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(54) **SLEEVE FOR LOADING A DISPENSING
DEVICE WITH BULK VISCOUS MATERIAL**

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(57) **ABSTRACT**

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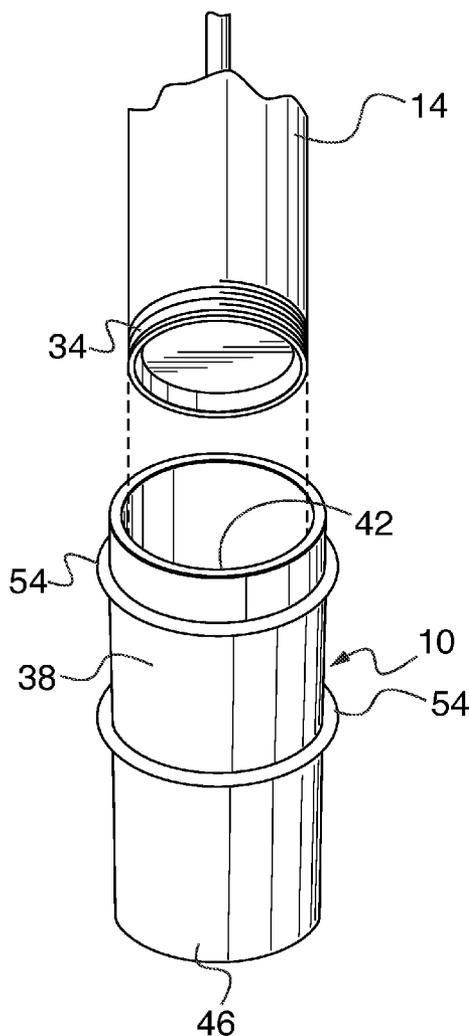
Related U.S. Application Data

