Dec. 7, 1948. C. CONLEY 2,455,736

WELL CYLINDER VALVE PULLER

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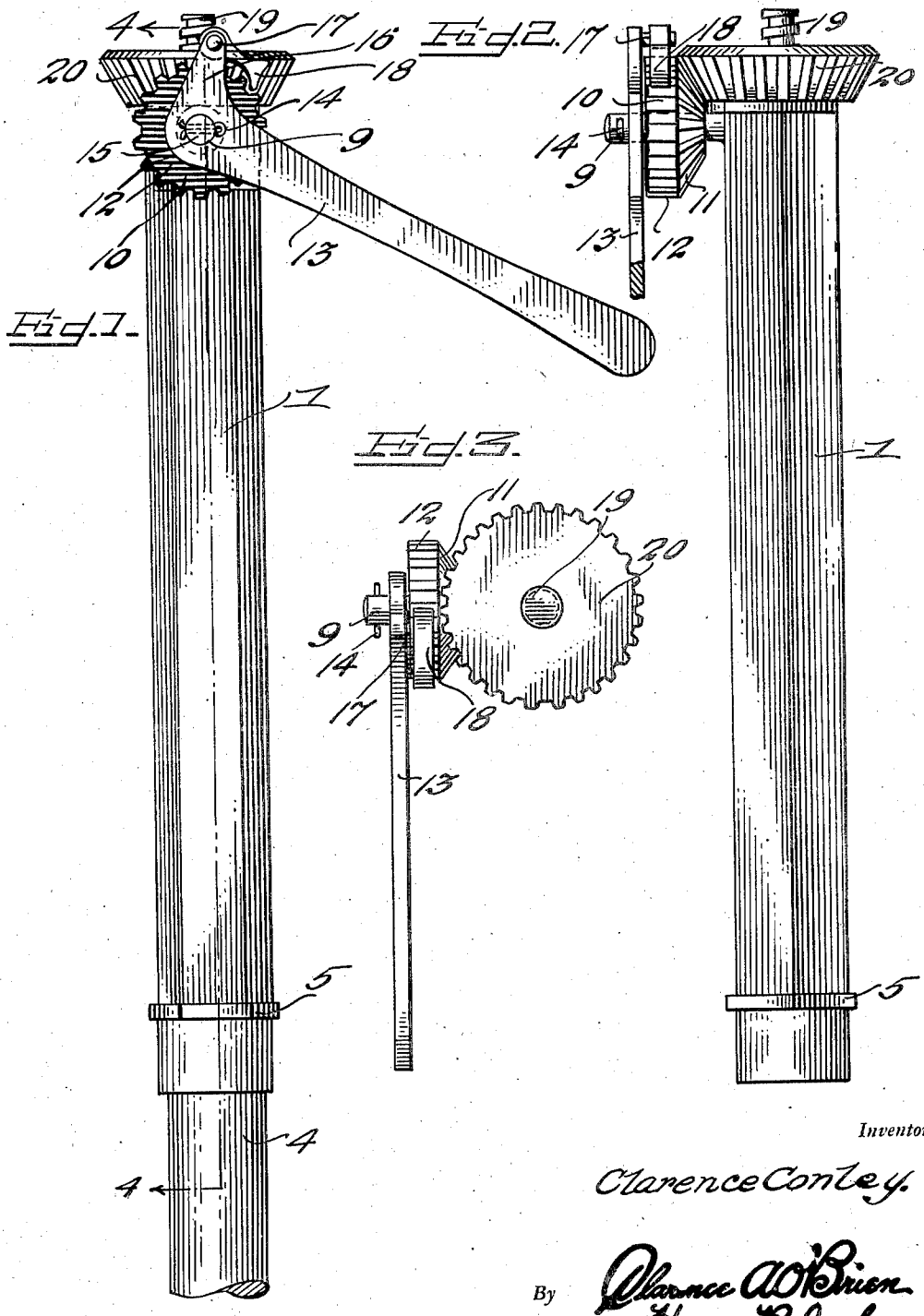


Fig. 1.

Fig. 3.

Fig. 2.

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Fig. 4.

