



US 20070095865A1

(19) **United States**

(12) **Patent Application Publication**  
**Chick**

(10) **Pub. No.: US 2007/0095865 A1**

(43) **Pub. Date: May 3, 2007**

(54) **FASTENER ENGAGING CAULKING TUBE NOZZLE**

(60) Provisional application No. 60/740,609, filed on Nov. 29, 2005.

**Publication Classification**

(76) Inventor: **Mark C. Chick**, St. Louis, MO (US)

Correspondence Address:  
**Paul M. Denk**  
**Ste. 170**  
**763 S. New Ballas Road**  
**St. Louis, MO 63141 (US)**

(51) **Int. Cl.**  
**B65D 35/38** (2006.01)  
**B65D 88/54** (2006.01)

(52) **U.S. Cl.** ..... **222/568; 222/327**

(57) **ABSTRACT**

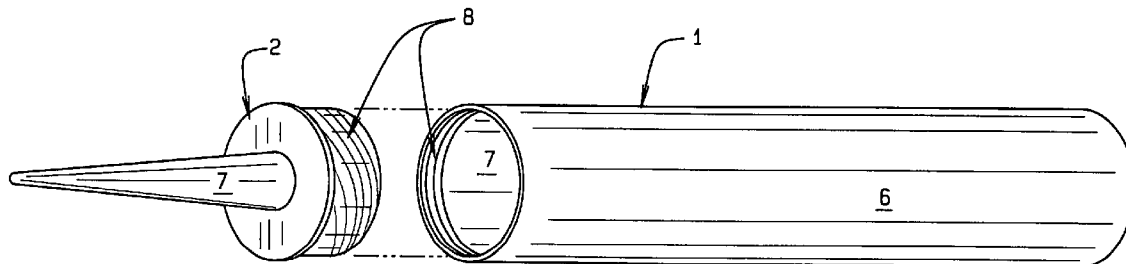
Caulking tube nozzle, having a nozzle portion, with an integral base, and having a lip connecting and extending downwardly therefrom, the lip is intended for inserting within the upper end of the caulking tube, and is threadedly engaged, held by a bayonet lock, or other fastener, therein, so that the nozzle can be held in place during usage, or opened for removal of any hardened material, before usage. The base of the nozzle may also under certain circumstances engage externally of the upper end of the caulking tube.

(21) Appl. No.: **11/604,077**

(22) Filed: **Nov. 24, 2006**

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 11/261,207, filed on Oct. 28, 2005.



