

## SHIPPING CONTAINER

## BACKGROUND OF THE DISCLOSURE

The present invention is directed to a shipping container, particularly, a universal shipping container for transporting drill bits for use in the oil drilling industry.

When preparing a well plan for drilling an oil well, hole sizes, casing depths, and formations to be drilled are analyzed and the types of drill bits suited for the digging that will be required are selected and delivered to the well site. Bit suppliers maintain well records from previous drilling activity in a specific area so that a drill bit program may be prepared based on that past experience. Drilling times are estimated and the types of bits to be utilized to perform the drilling are selected. The number and types of drill bits may vary from one drill site to another. For extremely deep wells, hundreds of drill bits may be required to drill to the target depth.

Modern roller drill bits are generally of the three cone type. The bit cones include a number of teeth for drilling through a formation. For extremely hard formations, tungsten carbide insert bits or diamond bits may be employed.

Typically, the drill bits for a drilling program are supplied by a bit supplier. The bits are delivered to the drill site and stored so that they are readily available to be used as needed during the drilling operation. The drill bits are very expensive and an integral part of the drilling program and, therefore, great care must be taken to insure that the drill bits are not damaged during shipment or storage at the drill site.

Presently, drill bits are commonly shipped in reinforced wooden boxes. To withstand the rough treatment encountered in the field, the boxes are heavily reinforced to provide a sturdy container. The drill bits are placed in the wooden containers and anchored with packing or some type of bracing to prevent movement within the wooden container. The reinforced wooden container and drill bit contained therein are very heavy and thus difficult to move from one place to another. The shipping container of the present invention overcomes the disadvantages of the prior art drill bit shipping containers.

It is an object of the present invention to provide an extremely durable shipping container which is simple to use in the field.

It is another object of the present invention to provide a universal shipping container wherein a single container may be adapted to receive and secure drill bits having a range of diameters and lengths.

It is yet another object of the invention to provide a shipping container which is portable, compact and easily stackable, yet more durable than drill bit containers presently available in the prior art.

## SUMMARY OF THE INVENTION

The present invention is directed to a universal shipping container. The container includes two telescoping components which cooperate to securely hold a drill bit in the shipping container. The outer component includes an opening through its upper end permitting the shank of the drill bit to extend therethrough. The two components include an adjustable locking mechanism for securely locking the components relative to each other. A removable ring member may be mounted to the upper end of the outer member for reducing the opening extending therethrough and enabling the con-

tainer of the invention to accommodate different size drill bits.

## BRIEF DESCRIPTION OF THE DRAWINGS

So that the manner in which the above recited features, advantages and objects of the present invention are attained and can be understood in detail, a more particular description of the invention, briefly summarized above, may be had by reference to the embodiments thereof which are illustrated in the appended drawings.

It is to be noted, however, that the appended drawings illustrate only typical embodiments of this invention and are, therefore, not to be considered limiting of its scope, for the invention may admit to other equally effective embodiments.

FIG. 1 is a perspective view of an embodiment of the invention;

FIG. 2 is a sectional view of the container of the invention taken along line 2—2 of FIG. 1;

FIG. 3 is a top, partially broken away, plan view of the container of the invention;

FIG. 4 is a perspective view of an alternate embodiment of the invention;

FIG. 5 is a sectional view of the container of the invention taken along line 5—5 of FIG. 4;

FIG. 6 is a top plan view of the invention showing the slotted bolt utilized in the locking mechanism of the invention; and

FIG. 7 is a sectional view of the take up bolt of the invention.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring first to FIG. 1 of the drawings, the container of the invention is generally identified by the reference numeral 10. The container 10 includes two separable components. The outer component comprises a tubular body 12 open at one end and partially closed at the opposite end by a top ring plate 14. The ring plate 14 includes a pair of handles 16 integrally formed therewith for grasping and conveniently lifting the outer component to separate the two components of the container 10. The ring plate 14 includes a tab 18 adjacent each of the handles 16. The tabs 18 project outwardly and lie in the plane defined by the ring plate 14. The tabs 18 extend outwardly beyond the outer circumference of the body 12. Each of the tabs 18 includes a hole extending therethrough permitting the threaded end of a take up bolt device 20 to extend through the hole.

The ring plate 14 is welded or otherwise connected to the upper end of the body 12 as shown in FIG. 1. The ring plate 14 partially closes the upper end of the body 12. The center portion of the ring plate 14 is open permitting the threaded end or shank of a drill bit to extend therethrough as shown in phantom in FIG. 2. The central opening 22 in the ring plate 14 is defined by a circumferential edge 24.

Referring now to FIGS. 2 and 3, the inner component of the container 10 includes an upstanding tubular body 26. The body 26 is closed at the lower end thereof by a base plate 28 which is welded or otherwise connected to the lower circumferential edge of the body 26. The upper end of the body 26 is open permitting a drill bit to be placed within the body 26 as shown in phantom in FIG. 2. The bottom plate 28 is substantially square in shape and extends outwardly beyond the outer circum-