

Jan. 10, 1939.

F. D. HOBBS

2,143,349

CABLE TOOL JAR

Filed March 23, 1937

Fig. 1.

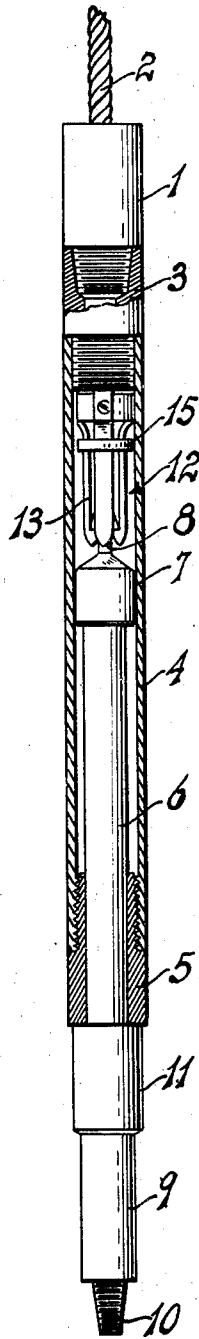


Fig. 2.

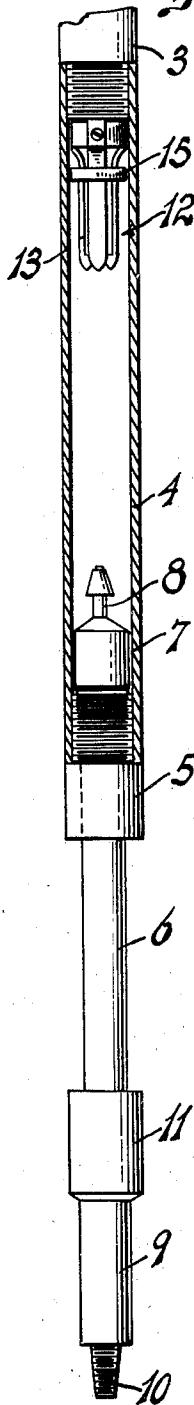


Fig. 3.

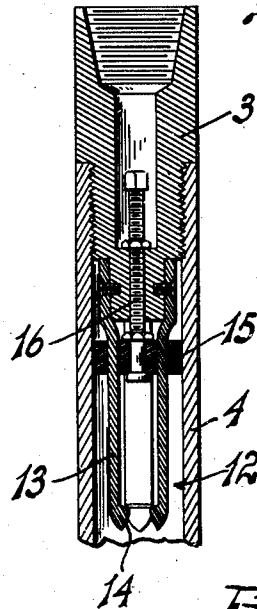


Fig. 4.

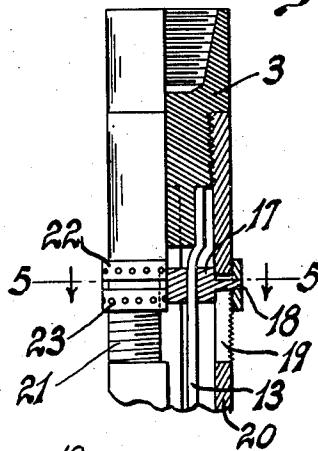
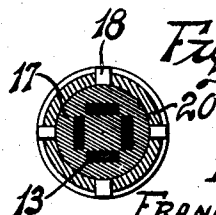


Fig. 5.



INVENTOR.
FRANK D. HOBBS.

BY.

H. A. Duckman
ATTORNEY.

UNITED STATES PATENT OFFICE

2,143,349

CABLE TOOL JAR

Frank D. Hobbs, Huntington Park, Calif., assignor to Sol Core Barrel Co., Compton, Calif., a partnership composed of Art Sol and Lewis A. Larson

Application March 23, 1937, Serial No. 132,534

4 Claims. (Cl. 255—27)

This invention relates to a cable tool jar, particularly applicable to oil field use and consists primarily of a jar which is run on a cable and in conjunction with certain tools or appliances used in the drilling or production of oil wells.

An object of my invention is to provide a novel cable tool jar which is adapted to run in conjunction with various drilling and production tools without interfering with the operation of said tools.

Another object is to provide a novel cable tool jar of the character stated, which is simple in construction and effective in operation.

Still another object is to provide a novel means of varying the tension under which the tool is placed prior to its release to strike a blow.

Still another object is to provide a novel cable tool jar which is adapted to be repeatedly set and released for impact without requiring the withdrawal of the tool from the well.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

Figure 1 is a partial longitudinal sectional view of the jar in telescoped position.

Figure 2 is a view similar to Figure 1, showing the parts in extended position.

Figure 3 is a fragmentary longitudinal sectional view of the upper part of the jar, showing the gripping fingers.

Figure 4 is a fragmentary and partial longitudinal sectional view of the jar showing a modified form of finger adjusting means.

Figure 5 is a sectional view taken on line 5—5 of Figure 4.