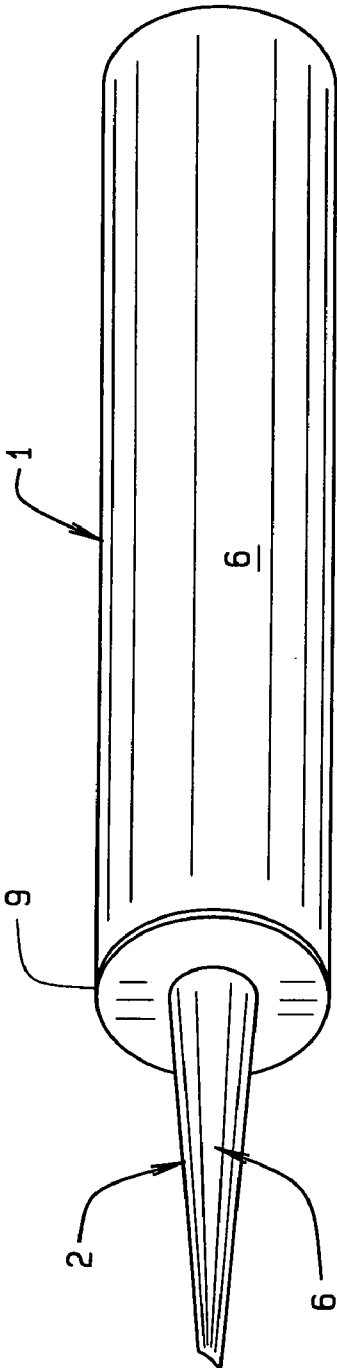


FIG. 1

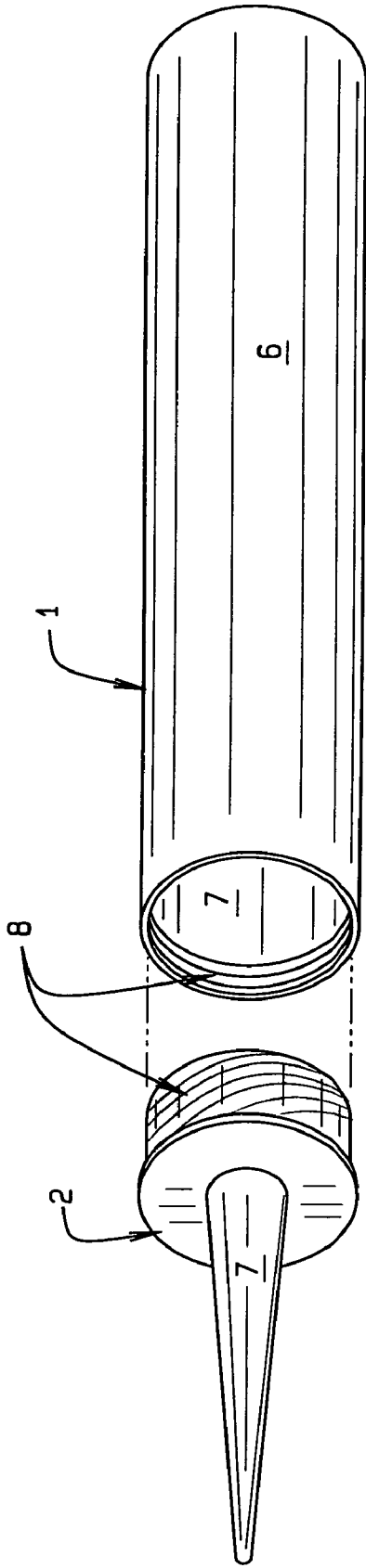


FIG. 2

**FASTENER ENGAGING CAULKING TUBE NOZZLE**

**CROSS REFERENCE TO RELATED APPLICATION**

[0001] This nonprovisional patent application claims priority to the provisional patent application having Ser. No. 60/740,609, filed on Nov. 29, 2005; this application is also a continuation-in-part application which claims priority to the regular letters patent application having Ser. No. 11/261, 207, which was filed on Oct. 28, 2005, which claims priority to the regular letters patent application having Ser. No. 10/407,707, which was filed on Apr. 4, 2003, which claims priority to the provisional patent application having Ser. No. 60/370,765, which was filed on Apr. 9, 2002.

**BACKGROUND OF THE INVENTION**

[0002] This invention relates primarily to a caulking tube, for use with a caulking gun, and more specifically pertains to fastener engaged caulking tube nozzle.

[0003] This invention further relates to the caulking tube, wherein its nozzle portion can be installed, or replaced, particularly, after the factory installed nozzle and tube may become clogged, with a dry caulk, or where a nozzle, such as this replacement type, can be applied to a cylinder of caulk, and removed and replaced, in the event that the nozzle becomes clogged with dried material.

[0004] This invention further relates to a caulking tube that has the upper portion of the tube, and the nozzle, being attached to each other, through the use of threads, a twist lock, or a bayonet lock style of connection. After the caulking or similar type seal is initially punctured, and the material, such as caulking, is discharged through the nozzle, as at the end of the tube, the unused portion will eventually harden, and make it impossible to use the remaining portion of caulk, as at a later date. This invention allows the user to unscrew or unlock the upper portion of the tube, just below the top of the tube and nozzle, thereby allowing access for cleaning and removing dried caulk from both the nozzle and the upper main body of the tube. Or, the nozzle just may be replaced with a fresh nozzle, and allow the caulk within the cylinder to be forced forwardly, as during dispensing.

[0005] There are various styles of caulk tube nozzles, which are designed to attempt to eliminate the foregoing problems. Most of these nozzles screw or break off the top of the tube, such as can be seen U.S. Pat. No. 4,284,213, U.S. Pat. No. 5,833,099, U.S. Pat. No. 4,957,225, and U.S. Pat. No. 5,560,521. Normally, these prior art devices are designed so that hardened material can be removed from the nozzle or can simply replace the nozzle.

[0006] The problem with these types of designs is that only the hardened material located in the nozzle or tip portion is able to be removed. This design does not permit the user from removing the dried caulk from the main tube. Other patents, such as U.S. Pat. No. 4,876,757, are designed to retro-fit any caulking tube, and suggest cutting of the nozzle off of the tube, and threading the remaining portion of the nozzle, thereby allowing an after market type of nozzle to be screwed into the newly threaded portion. An additional patent U.S. Pat. No. 2,953,285, shows the cutting off of the factory installed nozzle and replacing a slightly

larger nozzle over the original. The problem with these types of designs, are that if the material has hardened below the cut portion of the nozzle, the hardened material cannot be removed through the small opening, where the nozzle was cut off.