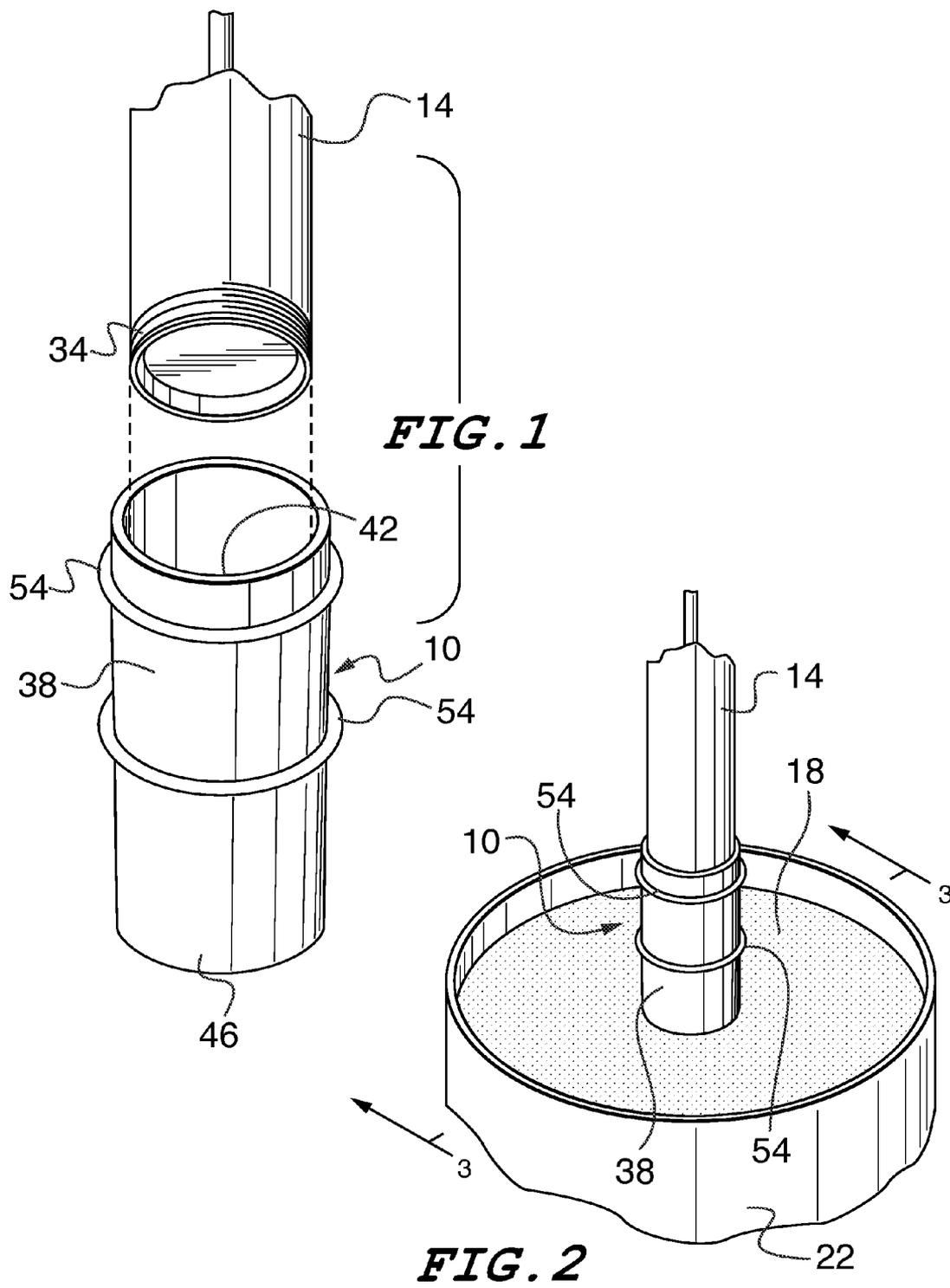
(60) Provisional application No. 61/723,521, filed on Nov.
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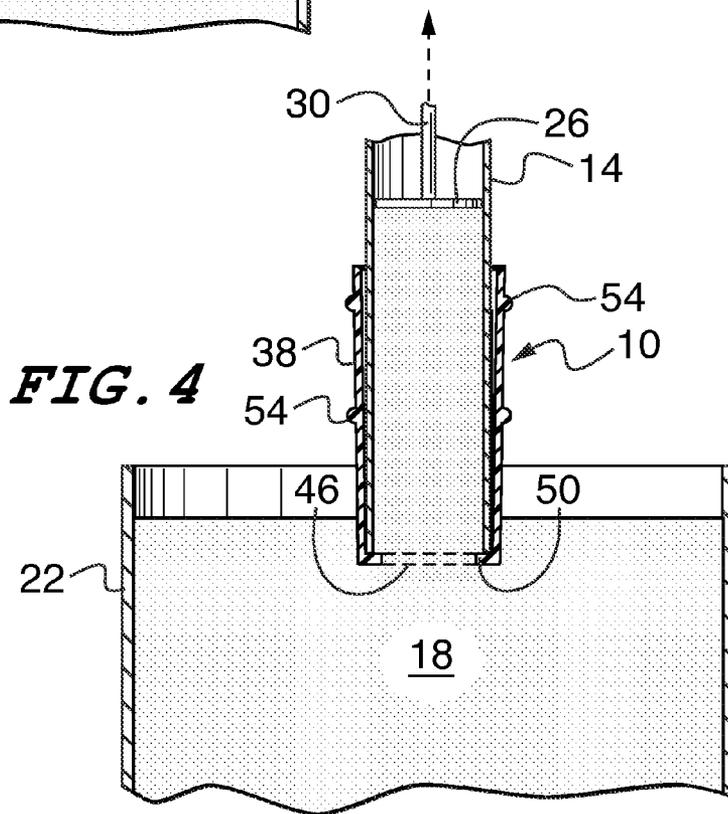
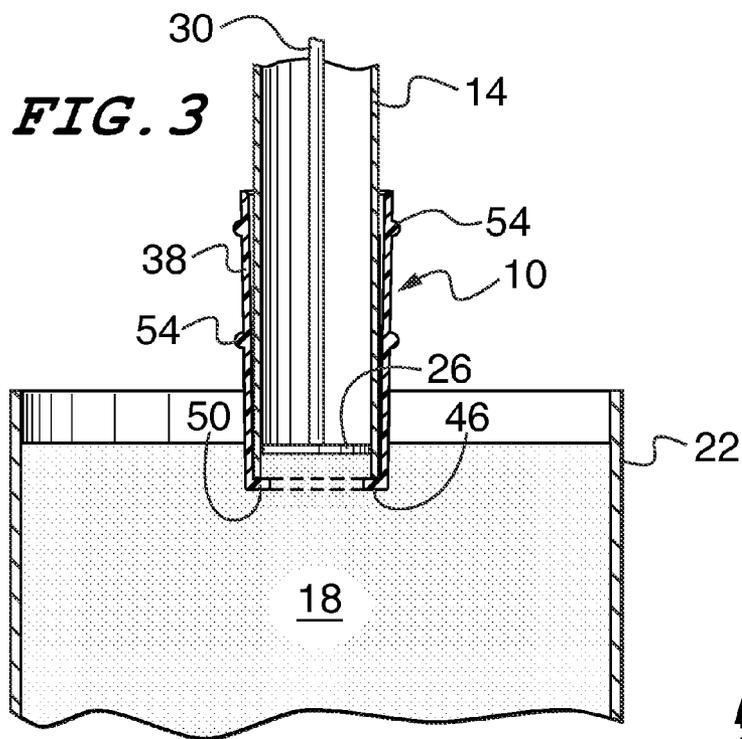
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A sleeve is provided which is arranged for use during loading of bulk viscous material, such as latex and silicone caulking compounds, into the barrel of a device for dispensing such compounds. The loading sleeve comprises a slightly larger open proximal end for receiving the barrel and a slightly narrower open distal end. A sidewall tapers as it extends from the proximal end to the distal end of the sleeve to create an interference fit with the barrel of the dispensing device when the barrel is inserted into the sleeve. The sleeve also includes an inwardly extending flange located at the open distal end of the sleeve to provide a seat for the barrel of the dispensing device when it is inserted into the sleeve.







