Oct. 20, 1936. H. C. LONG 2,058,331

SUCKER ROD GUIDE PARAFFIN CUTTER

Filed March 9, 1936

Fig. 1.

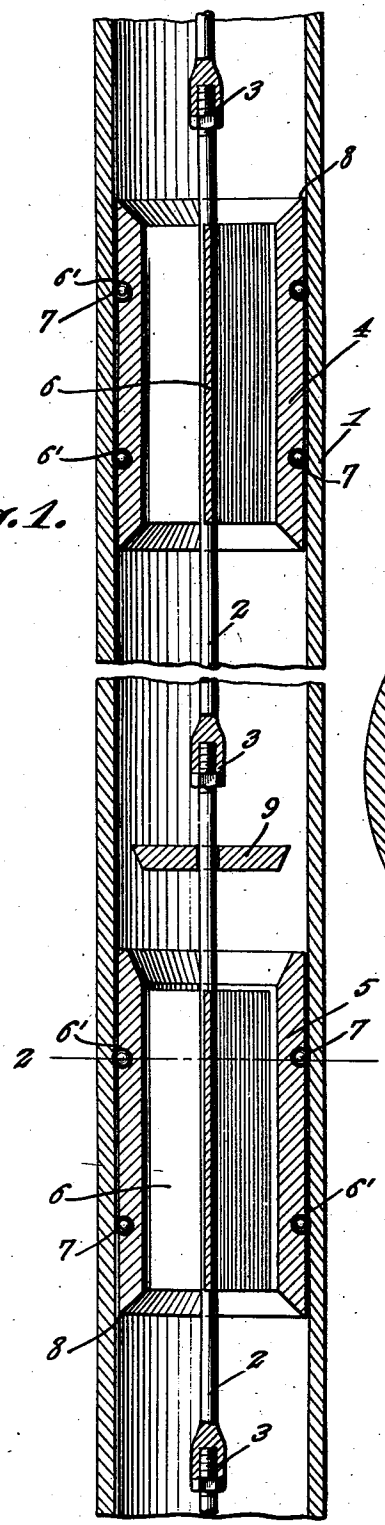
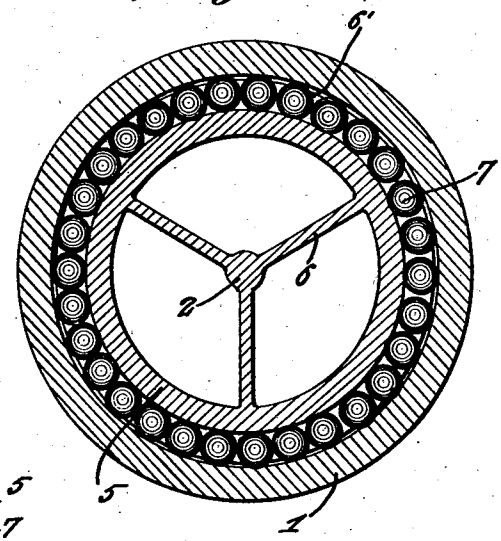


Fig. 2.



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SUCKER ROD GUIDE PARAFFIN CUTTER

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2 Claims. (Cl. 255—28)

This invention relates to well tube cleaners, and has for the primary object the provision of a device of this character which will under normal pumping operations in a well efficiently guide the sucker rod of the pump to prevent bending or injury to the sucker rod and which will efficiently remove foreign matter from the well casing when the sucker rod is withdrawn from the well, obviating the customary practice of first removing the sucker rod and then the well casing in order to clean the latter.

With these and other objects in view, this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawing, in which

Figure 1 is a fragmentary vertical sectional view illustrating a well tube casing and sucker rod equipped with my invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Referring in detail to the drawing, the numeral 1 indicates a well tube casing adapted to be sunk in a well and operating in the casing is a sectional sucker rod 2, the sections thereof being coupled together, as shown at 3. Upper and lower cylinders 4 and 5 are secured to the sucker rod by spiders 6. The spiders extend the full length of the cylinders and are formed integrally with the sucker rod and with the cylinders. Ball races or grooves 6' are formed in the outer faces of the cylinders and receive anti-friction balls 7 that contact the walls of the well tube casing and thereby permit the cylinders to move with the sucker rod with a minimum amount of friction with the well tube casing. The cylinders sliding against the well tube casing during the reciprocation of the sucker rod will efficiently guide the sucker rod and reduce to a minimum the chances of bending or injuring the sucker rod.

It is preferable that the lower cylinder 5 be located in the lower portion of the well with the upper cylinder positioned some distance in the well above the lower cylinder. Each cylinder has its ends beveled to define annular cutting edges 8 prevented from coming in direct contact with the walls of the well tube casing by the anti-friction balls.

The section of the sucker rod to which the lower cylinder 5 is secured has slidably mounted thereon above said cylinder 5 a valve element 9. The valve element may seat in the upper beveled end of the cylinder 5 when there is weight or back pressure upon said valve element. However, during the upward flow of liquid through the well tubing, the valve element 9 will be disengage from the cylinder 5 and permit said liquid to flow freely upwardly. Also the spiders 6 will not materially retard the upward flow of the liquid.

In oil wells paraffin accumulates on the walls of the well tubing principally near the upper portion of the well and over a period of time will accumulate to such an extent that the well tube casing becomes substantially clogged. To remove the accumulated paraffin, the sucker rod is withdrawn from the well casing, carrying therewith the cylinders 4 and 5, the upper cylinder 4 acting to scrape or dislodge the paraffin and the dislodged paraffin engaging the valve 9 brings about seating of the said valve 9 with the upper end of the cylinder 5. This prevents the dislodged paraffin from descending to the bottom of the well and due to the upward movement of the cylinders with the sucker rod from the well tubing will extract the dislodged paraffin, thereby obviating the customary practice of entirely removing from the well the well tube casing in order to cleanse the same of foreign matter or paraffin.

Having described the invention, I claim:

1. A sucker rod guide and well tube cleaner comprising spaced cylinders having a sucker rod extending therethrough and adapted to move with said sucker rod, means connecting the cylinders to the sucker rod, cutting edges formed on the ends of the cylinders to remove foreign matter from walls of a well tubing, anti-friction means carried by the cylinders and contacting walls of the well tubing, and a valve element slidable on the suction rod for engaging and closing one end of one of the cylinders when subjected to the weight of foreign matter and during the down stroke of the sucker rod.

2. A sucker rod guide and well tube cleaner comprising spaced cylinders having a sucker rod extending therethrough, spiders integral with the sucker rod and said cylinders to cause the latter to move with the sucker rod and relative to a well tubing, anti-friction balls carried by the cylinders and contacting walls of the well tubing, cutting edges formed on the ends of the cylinders and lying in close proximity to the walls of the well tubing and prevented from contacting therewith by the anti-friction balls, and a valve element slidable on the sucker rod and adapted to close one end of one of the cylinders when subjected to weight thereon of either foreign matter or liquid within the well tubing.

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