[0007] This current invention allows the worker to simply unscrew the upper portion of the caulk tube, and remove the dried material that has hardened within the upper frontal regions of the caulk cylinder, and the main body of the tube, and reattach the upper portion and nozzle, thereby allowing the worker to readily use the remaining softer portion of the caulking material, that was previously trapped behind the dried caulk.

**BRIEF SUMMARY OF THE INVENTION**

[0008] This invention contemplates the usage of a standard caulking tube, one which holds the fresh and viable caulk material therein, and which can be dispensed through the usage and application of the caulking gun. The replacement caulking tube nozzle of this invention includes what is configured to be the standard type of nozzle, having a length of two to four inches (2" to 4"), as is known in the art. But, in this particular instance, the nozzle has an integrally formed base portion therewith, which incorporates a lip integrally extending downwardly therefrom, and which is designed to mate either within or exteriorly upon but in very close contiguous contact for a fastening fit, with the upper end of the caulking tube, where the nozzle is applied. Hence, the base of the nozzle, with its lip, can include a series of threads, bayonet fitting means, or other types of connections, to allow the lip to fit internally of the upper end of the caulking tube, and be threadedly or otherwise engaged therein, when readying the caulking tube for usage in application with the caulking gun. More specifically, as summarized above, the concept of this invention is to provide a nozzle, and the upper base portion of a caulking tube, being integrally formed, and which can be removed, so as to allow a complete clean-out of the nozzle, when any hardened material has formed herein, as at after usage, and when stored for some time, and also to allow the hardened caulking material that is formed within the upper reaches of the cylinder, to be scraped out, before the nozzle is threadedly or otherwise engaged back within the caulking tube, in preparation for further usage. Preferably, the lip portion of the base that forms integrally with the nozzle may include a series of external threads, so that it can be threadedly engaged therein, and therefore the entire caulking cylinder can be readily used with the standard type of caulking gun, during application. It is of concern that if the lip portion of the nozzle is too thick, and it is threadedly engaged externally of the upper end of the caulking tube, that the nozzle, with its base and lip, may not fit within the standard caulking gun, for usage. On the other hand, if the lip portion can be made thin enough, and yet incorporate internal threads, for threadedly engaging over the upper end of the caulking tube, then the concept of this invention could have its nozzle applied externally, in the manner as previously described.

[0009] This invention makes it possible to extract any hardened caulk and properly expose the usable caulking, as often found in previously open tubes of caulk. The upper portion of the caulk tube and nozzle can be detached by unscrewing or unlocking it from the main body of the tube. After the upper portion or cylinder has been separated, from

the main body of the caulk tube, the worker has access to clean the dried matter from both the upper portion of the tube, and including from within the nozzle, and be allowed to remove the dried matter from both the upper portion of the tube including the nozzle, and thereby to clear the main body of the tube for further dispensing of caulk under pressure, during usage of the caulking gun. The upper portion of the caulk tube is secured to the main body of the tube by threads or a twist lock. Such fastening means can be located on the main tube, and the upper portion of the tube, including the nozzle, so that secure fastening can be made, and so it will not leak, particularly when the caulking tube is subjected to extensive pressure, during usage of the gun. Any silicone butyl rubber caulk will harden beyond the nozzle and into the actual tube, depending upon the amount of time that has elapsed since the initial seal was punctured. Since the upper portion of the tube can be easily removed, cleaned, and reattached, it makes it possible to extract that undamaged caulking or materials from the original nozzle.

[0010] It is, therefore, the principal object of this invention to provide a caulking tube nozzle that can be threadedly or otherwise engaged to the upper end of the caulking tube, so that it may be readily removed, and replaced, or simply cleaned out, during usage.

[0011] Still another object of this invention is to provide a replacement nozzle for a caulking tube.

[0012] Yet another object of this invention is to provide a fastening nozzle, which can be removed, so that the hardened caulking material formed at the upper end of the caulk tube, can be carved out.

[0013] Still another object of this invention is to provide a replacement for a caulking tube that may be very quickly and easily applied, or removed for cleaning, thereby eliminating the need to throw away half used tubes of caulk that may still have a substantial amount of fresh and pliable caulk therein, but cannot be otherwise dispensed because of blockage.

