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D. J. McDUFFIE

2,521,076

PARAFFIN CUTTER

Filed June 23, 1947

Fig. 1.

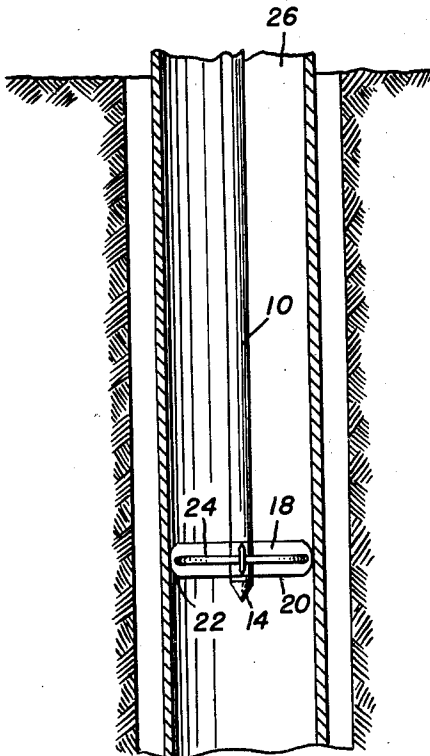


Fig. 3.

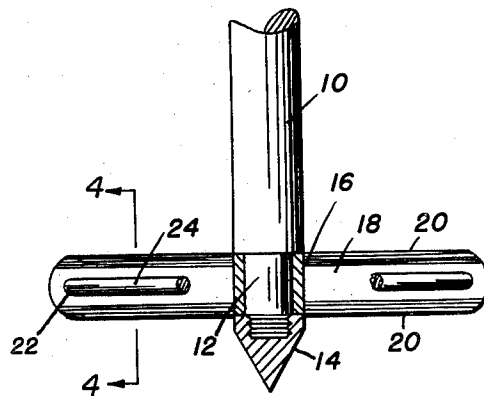


Fig. 4.

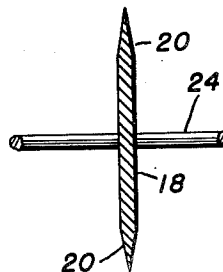
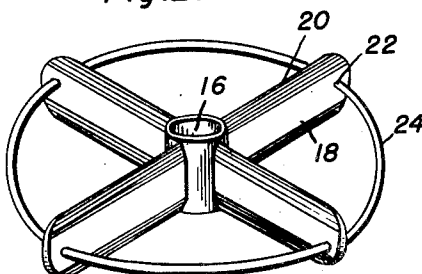


Fig. 2.



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PARAFFIN CUTTER

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7 Claims. (Cl. 166—18)

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This invention relates to new and useful improvements in paraffin cutters and the primary object of the present invention is to provide a device for efficiently removing paraffin from the inner walls of well casings and the like.

Another important object of the present invention is to provide a paraffin cutter including a novel and improved cutter blade means that is quickly and readily replaceable without appreciable expense.

A further object of the present invention is to provide a paraffin cutter for well casings so designed as to be operated as the fluid is being forced through the well casings without restricting the normal flow of the well fluid through the casings.

A still further aim of the present invention is to provide a paraffin cutter that is simple and practical in construction, strong and reliable in use, relatively inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view showing the present invention applied to a well pipe and with parts of the well pipe and supporting shaft for the present invention broken away and shown in section;

Figure 2 is a perspective view of the paraffin cutter constructed in accordance with the present invention;

Figure 3 is a fragmentary side elevational view of the supporting shaft, the present invention applied thereon and with parts of the shaft and cutter broken away and shown in section; and

Figure 4 is an enlarged vertical sectional view taken substantially on the plane of section line 4—4 of Figure 3.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents a driving shaft provided with a reduced terminal portion 12 having its outer end externally threaded to engageably receive a preferably conical nut 14.

Removably engaging portion 12 is a sleeve or hub 16 that is fixedly secured to said shaft by the adjustment of nut 14. Integrally formed with the hub and projecting outwardly therefrom are radial arms or spokes 18 which are spaced equi-

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distant about the hub and having their ends terminating in a circular path. The free terminal portions of the spokes are preferably rounded and the longitudinal edges of the spokes are beveled as at 20.

Adjacent each free end of the spokes 18 are provided apertures 22 through which extends an annular cutting blade 24 of resilient material and preferably circular in cross section.

In practical use of the device, the driving shaft is inserted into a well casing or the like 26 and the shaft 10 may rotate, reciprocate, or both, depending upon the desire of the user.

It has been found, that by providing a cutter blade 24 which is circular in cross section, the paraffin on the inner walls of the well casing can be efficiently removed without adhering to the periphery of the cutter blade. Also by providing such a device wherein the spokes and cutter blades are of such a relatively small area in comparison to the diameter of the well casing, the fluid forced through the casing is not restricted in an appreciable amount to interfere with the normal use of the casing, so that the cutter may be used during the normal use of the well casing.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A device for scraping paraffin from the inner walls of a well casing without restricting the normal flow of well fluid through the casing, said device comprising a sleeve, a plurality of circumferentially spaced radial arms connected to and projecting from said sleeve and having upper and lower bevelled cutting edges and rounded outer edges, said arms having apertures therein adjacent but inwardly a substantial distance from the rounded edges of said arms, and a cutter ring embracing said sleeve and received in the apertures.

2. The combination of claim 1 wherein said cutter ring is disposed in a plane spaced between the upper and lower cutting edges of said arms.

3. The combination of claim 1 wherein said

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cutter ring is circular in cross-section to restrict paraffin from adhering thereto.

4. A paraffin scraper for well casing comprising a sleeve removably secured on a driving shaft, radial spokes connected to and projecting outwardly from said sleeve and disposed perpendicular to the shaft, and an annular resilient cutter blade carried by said spokes adjacent the outer ends of the spokes, said spokes having rounded outer end portions extending outwardly beyond said annular cutter blade for bearing against the inner periphery of a well casing.

5. The combination of claim 4, wherein said spokes include upper and lower longitudinally extending beveled cutting edges.

6. The combination of claim 4, wherein said cutter is circular in cross-section.

7. A paraffin scraper for well casings comprising a hub removably secured on a driving shaft, radial spokes connected to and projecting out-

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wardly from said hub and equally circumferentially spaced about said hub, and an annular cutter blade of resilient material carried by said spokes adjacent the outer ends of said spokes, the outer ends of said spokes extending outwardly beyond said annular cutter blade and being rounded to provide convex cutting edges.

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