CLAIMS

What is claimed is:

1. An apparatus comprising:

a body that is configured for complementary engagement with a pipetting head of a liquid handling system such that movement of the pipetting head effects a corresponding movement of the apparatus;

a base that is coupled to the body, the base comprising at least one engagement feature that is configured to mechanically engage a surface of a labware item to releasably couple the lab ware item to the apparatus.

2. The apparatus of claim 1, wherein the body and the base are integrally formed as a monolithic structure.

3. The apparatus of claim 1, wherein the base is secured to the body by at least one fastener.

4. The apparatus of claim 1, wherein the at least one engagement feature comprises a plurality of engagement features.

5. The apparatus of claim 4, wherein the plurality of engagement features are spaced along a transverse axis that is perpendicular to a vertical axis.

6. The apparatus of claim 5, wherein the plurality of engagement features comprise first and second plungers that are respectively biased to extend outwardly relative to first and second engagement axes that are perpendicular to the transverse axis.

7. The apparatus of claim 5, wherein the plurality of engagement features comprise first and second posts.

8. The apparatus of claim 5, wherein the plurality of engagement features comprise first and second latch elements.

~~9. The apparatus of claim 6, wherein the first and second plungers are respectively spring-loaded to extend outwardly along the first and second engagement axes.~~

~~10~~9. The apparatus of claim 5, wherein the base comprises first and second legs that receive respective portions of the first and second plungers.

~~11~~10. The apparatus of claim ~~10~~9, wherein the base further comprises at least one projection.

~~12. The apparatus of claim 11, wherein the at least one projection comprises first and second projections, wherein the first projection is spaced from and aligned with the first leg relative~~

~~to the first engagement axis, and wherein the second projection is spaced from and aligned with the second leg relative to the second engagement axis.~~

~~13. The apparatus of claim 11, wherein the at least one projection is not intersected by the first or second engagement axes.~~

~~14~~11. The apparatus of claim 1, wherein the body defines a plurality of openings that are configured to receive a portion of a corresponding pipette structure of the pipetting head.

~~15. The apparatus of claim 14, wherein the plurality of openings comprises a plurality of rows of multiple openings, wherein the openings of each row of the plurality of rows are spaced apart relative to a transverse axis that is perpendicular to a vertical axis.~~

~~16. The apparatus of claim 1, wherein the apparatus does not comprise a power source.~~

~~17. The apparatus of claim 1, wherein the apparatus does not comprise an actuator.~~

~~18~~12. A system comprising:

the apparatus of ~~any one of~~ claim~~s~~ 1~~–17~~; and

a labware item having at least one engagement feature that is complementary to and configured to releasably mechanically engage a corresponding engagement feature of the at least one engagement feature of the apparatus.

~~19~~13. The system of claim ~~18~~12, wherein the at least one engagement feature of the labware item comprises a plurality of engagement features spaced relative to a transverse axis that is perpendicular to a vertical axis.

~~20~~14. The system of claim ~~18~~12, wherein the at least one engagement feature of the labware item comprises at least one recess defined in a surface of the labware item.

~~21. The system of claim 20, wherein the at least one engagement feature of the apparatus comprises at least one plunger, each plunger having a head, the head of each plunger having a shape that is complementary to a shape of a corresponding recess of the at least one recess of the labware item.~~

~~22. The system of claim 20, wherein the at least one engagement feature of the apparatus comprises at least one post, and wherein each recess of the at least one recess comprises a slot that is configured to receive a portion of a corresponding post.~~

~~23~~15. The system of claim ~~18~~12, wherein the at least one engagement feature of the apparatus comprises at least one latch element, and wherein the at least one engagement feature of the

labware item comprises a surface that is configured to contact a corresponding latch element of the at least one latch element.

~~24~~16. The system of claim ~~18~~12, wherein the labware item has at least one release feature that is configured to releasably engage a corresponding engagement feature of the at least one engagement feature of the apparatus in response to translation of the apparatus relative to the labware item.

~~25~~17. The system of claim ~~24~~16, wherein the at least one release feature of the labware item comprises at least one groove defined within a surface of the labware item, wherein each groove of the at least one groove is spaced from a respective engagement feature of the at least one engagement feature of the labware item.

~~26. The system of claim 25, wherein each groove of the at least one groove has a variable width that increases moving in a direction such that a force of engagement between the at least one groove and the at least one engagement feature of the apparatus decreases as the apparatus is translated at least partially in the direction relative to the labware item.~~

~~27~~18. The system of claim ~~18~~12, wherein the labware item has opposing first and second outer surfaces, wherein the at least one engagement feature of the labware item comprises at least one first engagement feature positioned along the first outer surface and at least one second engagement feature positioned along the second outer surface.

~~28. The system of claim 27, wherein each first engagement feature of the at least one first engagement feature is in alignment with a corresponding second engagement feature of the at least one second engagement feature relative to a respective engagement axis.~~

~~29. The system of claim 28, wherein the at least one first engagement feature comprises a plurality of first engagement features, and wherein the at least one second engagement feature comprises a plurality of second engagement features.~~

~~30. The system of claim 28, wherein each engagement feature of the at least one engagement feature of the apparatus is configured to engage a respective first engagement feature of the labware item.~~

~~31. The system of claim 30, wherein the base of the apparatus comprises at least one leg, wherein each leg receives a portion of a respective engagement feature of the apparatus.~~

~~32. The system of claim 31, wherein the base further comprises at least one projection, wherein each projection is spaced from and aligned with a respective leg of the apparatus relative to a respective engagement axis.~~

