previous inventions, including U.S. Pub. No. 2005/0163651 to Vellutato, and U.S. Patent No. 7,066,354 to Stank.

SUMMARY OF THE INVENTION

[0007] Accordingly, ~~it is an object~~embodiments of the invention seek to provide a mixing and dispensing apparatus. ~~It is another object~~Embodiments of the invention seek to provide a mixing and dispensing apparatus which is easy to use in a clean room by a user that is fully gowned and gloved. ~~It is a further object~~Embodiments of the invention seek to provide a mixing and dispensing apparatus which is suitable for use in a clean room.

[0008] According to an embodiment, there is provided ~~A~~a mixing and dispensing apparatus having first and second containers. The first container has a main body portion which retains a first substance. A separate compartment is located in the first container and an internal passageway is formed between the main body portion and the compartment. The second container is configured to retain a second substance, and is compressible. The second container has a top end and a closed spout, wherein the closed spout is located in the compartment with the spout extending through the internal passageway into the main body portion of said first container. A release mechanism is formed by a plunger extending within the second container. The plunger has a first end in communication with the top end of the second container, and a second end aligned with the closed spout. The second end opens the closed spout when the second container is compressed to release the second substance into the main body portion of the first container.

[0008a] According to a first aspect, there is provided a mixing and dispensing apparatus comprising: a first container having a main body portion retaining a first substance; a second container configured to retain a second substance, said second container having a closed spout extending through an internal passageway, the closed spout in fluid communication with the main body portion of said first container; and a plunger aligned with the closed spout,

whereby the plunger opens the closed spout when compressed to release the second substance into the main body portion of said first container.

[0008b] According to a second aspect, there is provided a mixing and dispensing apparatus comprising: a first container having a main body portion retaining a first substance and a compartment with an internal passageway between the main body portion and the compartment; a second container configured to retain a second substance, said second container having a top end and a closed spout, wherein the closed spout is located in said compartment with the spout extending through the internal passageway into the main body portion of said first container; and, a plunger extending within said second container and having a first end and a second end, said second end aligned with the closed spout, whereby the second end opens the closed spout when compressed to release the second substance into the main body portion of said first container.

[0008c] According to a third aspect, there is provided a method of mixing and dispensing a sterilized composition within a cleanroom, comprising the steps of: providing an apparatus comprising: a first container having a main body portion, a dispensing mechanism; a second container having a main body portion and a closed spout in fluid communication with said main body portion of said first container, and a plunger; filling the main body portion of the first container with a first liquid; filling the main body portion of the second container with a second liquid; placing the plunger in the main body portion of the second container and aligning the plunger with the closed spout; applying downward pressure to the plunger, such that the plunger opens the closed spout to release the second fluid into the main body portion of the first container, whereby the first and second fluids mix to form a sterilized composition; and actuating the dispensing mechanism, such that the sterilized composition is expelled from the first container through the dispensing mechanism into the cleanroom.

[0009] These and other objects of the invention, as well as many of the intended advantages thereof, will become more readily apparent when reference is made to the following description, taken in conjunction with the accompanying drawings.

CLAIMS:

1. A mixing and dispensing apparatus comprising:

a first container having a main body portion retaining a first substance ~~and a compartment with an internal passageway between the main body portion and the compartment~~;

a second container configured to retain a second substance, said second container ~~being compressible and~~ having ~~a top end and~~ a closed spout~~, wherein the closed spout is located in said compartment with the spout~~ extending through ~~the~~ an internal passageway, the closed spout in fluid communication with ~~into~~ the main body portion of said first container; and~~,~~

a plunger ~~extending within said second container and having a first end in communication with the top end of said second container, and a second end~~ aligned with the closed spout, whereby the ~~second end~~ plunger opens the closed spout when ~~said second container is~~ compressed to release the second substance into the main body portion of said first container.

2. The apparatus of claim 1, wherein said apparatus is configured for use in a clean room.

3. The apparatus of claim 1 or 2, further comprising a foil positioned over the spout to close the spout.

4. The apparatus of claim 3, wherein the plunger pierces the foil to create an opening in the foil when the ~~second container~~ plunger is compressed.

5. The apparatus of any of the preceding claim~~s 1~~, further comprising a flexible barrier positioned ~~in said compartment~~ about said second container.

6. The apparatus of any of the preceding claim~~s 1~~, further comprising:

an opening at ~~the~~ a top end of said second container;

a cover for closing said opening, said cover having a central bore;

a head located at ~~the~~ a first end of said plunger and received in the central bore of said cover; and

a retainer positioned about said head for retaining the plunger in the central bore of said cover.

7. The apparatus of claim 6, further comprising prongs at ~~the~~ a second end of said plunger, said prongs piercing the closed spout.

8. The apparatus of any of the preceding claims ~~1~~, wherein said spout is offset on ~~the~~ a main body portion of said second container.

9. The apparatus of any of the preceding claims ~~1~~, wherein said second container has a neck configured to be received in the passageway.

10. The apparatus of claim 9, further comprising a wide lip extending outward from said neck.

11. The apparatus of claim 10, wherein said passageway has a wide portion and a narrow portion, wherein the narrow portion is narrower than the wide lip, and wherein the ~~spout~~ neck and lip are received in the wide portion and moved into the narrow portion such that the wide lip is on a far side of the passageway.

~~12. The apparatus of claim 1, wherein said compartment is separate and apart from said main body portion, and further comprising a neck connecting said compartment to said main body portion.~~

~~13. The apparatus of claim 12, wherein said compartment is substantially parallel with said main body portion.~~

~~14~~ 12. The apparatus of any of the preceding claims ~~1~~, wherein said main body portion ~~substantially~~ comprises a spray bottle.

13. The apparatus of any of the preceding claims, further comprising a compartment for housing said second container.

14. The apparatus of claim 13, wherein said compartment is separate and apart from said main body portion, and further comprising a neck connecting said compartment to said main body portion.

15. The apparatus of claim 13 or 14, wherein said compartment is parallel with said main body portion.

16. A mixing and dispensing apparatus comprising:

a first container having a main body portion retaining a first substance and a compartment with an internal passageway between the main body portion and the compartment;

a second container configured to retain a second substance, said second container having a top end and a closed spout, wherein the closed spout is located in said compartment with the spout extending through the internal passageway into the main body portion of said first container; and,

a plunger extending within said second container and having a first end and a second end, said second end aligned with the closed spout, whereby the second end opens the closed spout when compressed to release the second substance into the main body portion of said first container.

17. A method of mixing and dispensing a sterilized composition within a cleanroom, comprising the steps of:

providing an apparatus comprising:

a first container having a main body portion,

a dispensing mechanism;

a second container having a main body portion and a closed spout in fluid communication with said main body portion of said first container, and

a plunger;

filling the main body portion of the first container with a first liquid;

filling the main body portion of the second container with a second liquid;

placing the plunger in the main body portion of the second container and aligning the plunger with the closed spout;

applying downward pressure to the plunger, such that the plunger opens the closed spout to release the second fluid into the main body portion of the first container, whereby the first and second fluids mix to form a sterilized composition; and

actuating the dispensing mechanism, such that the sterilized composition is expelled from the first container through the dispensing mechanism into the cleanroom.

18. The method of claim 17, wherein the dispensing mechanism is a spray head having a trigger and an adjustable nozzle through which the sterilized composition is expelled.

19 The method of claim 17 or 18, wherein the apparatus further comprises a dip tube extending from the dispensing mechanism into the main body portion of the first container, such that the sterilized composition is drawn into the dip tube when the dispensing mechanism is actuated.