June 6, 1933. F. HUX 1,913,030

PACKER ATTACHING MEANS

Filed June 17, 1931

Fig. 1.

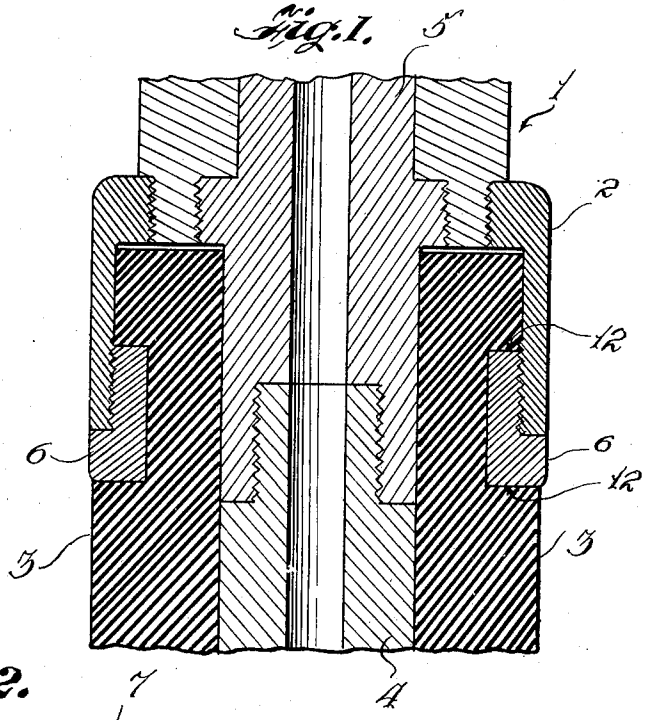


Fig. 2.

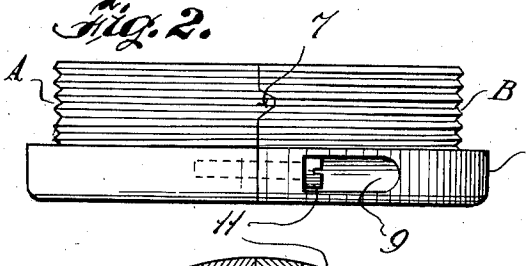
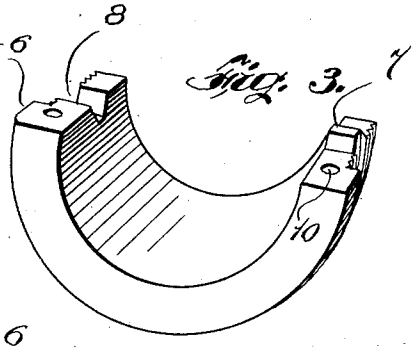


Fig. 3.



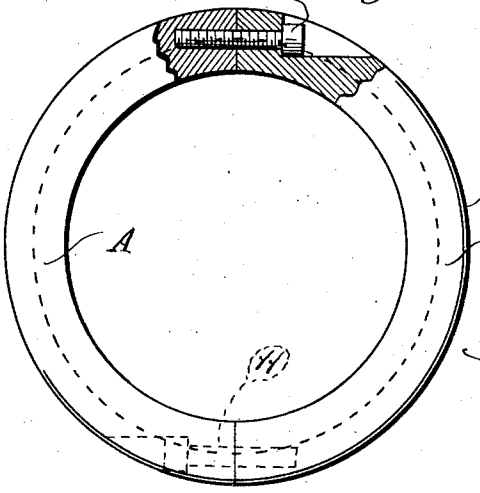


Fig. 4.

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PACKER ATTACHING MEANS

Application filed June 17, 1931. Serial No. 545,065.

This invention relates to sand testing devices used in deep well drilling and the object thereof is the provision of an improved form of packer for sand testing tools.

More particularly the invention aims to provide a packer which is detachable from the tool, but when on the latter is locked into position against accidental displacement, caused by the frequent expansion and contraction of the packer or packers in the well in its operation in separation of the sand test from the mud and water.

With this object in view, the invention will be clearly understood from a perusal of the following detailed description, taken in connection with the accompanying drawing, forming part hereof and wherein:

Figure 1 represents a sectional detail view of one end of a sand testing tool showing its connection with one end of a packer embodying the invention.

Figure 2 represents a side elevational view of the device embodying the invention, and removed from the packer and the tool.

Figure 3 is a perspective view of one half of the device, separated from its companion half, showing the lug and recess for interlocking the halves together, and

Figure 4 is a bottom view of the device with its two halves joined together, and partly broken away and illustrating the means for securing the parts together.

Referring more particularly to the drawing, 1 represents the body of a sand testing tool with a collar 2 threadedly engaged thereto, and ordinarily the packer element 3 at each end thereof is held in position by this collar and the inner periphery of the members 4 and 5. Frequent contraction and expansion of the packer elements, however, causes the latter to work loose and become dislodged from the tool.

The invention comprises a threaded collar such as is illustrated in Figures 2, 3 and 4, and formed of two half sections A and B. Each of these sections are threaded as shown to engage with the threads on the part 2 or a similar member and each section includes an integrally-formed annular lip or rim 6. Each section has likewise a lug 7 and a recess 8 for interlocking one section with the other in assembling them, and a perforation and recess 9 and 10, respectively, for reception of a bolt 11 for securing the sections together, and for ease of assembly and connection.

The packer elements 3 are also provided with an annular recess or recesses 12 to receive the sections and this is clearly shown in Figure 1, the rim 6 of the device being flush with the outside surface of the members 3 and the outside of the packers when the sections are in workable position. Each end of each packer whether one or more is provided with one of the devices and holds the packers firmly in position. The two sections are first assembled on the packer, connected by the bolts, and then the packer is screwed into the tool, as will be obvious.

From the preceding it will be apparent that the device provides an arrangement for securely holding the packers in position on the tool and the collapsing and contraction and expansion of the packers will not cause them to become dislodged.

The invention is capable of some modification and alteration in keeping with the spirit thereof and such as would be within the scope and meaning of the appended claims.

What is claimed as new is:

1. In a sand-testing tool, means for removably locking a packer onto the sand testing tool, comprising the combination of an upper collar, a lower collar and a packer element, said upper collar having a lower threaded inner surface and an upper threaded inner surface of a smaller diameter; said lower collar having an upper threaded outer surface and a lower surface of larger diameter; an annular recess in the packer element wherein the lower collar is seated to bring the threaded outer surface of the lower collar flush with the outer surface of the packer element; said upper collar having its smaller threaded inner surface engaged with the sand testing tool and its lower threaded inner surface in threaded engagement with the threaded outer surface of the lower collar thereby locking the two collars together

with the lower collar firmly seated in said annular recess of the packer element.

2. In a sand testing tool, means for removably attaching a packer onto the sand testing tool as claimed in claim 1, and wherein said lower and larger surface diameter of the lower collar projects outwardly from its upper, outwardly-threaded surface and forms an abutment and seat for the lower end of said upper collar; said lower collar being in sections.

In testimony whereof I affix my signature.

FRANK HUX.