T. W. BELL.

WELL JAR.

APPLICATION FILED APR. 16, 1914.

1,277,683.

Patented Sept. 3, 1918.

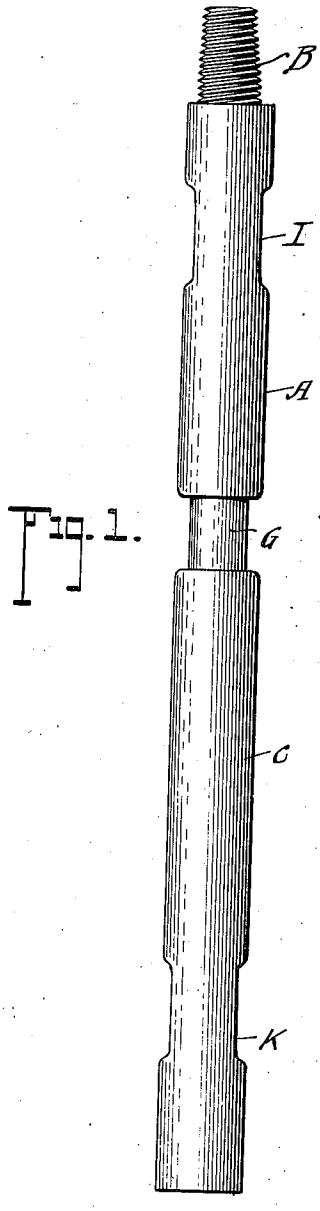


Fig. 1.

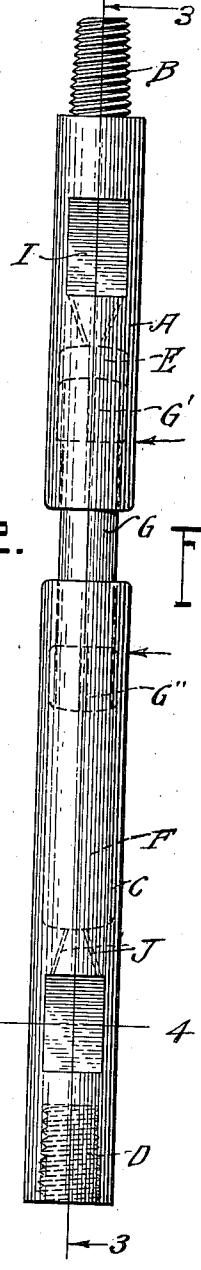


Fig. 2.

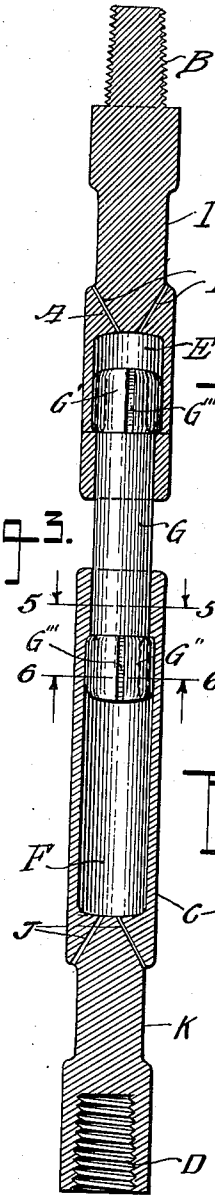


Fig. 3.

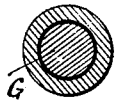


Fig. 5.

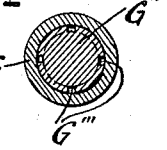


Fig. 6.

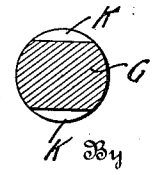


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS W. BELL, OF SISTERSVILLE, WEST VIRGINIA.

WELL-JAR.

1,277,683. Specification of Letters Patent. Patented Sept. 3, 1918.

Application filed April 16, 1914. Serial No. 832,348.

To all whom it may concern:

Be it known that I, THOMAS W. BELL, a citizen of the United States, residing at Sistersville, in the county of Tyler and State of West Virginia, have invented certain new and useful Improvements in Well-Jars, of which the following is a specification.

The present invention relates to improvements in drill jars and has for its object to provide a device of this character possessing the maximum amount of wearing surface with the desired result of greatly increasing the durability as compared with most devices of this nature in use at the present time.

The principal aim I have had in mind in the construction of this invention has been to provide a jar so arranged that a break occurring at the weakest point of any of its members leaves the remaining sections in most favorable condition for fishing out the tool thereby eliminating the frequent occurrence of plugged holes due to inability to obtain a hold upon the portions usually left in the hole.

A still further object in view is to provide a jar comprising a pair of connecting elements interposed in the drilling line with which coöperates a link or coupling member having swivel connection with said elements so as to provide a double swivel, the employment of which gives rise to numerous advantages, such as the prevention of twist in said drilling line, the imparting of a double jar, the elimination of likelihood of jarring of the pins off the stems, and the instant fall of the jar, the latter action being enhanced by forming the parts with fluid passages to enable quick escape of fluid from the jar member.

