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2,506,530

PARAFFIN KNIFE

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Fig. 1.

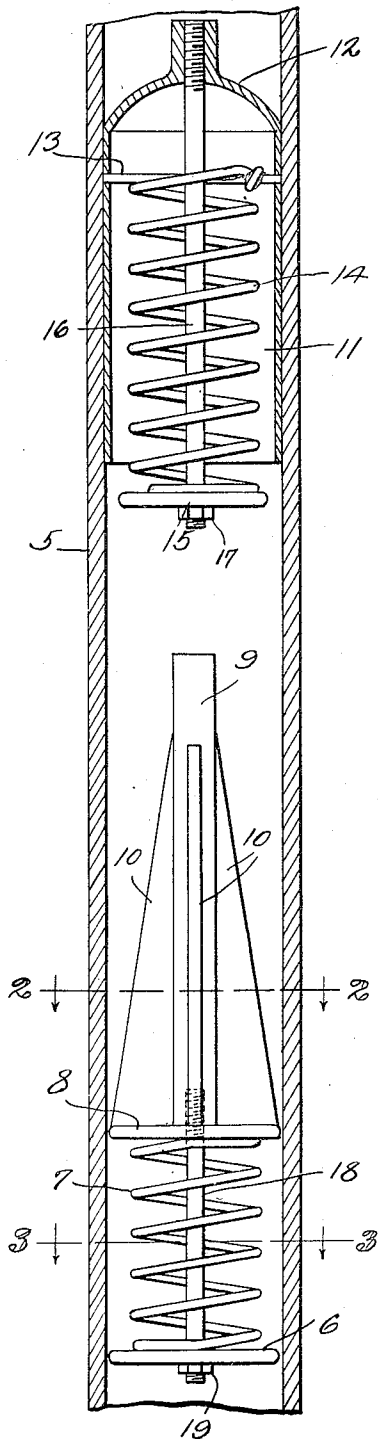


Fig. 2.

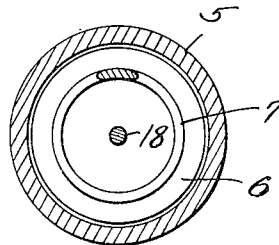
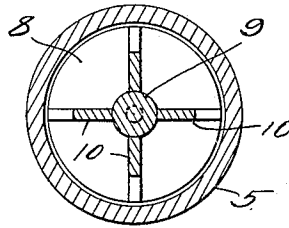


Fig. 3.

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PARAFFIN KNIFE

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2 Claims. (Cl. 166—18)

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This invention relates to a knife or scraper designed for use in connection with oil wells, the primary object of the invention being to provide means within the tubing of an oil well, which will move longitudinally of the tubing during the flowing operation, thereby removing paraffin from the wall of the tubing, maintaining the tubing free of foreign matter to enable oil to flow freely.

Another object of the invention is to provide a device of this character which may be readily and easily installed without the necessity of making alterations in the flow construction or tubing.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing:

Figure 1 is a longitudinal sectional view through a well tubing section, illustrating paraffin removing devices constructed in accordance with the invention.

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

Figure 3 is a sectional view taken on line 3—3 of Figure 1.

Referring to the drawing in detail, the reference character 5 indicates a section of well tubing, illustrating a device constructed in accordance with the invention, as positioned therein.

As shown, the device comprises a disc 6 which is of a diameter to move within the tubing, in proximity to the inner surface of the tubing to scrape formations of paraffin which ordinarily collect on the inner surface of the well tubing, from the tubing.

Connected with the disc 6 is a coiled spring 7 which is of the expansible type, the spring having its upper end connected with the disc 8, to which the rod 9 is connected at a point centrally of the disc 8.

Fins 10 rise from the disc 8, and are placed equal distances apart, the outer edges of the fins being inclined inwardly towards the upper end of the rod 9, providing guides for the device as it moves within the well tubing.

Operating in conjunction with the discs 6 and 8 is a nipple 11, which has its open end disposed downwardly, the upper end being closed

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by the dome 12. Extending transversely through the nipple 11 is a pin 13 to which the upper end of the coiled spring 14 is connected, the lower end of the coiled spring normally extending below the lower end of the nipple where it is connected with the disc 15. This disc 15, together with the spring 14, acts as a cushioning means for the member 11 during the operation of the device, and is held stationary at the top of the tubing 5.

The rod 16 is secured to the dome 12 and extends through the spring 14 and disc 15 which is slidable on and secured on the rod by the nut 17.

The spring 7 also provides a cushioning means for the knife or disc 6, to cushion the movement of the device as it strikes the bottom of the well during each flow of the well.

The disc 6 is held in position by the rod 18 which is shown as extending from the rod 9, the lower end of the rod 18 being extended through the disc 6 which is slidable on the rod and secured on the rod by the nut 19.

In the operation of the device it will be seen that with flow, the devices will be moved longitudinally of the tubing to accomplish the purpose of the invention.

Having described the invention, what is claimed is:

1. The combination with the tubing of an oil well, of a paraffin removing device comprising a body portion including a rod, a disc secured to the lower end of the rod, guide fins secured to the rod and disc, the guide fins extending longitudinally of the rod, a coiled spring secured to the disc and extending downwardly therefrom, a scraping disc secured to the opposite end of the spring and adapted to scrape material from the wall of the tubing in which the scraper moves, said discs being perpendicular to the axis of the rod, said body portion being movable longitudinally of the tubing with the flow of oil through the tubing.

2. The combination with the tubing of an oil well, of a paraffin removing device comprising a body portion embodying a rod, a disc secured to the lower end of the rod, a second rod removably connected with the first-mentioned rod below the disc, a coiled spring secured to the disc and surrounding the second-mentioned rod, a scraping disc slidably mounted on the lower end of the second-mentioned rod and being connected with one end of the spring to move therewith, guiding fins formed on the first-mentioned rod and having their lower ends connected with

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said disc, said discs being perpendicular to the axis of said rod, and said scraping disc adapted to scrape material from the wall of the tubing in which the scraper moves with the flow of oil through the tubing.

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REFERENCES CITED

The following references are of record in the file of this patent:

4

UNITED STATES PATENTS

Number	Name	Date
1,814,752	Griffin	July 14, 1931
1,989,035	Blum	Jan. 22, 1935
2,058,825	Rallet et al.	Oct. 27, 1936
2,184,393	Luccous	Dec. 26, 1939
2,203,966	Otis	June 11, 1940
2,214,982	Wylie	Sept. 17, 1940
2,326,528	Festerwan et al.	Aug. 10, 1943