[0014] These and other objects may become more apparent to those skilled in the art upon review of the summary of this invention, and upon undertaking a study of the description of its preferred embodiment, in view of the drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0015] In referring to the drawings, FIG. 1 is an isometric view of a caulking tube of this invention; and

[0016] FIG. 2 is an isometric view of the caulking tube, with the nozzle being threadedly removed, so as to allow ready clean out of any dried caulk from the upper end of the tube, or from within the nozzle, in preparation for subsequent usage.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

[0017] In referring to the drawings, and in particular FIG. 1, therein is shown a typical cartridge containing caulk or other material 6. Normally, this is a cylinder or tube 1, which holds the supply of caulk, in preparation for usage. The cylinder 1 includes an integrated nozzle 2, onto the top of the standard type of tube, for application to a caulking gun. After the nozzle 2 has been initially cut, and material 6 has been

forced from the tube, during usage, as through the nozzle 2, there is normally some remaining amount of material that is left within the upper portion of the tube, and its nozzle, after usage. After prolonged storage, such caulking material can become reasonably hardened, over time, making it impossible to force the remaining material 6 through the nozzle 2, during subsequent usage.

[0018] As can also be seen, the integrated nozzle 2 has a flange 9 that extends out to embrace the upper edge of the tube 1, so as to provide for further sealing at that location, with the pressure exerted by the caulking gun pushing the nozzle forwardly, acts as a further seal against leakage of any of the caulking material at this location.

[0019] As seen in FIG. 2, the upper portion of the tube or cylinder 2 will have been previously secured by threads or other locking device 8 to the nozzle, and more specifically to the lip of the base 2 of the nozzle, as can be noted. Furthermore, threads will be provided internally of the upper end of the tube, in order to allow the nozzle, its base, and threaded lip portion, to be threadedly or otherwise locked therein, in preparation for usage. When removed, any hardened material can be eliminated, either by scraping from the upper end of the cylinder or tube 1, and the hardened material within the nozzle 7 can be forced downwardly, and out of the same, in preparation for further dispensing. This has been achieved, and after all the dried material has been removed from the top portion 2, from its nozzle, and from the upper part of the main tube body 1, the nozzle may be threadedly or otherwise engaged within the cylinder 1, in preparation for further usage, and dispensing the caulking material through the application of a caulking gun. This will allow clearance for the usable remaining material 6 to be forced through the main body of the tube 1, and through the upper portion, as through the base 2, and through the nozzle 2, dispensing caulking material during application.

[0020] As previously stated, the means for connection of the nozzle, and particularly through its lip portion of the base 2, can be by threaded engagement, by a bayonet lock, all of which may locate internally of the upper part of the tube, or if the lip portion of the base is thin enough, it can be threadedly engaged externally thereof, and yet allow adequate clearance for the tube of fresh caulking material to be applied to the gun, in preparation for compression dispensing.

[0021] Variations or modifications to the subject matter of this invention may occur to those skilled in the art upon review of the invention as described herein. Such variations, if within the spirit of this development, are intended to be encompassed within the scope of any invention as defined. The depiction of the invention as shown in the drawings, and as described in the preferred embodiment, are set forth for illustrative purposes only.

1. A caulking tube nozzle, for use at the forward end of a tube of caulking material, and which may be applied to the upper end of the tube as it is cutaway to expose fresh caulking material, during usage, including a tube of caulking material, a nozzle for application to the front of the caulking tube, said nozzle having a forwardly extending nozzle means, and through which a caulking material will be compressed by any caulking gun to force it out the nozzle tip during application, the base of the nozzle integrally formed with a flanged closure, said flanged closure at its approxi-

mate outer edge having a downwardly extending sleeve, such sleeve provided for compressing into the interior of the tube of caulking, with a portion of the flange abutting against the upper edge of the caulking tube, to seal it against leakage of caulking material at that location, and said downwardly extending sleeve has external threads applied thereto, and said nozzle and its flanged closure capable of turning into threaded engagement within the inner upper end of the caulking tube during nozzle application.

2. The caulking tube nozzle of claim 1 and wherein the interior of the caulking tube includes a length of inner threads, and which complement the threaded sleeve of the nozzle to provide for a threaded engagement between the nozzle and its flanged closure when threaded into the caulking tube after its upper end has been cut to remove any hardened caulk.

\* \* \* \* \*