These and such other objects as may hereinafter appear are attained by the novel construction, combination and arrangement of parts to be hereinafter specifically described and claimed. Reference will now be had to the accompanying drawing, forming a part of this specification, wherein:

Figure 1 is a side elevation of an embodiment of my invention.

Fig. 2 is an elevation of the same from another side.

Fig. 3 is a longitudinal sectional view on the line 3—3 of Fig. 2; and

Figs. 4, 5 and 6 are transverse sectional views on the line 4—4 of Fig. 2, and 5—5, 6—6 of Fig. 3, respectively.

Throughout the following detail description, and on the several figures of the drawings, similar parts are referred to by like reference characters.

Referring to the drawing and specifically describing my invention, the same consists of an upper connecting member A provided with a threaded extremity B for connection of the same to the sinker bar of the usual drilling line employed in boring oil or Artesian wells and a lower connecting member C having the screw socket extremity D for connection of the latter member to the stem of the drilling tool. The upper member A is formed with a hollow portion E and the lower member C has also a hollow portion F but the latter is considerably longer than the hollow portion E for reasons which will be hereinafter more clearly set forth. A link or coupling member G connects the connecting members A and C together and this link is provided at each end with enlarged heads G′, G″ which are disposed in the respective hollow portions E and F of the connecting members A and C. The peculiar coöperation of these three members obviously provides a double swivel so that the possibility of a twist in the drilling line is absolutely eliminated. As will be obvious by reference to the drawing, the length of the body portion of the coupling member G permits of relative movement of the connecting members A and C toward and from each other in the operation of the device, and such movement permits the upper connecting member A to impart a blow upon the lower member C when the drilling line is slackened and the drilling tool is dropped. This is a desirable advantage as will be apparent to those skilled in this art, and, furthermore, this relative movement permits the coupling member G, or more strictly speaking its lower head G″ to impart a blow to the lower connecting member C when the drilling line is raised, thus affording the usual jar action inherent to these devices which are customarily provided for drilling apparatus of this character.

As hereinbefore mentioned the hollow portion F extends longitudinally of the connecting member C a considerable portion of its length or it is of a length proportionate to the coupling member G which will permit said coupling member to drop into the member C in the event of breakage of the coupling member during the use of the de-

vice. The reason for arranging the construction as just described, will be apparent because the breakage of devices of this character is of common occurrence and my aim in arranging the parts has been to permit the extraction of the tool from the hole when such breakage occurs in a most facile manner. When the coupling falls into the hollow portion as mentioned it is easy to run a spear into the last member for extracting the implement. Breakage of the member A will naturally occur at its weakest point which is indicated by the arrow in Fig. 2 and the coupling member of course will remain standing in the hole when this occurs so that a combination socket may be lowered into the opening for the purpose of gripping the jar to pull out the implement. Likewise breakage of the connecting member C will occur at its weakest point indicated by the second arrow in Fig. 2, and this leaves a hole, or the hollow portion F in which the extracting spear may be inserted for pulling on the remaining portion.

It will be understood that the jar comprehended by my invention will be made of the best material, the three sections being linked together after being turned or finished by swaging or the "closing in" process well known to those skilled in this art and the coöperation of the members of the jar affords a construction which is not so rigid as to cause the pins on the stem to be jarred off.

Another important feature of my invention is the provision of fluid passages H in the upper connecting member A leading from the hollow portion E exteriorly of said member where it is attenuated or flattened at opposite sides as indicated at I. The lower connecting member C is also formed with fluid passages J leading to its attenuated portion K from the hollow portion F and, furthermore, the body portion of the coupling member G is of a diameter somewhat less than the extremities of the connecting members so as to permit the passage of fluid from above and beneath the heads G′, G″ of the coupling member G upon movement of the coupling in either the upward or downward direction. The result of this arrangemnt is that the jar easily slides on its swivel and dropping of the same takes place instantly affording a most efficient impact. In addition, the heads G′ and G″ are provided with a plurality of longitudinal grooves G‴ by means of which the fluid passes the headed portions of the coupling member G during relative movement of the members of the jar, these passages cooperating with the passages H and J of the connecting members to facilitate the complete removal of fluid from the device.

Having thus described my invention, what I claim as new is:

1. A drill jar comprising a pair of connecting members interposed in a drilling line, and a link member having swivel connection at each end with said connecting members.

2. A drill jar comprising a pair of connecting members, and a coupling member loosely connecting said connecting members together and having an enlarged head at each end providing a double swivel connection.

3. A drill jar comprising a pair of connecting members, and a coupling member loosely connecting said connecting members together and having an enlarged head at each end providing a double swivel connection, each of the connecting members having a hollow portion permitting relative movement of each head in its respective connecting member.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS W. BELL.

Witnesses:

JOSEPH E. MAGNER,

BYRD FRANKLIN MANNERS.