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(54) Title: CONTAMINATION–SAFE MULTI–DOSE DISPENSING AND DELIVERY SYSTEM FOR FLOWABLE MATERIALS

(57) Abstract

A valve for dispensing the fluid contents of a container such that external contaminants such as dust, air or microbes cannot enter the container even after repeated dispensing cycles. The valve comprises a plug–type valve and an elastomeric sheath type valve such as a flapper valve, slit valve, or duck bill valve. All are one–way devices. The plug is provided with a means for resetting it to the closed position at the end of each delivery cycle such that the plug is a one–way device also. The means can be an elastomeric tether, gravity, or the deformation of a valve part. The plug can be provided with channels or other cut or shaped features, e.g. grooves, to facilitate fluid flow. The container used with this invention must be volumetrically reducible and thereby maintain its own internal pressure at the end of a delivery cycle. Alternatively, the valve of the present invention can be made without the outlet valve, i.e., the flapper, slit, or duck bill valve. In this case, the plug is the only one–way valve, mechanism.