SLEEVE FOR LOADING A DISPENSING DEVICE WITH BULK VISCOUS MATERIAL

[0001] This application claims the benefit under 35 U.S.C. §119(e) to U.S. Provisional Patent Application No. 61/723, 521, filed on Nov. 7, 2012 entitled SLEEVE FOR LOADING A DISPENSING DEVICE WITH BULK VISCOUS MATERIAL, the disclosure of which is incorporated by reference herein.

BACKGROUND OF THE INVENTION

[0002] Reloadable caulking guns known for the application of materials such as latex and silicone caulking compounds in bulk form are available from a number of manufacturers of such products. These so called bulk dispensing guns employ a loading sleeve, which must be screwed on and off of the barrel while manually holding the long heavy gun in a vertical orientation. The purpose of the loading sleeve is to prevent the exterior surface of the gun barrel from contacting the latex and silicone caulking compounds during loading of the bulk dispensing gun.

[0003] The loading sleeve of the prior art is internally threaded at its distal end. The barrel of the dispensing gun is inserted into the loading sleeve. An external thread located at the dispensing end of the barrel of the dispensing device is arranged to mate with the internal thread located at the distal end of the loading sleeve to form a threaded connection. There are several drawbacks with this arrangement. First, screwing the loading sleeve onto the dispensing end of the barrel of the dispensing device can be difficult due to the size and weight of the dispensing device and the loading sleeve. Second, due to the thread design of the loading sleeve, a gap often exists between the outer surface of the barrel of the dispensing device and the inner surface of the loading sleeve. Therefore, the threaded connection serves as the only barrier to prevent air and dispensing material from seeping onto the exterior surface of the dispensing gun during loading. In many cases, this threaded connection is inadequate for this purpose and bulk material and air may seep onto the exterior surface of the bulk dispensing gun during loading. The loading sleeve of the present invention overcomes both of the foregoing drawbacks.

BRIEF SUMMARY OF THE INVENTION

[0004] A sleeve is provided which is arranged for use during loading of bulk viscous material, such as latex and silicone caulking compounds, into the barrel of a device for dispensing such compounds. The loading sleeve comprises a slightly larger open proximal end for receiving the barrel and a slightly narrower open distal end. A sidewall tapers as it extends from the proximal end to the distal end of the sleeve to create an interference fit with the barrel of the dispensing device when the barrel is inserted into the sleeve. The sleeve also includes an inwardly extending flange located at the open distal end of the sleeve to provide a seat for the barrel of the dispensing device when it is inserted into the sleeve.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWINGS

[0005] The invention will be described in conjunction with the following drawings in which like reference numerals designate like elements and wherein:

[0006] FIG. 1 is a perspective view of an embodiment of the loading sleeve of the present invention for mounting to the distal end of a dispensing device barrel;

[0007] FIG. 2 is a perspective view of a portion of an embodiment of the loading sleeve of the present invention attached to the distal end of a barrel for drawing the viscous material into the dispensing device barrel;

[0008] FIG. 3 is a sectional view taken along line 3-3 of FIG. 2; and,

[0009] FIG. 4 is a sectional view of an embodiment of the loading sleeve of the present invention attached to the distal end of a barrel and illustrating viscous material being drawn from a drum into the barrel by pulling back on the piston rod of the dispensing device.

