multiple row embodiment, one row of outlets 18 would be directed downwardly toward a first side of the bag 12 and a second row of outlets 18 outlet is directed downwardly and toward the second side of the bag. Another embodiment would have a third row of outlets 18 directed directly down into the bag 12.

The conduit 16 either directly or through a sterile connector described above is connected to a source of wash liquid such as sterile water, a sterile buffer solution such as phosphate buffer and the like or whatever other liquid, such as a solvent, is used with the powder.

Figures 6-9 shows a feed bag with a second embodiment of the second conduit 11 of the present invention.

Referring to Figures 6 and 7, the second conduit 11 comprises a connector 20 secured to inlet conduit 16 which, in turn is connected to connecting conduits 13 and 15 with barb connectors 31, 33 and 35. Of course other connectors can be used in lieu of the hose barbs such as threaded connections, such as male/female threaded hose connections (not shown}, speed connections (not shown) that use various ball bearing and sliding locking mechanisms to hold the male and female connectors together, overmolded hose and T connectors (not shown) such as are available from Saint Gobain Performance Plastics of Worcester, Massachusetts and the like. The port sprayer 9 preferably includes a tapered wall 37 which tapers toward exit port 39. The use of the tapered wall 37 permits wash liquid to exit port sprayer 9 under high enough pressure so that the wash liquid contacts the top interior surface 18 of the bag 12. The construction shown in Figure 7 permits complete removal of reagent from the bag 12. It is to be understood that other wall designs such as a straight wall can be utilized. The sprayer 9 may have one opening or more than one opening as desired to provide the desired spray effect. Alternatively, the sprayer may have a spray ball design if desired.

Referring to Figure 6, the second conduit construction 11 is shown in an I shape with connecting conduits 13, 15 and a plurality of port sprayers 9 ~~is shown~~.

Referring to Figure 8, an alternative second conduit construction 1la is shown in an X shape with connecting conduits 13, 15 and a plurality of port sprayers 9 ~~is shown~~.

Referring to Figure 9 an alternative second conduit construction is shown in an H shape with connecting conduits 13,15 and a plurality of port sprayers 9.

A cap 22 is provided which fits over conduit 14 thereby to prevent leakage through the conduit 14. The cap 22 fits over the lever 26. Referring to Figure 5, the cap 22 has threads 28, which permit screwing the cap 22 onto the conduit 14. A valve ~~Valve~~ 17 is shown mounted on a shaft 24. The lever ~~Lever~~ 26 is connected to the shaft 24 and is nested within the cap 22. An O ring 28 mounted in the cap 22 seals the end of conduit 14 to the cap 22. O rings 30 and 32 seal the shaft 24 to the valve 17. An O ring 34 seals the valve 17 to the conduit 14. The cap 22 is provided with one or more raised sections 21. The raised sections 21 prevent activation of the valve 17 when the cap is in position on the conduit 14. The one piece cap encloses the end of the conduit 14, the valve 17 and the lever 26 and can be removed from or attached to the conduit 14 by one person. The O ring 28 can be molded to the end of conduit 14, the inside surface of the cap 28 or can be a separate piece. The end of the conduit 14 can be provided with an optional groove 23, which is adapted to house an additional gasket.

CLAIMS

What is claimed:

1. A feed bag construction comprising:

a feed bag having a first end and a second end,

a first conduit sealed to the first end of the feed bag,

a second conduit located at the second end of the bag opposite the first end of the bag for introducing wash liquid into the bag to remove, by rinsing, residual reagent from the bag through the first conduit, the second conduit being sealed to the interior of the feed bag and extending across at least a portion of the bag width, the second conduit having a connector positioned outside the feed bag on one side of the conduit and a seal at another end of the conduit, the second conduit having multiple outlets spaced along its length,

a valve positioned within the first conduit,

means positioned outside said first conduit for opening or closing the valve, the valve being mounted on a shaft and connected to the means for opening and closing the valve, the shaft being used to effect rotation of the valve about the shaft to open and close the first conduit, and

a cap removably mounted on the first conduit and over the means for operating the valve, the cap being one piece and enclosing a flange at the end of the first conduit to prevent the valve from activating and to provide a seal for first conduit.

~~2. The construction of claim 1 wherein the second conduit has a plurality of outlets.~~

~~3~~2. The feed bag construction of Claim 1 wherein the means for operating the valve comprises a lever.

~~4. The construction of claim 1 further comprising a cap covering the first conduit portion that extends beyond the feed bag.~~

~~5. The construction of claim 1 wherein the first conduit is located at a first end of the feed bag and the second conduit is located at a~~

~~second end of the feed bag opposite the first end.~~

~~6. A feed bag construction comprising a bag sized to store a desired amount of reagent, a first conduit formed at a first end of the bag, a valve positioned within the first conduit for controlling passage of reagent through the conduit and a second conduit located at a second end of the bag opposite the first end of the bag for introducing wash liquid into the bag to remove, by rinsing, residual reagent from the bag through the first conduit, the second conduit extending substantially across the length of the second end of the bag, the second conduit having a connector positioned outside the feed bag on one side of the conduit and a seal adjacent another side of the conduit, the second conduit having multiple outlets spaced along its length.~~

~~7~~3. The feed bag construction of claim ~~6~~1 wherein the bag and first conduit are joined together by a means selected from the group consisting of heat sealing and a clamp.

~~8. The bag of claim 6 further comprising a cap provided over the first conduit for retaining reagent within the bag, the cap being one piece and enclosing a flange at the end of the first conduit to prevent the valve from activating and to provide a seal for first conduit.~~

~~9. The bag of claim 6 wherein the valve is activated by a lever attached to the valve of the first conduit.~~

~~10~~4. The feed bag construction of claim ~~6~~1 wherein the valve is a butterfly valve positioned within the first conduit and sized to open or close the first conduit.

~~11. The bag of claim 6 wherein the valve is a butterfly valve positioned within the first conduit and sized to open or close the first conduit, the valve is mounted on a shaft and is connected to a lever attached to the shaft.~~

~~12~~5. The feed bag construction of claim ~~6~~1 wherein the valve is activated by a lever attached to the valve of the first conduit and the lever is capable of being pivoted to extend away from the conduit to operate.

~~13. The bag of claim 6 wherein the valve is mounted on a shaft and is connected to a lever attached to the shaft and the lever is used to effect rotation of the valve about the shaft to open and close the first conduit.~~

~~14~~6. The feed bag construction of claim ~~6~~1 wherein the means to open and close the valve is ~~mounted on a shaft and is connected to~~ a knob attached to the shaft and the knob is used to effect rotation of the valve about the shaft to open and close the first conduit

~~15~~7. The feed bag construction of claim 1 wherein the second conduit has one or more port sprayers.

8. The feed bag construction of claim 1 wherein the bag has a first lateral side wall, the first lateral side wall extending vertically between the first conduit on the first end of the bag to the second end of the bag and a second lateral side wall opposite the first lateral side wall, the second lateral side wall having a tapered portion extending outwardly at an angle from the first conduit and a second portion extending vertically between an end of the first portion farthest from the first conduit and the second end of the bag.

~~16. The construction of claim 1 wherein the second conduit has one or more port sprayers wherein the port sprayer(s) have a tapered wall which tapers toward an exit port.~~

~~17. The bag of claim 6 wherein the second conduit has one or more port sprayers.~~

~~18. The bag of claim 6 wherein the second conduit has one or more~~

~~port sprayers wherein the port sprayer(s) have a tapered wall which tapers toward an exit port.~~