Referring more particularly to the drawing, numeral 1 indicates a rope or cable socket to which the cable 2 is attached in the usual and well known manner. The socket 1 screws onto the sub 3 and depends therefrom. An impact nut 5 screws onto the lower end of the sleeve 4 and the purpose of this impact nut will be further described. A mandrel 6 extends into the sleeve 4, through the nut 5. A head 7 is preferably integrally formed on the upper end of the mandrel 6. A pin 8 rises from the head 7 and is preferably integral with the head. This pin is releasably engaged by a gripping means which will be further described. On the lower end of the mandrel 6, I provide a joint 9, which is held fixedly attached to the mandrel or is integral therewith. The threaded pin 10 on the lower end of the joint, screws into the tool (not shown).

which is run in conjunction with the jar. A shoulder 11, on the upper end of the jar is engaged by the nut 5 and limits the downward movement of the nut and sleeve 4. The releasable engaging means 12, comprises a plurality of spring fingers 13 which are attached to the lower end of the sub 3 and are adapted to grip the head of the pin 8, as shown in Figure 1. Each finger is provided with an inwardly extending shoulder 14 on the bottom thereof, for the purpose of gripping the head of the pin 8. An upward pull on the cable tool will cause the fingers 13 to spring outwardly, thus releasing the pin 8 and permitting the sleeve 4 and nut 5 to move upwardly until the nut strikes the head 7, thus causing a jar or impact on the joint 9 for the purpose of loosening the tool attached to said joint. The amount of pull necessary to release the fingers 13 is varied by means of a ring 15 which encircles the fingers and by moving this ring downwardly, a successively greater pull will be required to release the fingers from the pin 8. A bolt 16 is revolvably mounted in the ring 15 and is threaded through the sub 3. Thus it will be evident that by rotating the bolt 16, the ring 15 will be moved up or down to provide the proper amount of pull in the cable before the fingers release the pin 8. The greater the pull on the cable 2, before the fingers 13 release the pin 8, the greater will be the blow of the nut 5 against the head 7. A modified form of finger tensioning means is shown in Figures 4 and 5. The ring 17 through which the fingers 13 extend, is provided with a plurality of lugs 18, each of which extends through a longitudinal slot 19, in the outer sleeve 20. The sleeve is threaded as shown at 21 and upper and lower nuts 22 and 23 screw onto the sleeve and engage the lugs 18, thus enabling the ring 17 to be adjusted longitudinally on the fingers.

Having described my invention, I claim:

1. A cable tool jar comprising a cable socket, a sleeve depending from the socket, an impact nut on the lower end of the sleeve, a mandrel extending through the nut and into the sleeve, coupling means on the lower end of the mandrel, attachable to a tool, a head on the upper end of the mandrel against which said nut is adapted to strike, a plurality of spring fingers mounted within the sleeve and adapted to engage said pin, said fingers being releasable from the pin upon an upward pull being exerted on the sleeve, and tension adjusting means engaging the spring fingers whereby a variable pull is exerted to release the fingers from the pin.

2. A cable tool jar comprising a cable socket, a

sleeve depending from the socket, an impact nut on the lower end of the sleeve, a mandrel extending through the nut and into the sleeve, coupling means on the lower end of the mandrel, attachable to a tool, a head on the upper end of the mandrel against which said nut is adapted to strike, a plurality of spring fingers mounted within the sleeve and adapted to engage said pin, said fingers being releasable from the pin upon an upward pull being exerted on the sleeve, a ring encircling the fingers and slidable thereon and adjusting means engaging the ring whereby said ring is moved longitudinally of the fingers.

3. A cable tool jar comprising a cable socket, a sleeve depending from the socket, an impact nut on the lower end of the sleeve, a mandrel extending through the nut and into the sleeve, coupling means on the lower end of the mandrel, attachable to a tool, a head on the upper end of the mandrel against which said nut is adapted to strike, a plurality of spring fingers mounted within the sleeve and adapted to engage said pin, said fingers being releasable from the pin upon

an upward pull being exerted on the sleeve, a ring encircling the fingers and slidable thereon, a threaded bolt mounted in the ring, said bolt being adapted and arranged to move the ring longitudinally of the fingers.

4. A cable tool jar comprising a cable socket, a sleeve depending from the socket, an impact nut on the lower end of the sleeve, a mandrel extending through the nut and into the sleeve, coupling means on the lower end of the mandrel, attachable to a tool, a head on the upper end of the mandrel against which said nut is adapted to strike, a plurality of spring fingers mounted within the sleeve and adapted to engage said pin, said fingers being releasable from the pin upon an upward pull being exerted on the sleeve, a ring slidably mounted on the fingers, said sleeve having a plurality of slots cut therein, lugs on the ring projecting through each of the slots and adjusting nuts screwing on the sleeve against the lugs whereby said ring is adjusted longitudinally of the fingers.

FRANK D. HOBBS.