~~33. The system of claim 32, wherein the at least one projection is not intersected by an engagement axis.~~

~~34. The system of claim 32, wherein each projection of the at least one projection defines an engagement surface that is configured to engage a respective second engagement feature of the labware item.~~

~~35. The system of claim 34, wherein the labware item has a width relative to each respective engagement axis, and wherein at each respective engagement axis, the width of the lab ware item is less than a spacing between the projection and the leg of the apparatus that are aligned with the respective engagement axis, thereby permitting receipt of the labware item between the projection and the leg of the apparatus.~~

~~36. The system of claim 18, wherein the labware item is an in-channel filter device.~~

~~37. The system of claim 18, wherein the labware item is an electrode device.~~

~~38. The system of claim 18, further comprising a pipetting head, wherein the body of the apparatus is configured for complementary engagement with the pipetting head such that movement of the pipetting head effects a corresponding movement of the apparatus.~~

~~39~~19. A method comprising:

using a pipetting head of a liquid handling system to engage an apparatus of ~~any one of~~ claim~~s~~ 1~~–17~~;

using the pipetting head to position the apparatus relative to a labware item having at least one engagement feature that is complementary to a corresponding engagement feature of the at least one engagement feature of the apparatus, wherein the apparatus is positioned relative to the labware item such that at least one engagement feature of the apparatus releasably engages a corresponding engagement feature of the at least one engagement feature of the labware item; and

with the apparatus releasably engaging the labware item, using the pipetting head to selectively move the apparatus and the labware item.

~~40~~20. The method of claim ~~39~~19, wherein the pipetting head translates relative to a translation axis to engage the apparatus, and wherein the at least one engagement feature of the labware item comprises a plurality of engagement features spaced relative to a transverse axis that is perpendicular to the translation axis.

~~41~~21. The method of claim ~~39~~19, wherein the at least one engagement feature of the labware item comprises at least one recess defined in a surface of the labware item.

~~42~~22. The method of claim ~~41~~21, wherein the at least one engagement feature of the apparatus comprises at least one plunger, each plunger having a head, the head of each plunger having a shape that is complementary to a shape of a corresponding recess of the at least one recess of the labware item.

~~43~~23. The method of claim ~~41~~21, wherein the at least one engagement feature of the apparatus comprises at least one post, and wherein each recess of the at least one recess comprises a slot that receives a portion of a corresponding post.

~~44~~24. The system of claim ~~39~~19, wherein the at least one engagement feature of the apparatus comprises at least one latch element, and wherein the at least one engagement feature of the labware item comprises a surface that contacts a corresponding latch element of the at least one latch element.

~~45~~25. The method of claim ~~39~~19, further comprising:

using the pipetting head to position the labware item within a receptacle that restricts movement of the labware item; and

using the pipetting head to translate the apparatus relative to the labware item, wherein the labware item has at least one release feature that releasably engages a corresponding engagement feature of the at least one engagement feature of the apparatus in response to translation of the apparatus relative to the labware item.

~~46~~26. The method of claim ~~45~~25, wherein the at least one release feature of the labware item comprises at least one groove defined within a surface of the labware item, wherein each groove of the at least one groove is spaced from a respective engagement feature of the at least one engagement feature of the labware item.

~~47. The method of claim 46, further comprising:~~

using the pipetting head to translate the apparatus in a direction relative to the labware item until the apparatus disengages the labware item, wherein each groove of the at least one groove has a variable width that increases moving at least partially in the direction such that a force of engagement between the at least one groove and the at least one engagement feature of the apparatus decreases as the apparatus is translated at least partially in the direction relative to the labware item.

48. The method of claim 47, further comprising:

using the pipetting head to translate the apparatus to apply a force to the labware item to ensure that the labware item is fully received within the receptacle.

4927. The method of claim 3919, wherein the labware item has opposing first and second outer surfaces, wherein the at least one engagement feature of the labware item comprises at least one first engagement feature positioned along the first outer surface and at least one second engagement feature positioned along the second outer surface.

50. The method of claim 49, wherein each first engagement feature of the at least one first engagement feature is in alignment with a corresponding second engagement feature of the at least one second engagement feature relative to a respective engagement axis.

51. The method of claim 50, wherein the at least one first engagement feature comprises a plurality of first engagement features, and wherein the at least one second engagement features comprises a plurality of second engagement features.

52. The method of claim 50, wherein each engagement feature of the at least one engagement feature of the apparatus engages a respective first engagement feature of the labware item.

53. The method of claim 52, wherein the base of the apparatus comprises at least one leg, wherein each leg receives a portion of a respective engagement feature of the apparatus.

54. The method of claim 53, wherein the base further comprises at least one projection.

55. The method of claim 54, wherein the at least one projection comprises first and second projections, wherein each projection is spaced from and aligned with a respective leg of the apparatus relative to a respective engagement axis.

56. The method of claim 54, wherein the at least one projection is not intersected by an engagement axis.

~~57. The method of claim 54, wherein each projection of the at least one projection defines an engagement surface that engages a respective second engagement feature of the labware item.~~

~~58. The method of claim 57, wherein the labware item has a width relative to each respective engagement axis, wherein at each respective engagement axis, the width of the lab ware item is less than a spacing between the projection and the leg of the apparatus that are aligned with the respective engagement axis, and wherein the labware item is received between the projection and the leg of the apparatus.~~

~~59~~28. The method of claim ~~39~~19, wherein the labware item is an in-channel filter device.

~~60. The method of claim 39, wherein the labware item is an electrode device.~~