June 3, 1947. G. KLEIDERLEIN 2,421,564

SUCKER ROD SCRAPER

Filed Feb. 28, 1944

Fig. 1.

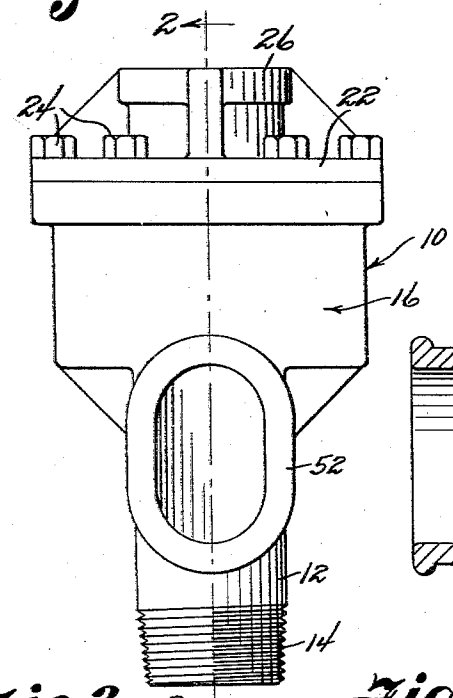


Fig. 2.

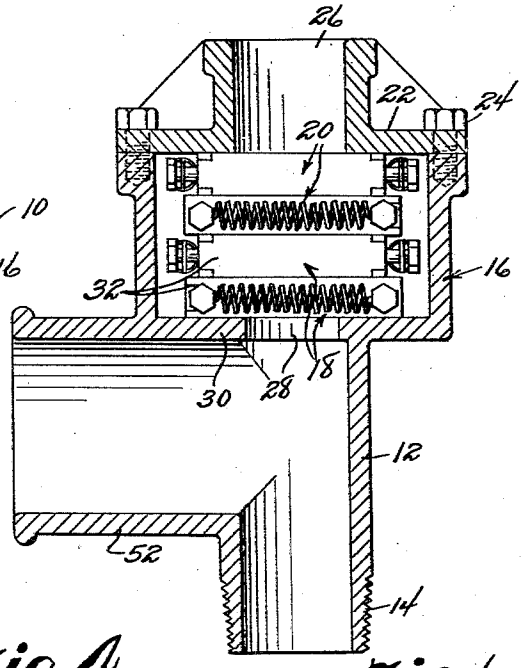


Fig. 3.

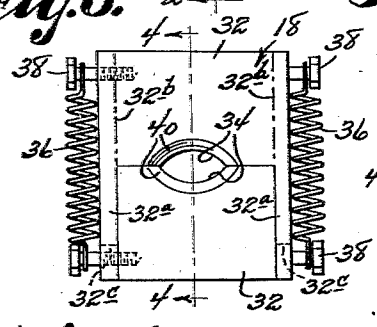


Fig. 4.

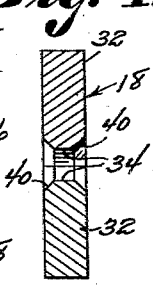


Fig. 6.

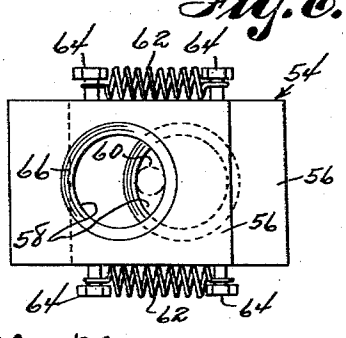


Fig. 5.

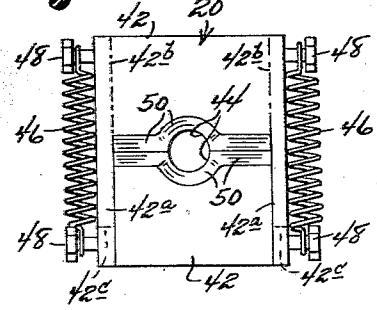
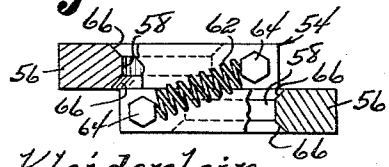


Fig. 7.



George Kleiderlein INVENTOR.

BY

Victor J. Evans & Co.

ATTORNEYS

Patented June 3, 1947 2,421,564

UNITED STATES PATENT OFFICE

2,421,564

SUCKER ROD SCRAPER

George Kleiderlein, Bradford, Pa.

Application February 28, 1944, Serial No. 524,258

2 Claims. (Cl. 166—16)

1

My invention relates to the removal of paraffin from oil well sucker rods, and has among its objects and advantages the provision of an improved scraper.

In the accompanying drawings:

Figure 1 is an elevational view of a scraper in accordance with my invention.

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

Figure 3 is a face view of a scraper plate assembly designed for removing paraffin from the box and pin parts of the sucker rod.

Figure 4 is a sectional view along the line 4—4 of Figure 3.

Figure 5 is a face view of a scraper plate assembly designed to remove paraffin from the sucker rod.

Figure 6 is a face view of a scraper plate assembly which may be employed for removing scale and the like from old rods to prevent such accumulations from breaking off and working down to the bottom of the well casing and causing damage to the working barrel and the valve, and

Figure 7 is a longitudinal sectional view of Figure 6.

In the embodiment of the invention selected for illustration, I make use of a housing 10 having a tubular part 12 provided with a threaded end 14 for attachment to the upper end of the well casing or tubing. The tubular part 12 has communication with a box 16 formed integrally therewith and which serves as a housing for nested scraper assemblies 18 and 20. These assemblies are held in the box 16 by a cover 22 bolted at 24 to the box. This cover is provided with a tubular part 26 arranged coaxially with the part 12 and the opening 28 in the bottom 30 of the box 16. The sucker rod to be cleaned extends through the part 12, the opening 28, the assemblies 18 and 20 and the tubular part 26.

