

such as rectangular or square (not expressly shown). Exterior dimensions of second sleeve **122** may also be varied. However, interior dimensions of second sleeve **122** will generally be compatible with forming tapered API threads **144** therein. The configuration and dimensions of bit holder **120** and hollow tube **220** may be modified as appropriate for various types of rotary drill bits which may be packaged, shipped, stored and/or presented therein.

FIG. 4 is a schematic drawing in section with portions broken away showing rotary drill bit **240** disposed within container **80**. One of the benefits of forming handles **206** and **208** in accordance with teachings of the present disclosure results in providing tapered surfaces **266** and **268** disposed within second portion **200** adjacent to end **202**. The dimensions and configuration of tapered surfaces **266** and **268** may be selected to accommodate exterior portions of an associated fixed cutter drill bit **240**. As a result, interior tapered surfaces **266** and **268** cooperate with threads **44** formed in first component **100** to securely engage fixed cutter drill bit **240** within container **80**.

Rotary drill bit **240** as shown in FIGS. 4 and 5 may include a pair of slots or grooves **246** extending along opposite sides of bit body **260**. A bit breaker may be engaged with slots **246** to engage and disengage rotary drill bit **240** from an associated drill string. Examples of such bit breakers are shown in FIGS. 2B, 3, 7, 8 and 9.

Bit breakers **280** and **280a** may be formed from relatively thick metal plates appropriate for use on a drilling rig during engagement and disengagement of a rotary drill bit with an associated drill string. Bit breakers **280** and **280a** may be described as having generally square configurations with respective U-shaped opening or U-shaped slots **282** and **282a** formed therein. A pair of tapered surfaces **285** and **286** may be formed at the inlet to slots **282** and **282a**.

Slots **282** and **282a** may have approximately the same overall length. However, width **284** of slot **282** may be smaller than width **284a** of slot **282a**. For some applications width **284** formed in bit breaker **280** may be selected for use with rotary drill bits having nominal diameters between approximately seven inches and eight inches. Width **284a** in bit breaker **280a** may be selected to be compatible for use with rotary drill bits having nominal diameters between approximately nine inches and thirteen inches.

Bit breakers may have the same general exterior configuration and overall size without regard to the size of respective rotary drill bits which may be engaged or disengaged from a drill string using such bit breakers. As a result, containers formed in accordance with teachings of the present disclosure for rotary drill bits having a diameter of less than approximately seven inches may be smaller than typical bit breakers use with such drill bits. Therefore, containers designed for use with rotary drill bits having a nominal diameter of less than seven inches and an associated bit breaker may be strapped with each other (not expressly shown) as compared with attaching the bit breaker to one end of such containers.

For some applications a bit breaker adapter incorporating teachings of the present disclosure may be described as a generally hollow block having a rectangular configuration such as bit breaker adapters **300** and **300a** shown in FIGS. 2B, 3, 7, 8 and 9. Solid blocks and configurations other than rectangular may also be used to form a bit breaker adapter in accordance with teachings of the present disclosure.

For some embodiments width **302** of bit breaker adapters **300** and **300a** may be selected to be approximately equal to width **284** of slot **282** formed in bit breaker **280**. See FIGS. 3 and 8. For such applications length **304** of bit breaker adapters **300** and **300a** may be selected to be approximately equal to

width **284a** of slot **282a** formed in bit breaker **280a**. See FIG. 9. As a result bit breaker adapters **300** and **300a** may be satisfactorily used to releasably engage bit breaker **280** or bit breaker **280a** with a container formed in accordance with teachings of the present disclosure.

Height **305** of bit breaker adapter **300** measured from beneath lips or flanges **312** and **314** may be approximately equal to the thickness of bit breaker adapter **300**. Height **305a** of bit breaker adapter **300a** may be greater than corresponding height **305** of bit breaker **300**.

For some applications an enlarged recess or open space may be formed in bit breaker adapters **300** and **300a**. The recess or open space may be defined in part by bottom or layer **316** and respective pairs of sidewalls **322** and **324** extending therefrom. Respective lip or flange **312** may extend from each sidewall **322** opposite from bottom **316**. Respective lip or flange **314** may extend from each sidewall **324** opposite from bottom **316**. Flanges **312** and **314** cooperate with each other to releasably engage an associated bit breaker with one end of a container in accordance with teachings of the present disclosure.

Respective hole or opening **306** may be formed proximate the center of bit breaker adapters **300** and **300a** extending through bottom **316**. Various types of lifting devices and/or lifting mechanisms may be inserted through hole **306** to releasably engage bit breaker adapter **300** or **300a** with one end of a container in accordance with teachings of the present disclosure.

For embodiments such as shown in FIGS. 2A, 2B and 3 threaded hole **250** may be formed in exterior surface **204** extending through end **202** of container **80**. For such applications lifting eye **252** may be inserted through hole **306** to releasably engage bit breaker adapter **300** with end **202** of container **80**. Eye **252** may also be directly engaged with hole **250** for use in lifting and/or manipulating container **80** when a bit breaker is not attached hereto. For example, when a roller cone drill bit is disposed in container **80**, a bit breaker may not be attached to container **80**. A bit breaker adapter will generally not be attached to one end of container **80** if container **80** is designed to accommodate rotary drill bits smaller than approximately seven (7) inches diameter.

For some applications bit breakers **280** and **280a** may include a pair of handles **274** and **276** extending therefrom. When bit breaker **280** or **280a** has been releasably engaged with one end of a container in accordance with teachings of the present disclosure, a lifting strap or other suitable mechanism may be engaged with handles **274** and **276** for use in manipulating the container.

For some applications threaded hole **250** may be formed in exterior surface **204** of end **202**. For such applications appropriate reinforcing material such as a metal plate (not expressly shown) may be embedded within end **202** of second component **200**. For other applications end **202** may be formed from high strength plastic material or other material compatible with forming a threaded opening therein which may be releasably engaged by lifting eye **252** without the use of a metal reinforcing plate.

Bit breakers often contain a restraining bar and associated latch mechanism to maintain engagement between the bit breaker and associated rotary drill bit during manipulation of the rotary drill bit by a drill string at a well site. For embodiments such as shown in FIGS. 2B, 3, 7, 8 and 9 bit breakers **280** and **280a** may include restraining mechanism **290** defined in part latching bar **292**. One end of latching bar **292** may be rotatably attached with bit breaker **280** or **280a** using pivot pin **294** or other suitable mechanisms. Latch assembly **296** may also be provided on bit breaker **280** or **280a** to