.

6. A liquid container according to claim 5 dependent on claim 2 wherein the reservoir is enclosed by the piston when assembled with the article.

7. A liquid container according to claim 6 wherein the article there is an opening to receive the piston for assembly and to provide finger access to a head of the piston to operate the piston.

8. A liquid container according to claim 5, 6, or 7 wherein the over-cap is detachable from the article.

9. A liquid container according to any preceding claim wherein the over-cap comprises a first lock to form an interlock with a second lock on the vessel to hold the over-cap on the vessel.

10. A liquid container according to claim 9 wherein the body comprises a holding means to prevent the first lock form being freed of the interlock as the body is being detached from the vessel.

11. A liquid container according to any preceding claim wherein the portion of the body which receives and attaches to the over-cap is a socket

12. A liquid container according to claim 11 dependent on claim 5 wherein the socket is formed in the article.

13. A liquid container according to claim 11 or 12 wherein the body is mountable on the vessel over the entrance by the over-cap received in the socket.

14. A liquid container according to claim 11, 12 or 13 wherein the passage is from the reservoir into the socket.

15. A liquid container according to claim 11, 12, 13, or 14 wherein the body is formed a hollow interior, the body comprising a partition dividing a hollow interior to form the socket and the reservoir.

16. A liquid container according to claim 15 dependent on claim 2, 6 or 7 wherein the partition and piston have mating surfaces with matching contours for ejecting substantially all the liquid from the reservoir.

17. A liquid container according to claim 15 or 16 wherein the passage is through the partition.

18. A liquid container according to any preceding claim wherein the passage is a nozzle.

19. A liquid container according to any preceding claim dependent on claim 11 wherein the socket is the portion of the body which receives and attaches to the over-cap and cooperates with the over-cap to hold the over-cap on the vessel.

20. A liquid container according to claim 19 wherein the over-cap and the socket cooperate to hold the over-cap on the vessel where the over-cap is in the socket at a position where the over-cap is stopped by a stop in the socket to a preselected distance into the socket from the stop.

21. A liquid container according to claim 20 dependent on claim 10 wherein the holding means engages the first lock to interlock the first lock with the second lock.

22. A liquid container according to claim 21 wherein the first lock is unlocked from the second lock by disengagement of the first lock from the holding means to free the over-cap for detachment from the vessel.

23. A liquid container according to claim 21 or 22 wherein the shutter is arranged with respect to the holding means to shut the passage where in the socket the holding means engages the first lock with the second lock.

24. A liquid container according to claim 23 wherein the shutter is arranged with respect to the holding means to unshut the passage where the holding means is disengaged from the first lock.

25. A liquid storage and dispensing system comprising the liquid container according any preceding claim and the vessel.

26. A liquid storage and dispensing system according to claim 25 wherein the liquid container contains a first liquid in the reservoir and the vessel contains a second liquid.