DETAILED DESCRIPTION OF THE INVENTION

[0010] Referring now to FIGS. 1-4, the invention provides a loading sleeve 10 arranged for attachment to the dispensing end of a barrel 14 of a dispensing device, such as is intended for dispensing viscous materials including caulking materials, silicones, and epoxies. The loading sleeve 10 is for loading such viscous materials 18 in bulk form from a container such as a pail or drum 22. Such a conventional dispensing device, e.g., a caulking gun, typically includes a forward located barrel 14 of conventional design for housing a composition of viscous material 18 to be dispensed. It should be understood that the barrel 14 can be of any desired construction or configuration for housing a composition of viscous material 18 to be dispensed, and does not constitute a limitation on the present invention. As best shown in FIGS. 3 and 4, fitted within the barrel 14 is a piston assembly of conventional construction and including a piston 26 axially mounted to a piston rod 30. The piston assembly serves to extrude the composition of viscous material 18, once loaded into the barrel 14, through the barrel 14 as the piston assembly advances to ultimately extrude the composition of viscous material 18 through a nozzle (not shown) carried by a front cap (not shown) generally threaded onto the threaded dispensing end 34 of the barrel 14.

[0011] As shown in FIGS. 1-4, the loading sleeve 10 is of generally cylindrical construction and includes a sidewall 38, an open proximal end 42, an open distal end 46, and an internal flange 50 located at the open distal end 46. The sidewall 12 tapers very gradually from the slightly larger diameter proximal end 42 which is arranged to receive the barrel 14 of the dispensing device during loading, to a slightly smaller diameter open distal end 46. For example, in one embodiment, the open proximal end 42 of the loading sleeve 10 tapers from a larger diameter down to a diameter of approximately 2.100 inches. Where the outside diameter of the barrel 14 is 2.125 inches, the barrel 14 may be fitted within the larger diameter proximal end 42 of the loading sleeve 10. As the barrel 14 is inserted further within the tapered sidewall 38 of the loading sleeve 10, eventually creates a tight interference fit with the tapered sidewall 38 and eventually seats against the inwardly extending flange 50 of the sleeve 10. In this manner, the outside surface of the barrel 14 including the threaded dispensing end 34 are protected by the sleeve 10 during loading of the bulk viscous material 18 from the drum 14.

[0012] In use, prior to attaching the loading sleeve 10 to the dispensing end 34 of the barrel 14, the end cap and nozzle (neither component shown) of the dispensing device must be removed therefrom. The loading sleeve 10 is then placed over

the dispensing end **34** of the barrel **14** until the dispensing end **34** seats against the inwardly extending flange **50** of the loading sleeve **10**. This creates an interference fit between the loading sleeve and the barrel which prevents viscous material from leaking onto the outside surface of the barrel **14** including the threaded dispensing end **34** during loading.

[0013] Next, the user may submerge the distal end **46** of the loading sleeve **10** attached to the barrel **14** into the viscous material **18**, typically provided in bulk form in a container **22** such as a generally cylindrical pail, drum, etc. The loading sleeve **10** prevents viscous materials from contacting the exterior of the barrel during loading and eliminates cleanup prior to dispensing. The loading sleeve is sufficiently submerged into the drum to prevent air infiltration into the barrel **14** during loading. Next, the user pulls back on the piston rod **30** of the dispensing device to retract the piston **26** inside the barrel to create a vacuum and draw bulk caulking material from the drum into the barrel. Use of the loading sleeve **10** prevents viscous material **18** from contacting the exterior of the barrel including its threaded dispensing end **34** and eliminates the need for cleanup. Next the user removes the loading sleeve **10** from the dispensing end of the barrel and replaces the nozzle and the end cap components (not shown). The loading sleeve is provided with external ribs **54** extending circumferentially along the sidewall **38** of the loading sleeve **10** to facilitate manual removal of the loading sleeve **10** from

the barrel **14**. Next, the user replaces the cap and nozzle components (not shown) to render the loaded dispensing device ready for use.

1. A sleeve arranged for use during loading of bulk viscous material into the barrel of a bulk dispensing device, said sleeve comprising:

- a. a slightly larger open proximal end for receiving the barrel, and a slightly narrower open distal end;
- b. a sidewall tapering as it extends from said proximal end to said distal end to create an interference fit when the dispensing device barrel is inserted into said sleeve; and,
- c. an inwardly extending flange located at the open distal end of said sleeve to provide a seat for the dispensing device barrel when it is inserted into said sleeve.

2. The sleeve of claim 1, wherein the open distal end includes a diameter of approximately 2.100 inches.

3. The sleeve of claim 1, wherein said sidewall includes an outside surface, and wherein said sleeve additionally comprises at least one external rib located on said sidewall outside surface.

4. The sleeve of claim 3, wherein said at least one external rib comprises three external ribs.

5. The sleeve of claim 1, wherein said sleeve is arranged for use during loading of bulk viscous material from a pail or drum.

6. The sleeve of claim 1, wherein said sidewall is of generally cylindrical construction.

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