Figures 3 and 5 illustrate one each of the assemblies 18 and 20, respectively. The assembly 18 comprises two plates 32 of the same size and thickness. Each plate includes a recess 34, and the two recesses are arranged face to face to provide an opening in the assembly 18 through which the box and pins may pass.

Tension springs 36 are attached to bolts 38 threaded into the plates 32 to yieldingly hold the plates in normal edge to edge engagement, although the plates may spread to accommodate the box and pin formations as the sucker rod is being pulled through the assembly. Both plates 32 are angled at 40 on both sides about the recesses 34 so that the recesses are formed with cam surfaces which permit the sucker rod structure to be pulled through the assembly without obstruction.

2

The plates 32 of the assembly 18 are connected together for sliding movement one with relation to the other by bars 32*a* which are located at the side edges of the plates and which are equal in thickness to the plates. The bars 32*a* are welded, as at 32*b*, to the side edges of one of the plates 32, and they are provided with slots 32*c* for the reception of the bolts 38 of the other plate 32.

In Figure 5, the assembly 20 comprises two plates 42 of equal size and thickness, each plate being provided with a semicircular recess 44, which recesses are so arranged as to provide a circular opening through the assembly. Tension springs 46 are attached to bolts 48 threaded in the plates 42 for yieldingly holding the plates in edge to edge relationship. The meeting edges of the plates 42 are beveled at 50 on both sides to provide angular formations which eliminate interfering obstructions with respect to passage of the sucker rod structure through the assembly. The plates 42 of the assembly 20 are also connected together for sliding movement by bars, the bars being designated 42*a*, the welded connection with one of the plates 42*b* and the bolt receiving slots 42*c*.

In operation, the plate assemblies 18 are assembled in the box 16 in such manner as to place the meeting edges of one assembly at right angles to the meeting edges of the other assembly. The assemblies 20 are also arranged in this manner, both with respect to themselves and the assembly 20 adjacent the contacting assembly 18.

While the assemblies 18 and 20 are retained in the box 16 by reason of the cover 22, the assemblies fit sufficiently loose to permit separation of the plates one from the other in the respective assemblies. However the plates in the respective assemblies are yieldingly pressed against the sucker rod structure so as to cause the edges of the recessed formations to remove paraffin accumulations from the sucker rod. A tubular extension 52 projects laterally from the part 12 to provide a side opening through which the cleanings may be removed.

In Figures 6 and 7, the plate assembly 54 comprises two plates 56 overlapping face to face and each provided with a circular opening 58. The sucker rod 60 extends through the openings 58, and the plate edges defining the openings are yieldingly pressed against the sucker rod by tension springs 62, which are connected with bolts

64 threaded into the respective plates 56. Beveled faces 66 are provided about the opening defining edges.

Assemblies 54 may be arranged in the box 16 in the same manner as the assemblies 18 and 20. All the assemblies are easily placed in or removed from the box 16 by merely detaching the cover 22.

Without further elaboration, the foregoing will so fully explain my invention, that others may, by applying current knowledge, readily adapt the same for use under various conditions of service.

I claim:

1. A well rod cleaner consisting of a housing adapted to be attached to well tubing and through which is reciprocated a well rod, a plurality of superimposed cleaner plate assemblies loosely mounted in said housing and adapted to scrape from the surfaces of said well rod any accumulation of foreign matter, each said cleaner plate assembly consisting of a pair of relatively movable plate members arranged to abut each other along adjacent edges thereof, bars secured to parallel sides of one of said plate members and extending beyond said member to slidably engage parallel sides on the other of said plate members, slots in the ends of the extending portions of said bars, bolt means secured to the parallel sides of said other of said plate members and slidably received within the slots in said bars, spring means secured to said bars and to said bolt means for yieldingly biasing said plate members toward each other for engagement along said adjacent edges, each plate member having a recess in said adjacent edge, said recesses facing each other whereby when said plate members are abutting each other at said corresponding edges said recesses form a single opening through which passes the well rod in contact with the sides of said recesses whereby foreign matter is removed from the well rod surfaces.

2. A well rod cleaner consisting of a housing adapted to be attached to well tubing and through which is reciprocated a well rod, a plurality of superimposed cleaner plate assemblies loosely mounted in said housing and adapted to scrape from the surfaces of said well rod any accumulation of foreign matter, each said cleaner plate assembly consisting of a pair of relatively movable plate members arranged to abut each other along adjacent edges thereof, bars secured to parallel sides of one of said plate members and extending beyond said member to slidably engage parallel sides on the other of said plate members, slots in the ends of the extending portions of said bars, bolt means secured to the parallel sides of said other of said plate members and slidably received within the slots in said bars, spring means secured to said bars and to said bolt means for yieldingly biasing said plate members toward each other for engagement along said adjacent edges, each plate member having a recess in said adjacent edge, said recesses facing each other whereby when said plate members are abutting each other at said adjacent edges said recesses form a single opening through which passes the well rod in contact with the sides of said recesses, whereby foreign matter is removed from the well rod surfaces, each said plate assembly being bodily and angularly displaced substantially 90 degrees relative to an adjacent plate assembly.

GEORGE KLEIDERLEIN.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
2,026,036	Head	Dec. 31, 1935
1,692,302	Hessemer	Nov. 28, 1938
1,198,894	Cote	Sept. 19, 1916
754,209	Ferguson	Mar. 8, 1904
2,213,923	Stuart et al.	Sept. 3, 1940