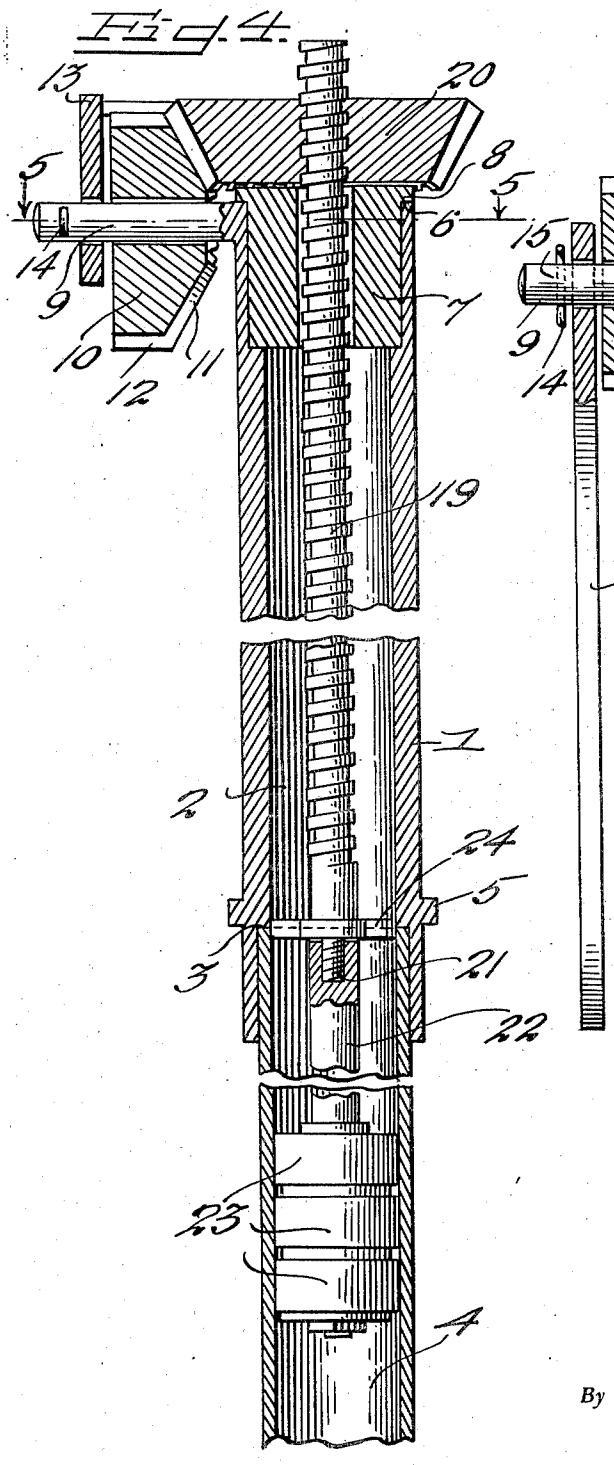
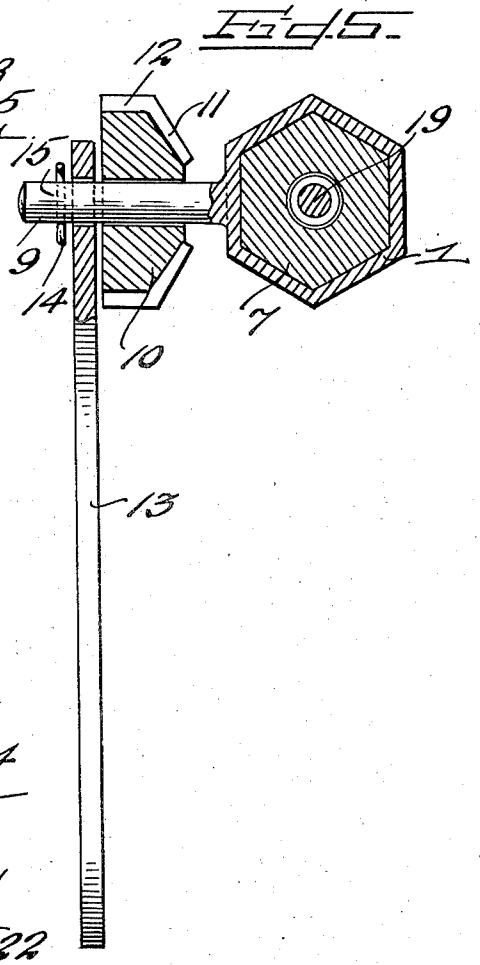


Fig. 5.



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WELL CYLINDER VALVE PULLER

Clarence Conley, Adamsville, Tex.

Application May 7, 1946, Serial No. 667,919

1 Claim. (Cl. 254—29)

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This invention relates to improvements in well cylinder valve pullers.

An object of the invention is to provide an improved well cylinder valve puller which will be adapted to seat upon the upper end of a well pipe and to be secured to the plunger or sucker rod and manipulated to pull the plunger or sucker rod from the pipe so that the same may be repaired.

Another object of the invention is to provide an improved screw or ratchet operated jack mechanism for positioning upon the upper end of a well pipe and for connecting with the plunger or sucker rod whereby operation of the jack will remove the plunger or sucker rod from the well pipe.

A further object of the invention is to provide an improved ratchet or screw operated well cylinder valve puller which will be secured upon the upper end of a well casing and attached to the plunger or sucker rod whereby the same may be pulled from the casing upon the operation of the said ratchet or screw jack.

Another object of the invention is to provide an improved well cylinder valve puller which will be highly efficient in operation and relatively inexpensive to manufacture and produce.

Another object of the invention is to provide a portable well cylinder valve puller comprising a tubular body adapted to be seated upon the upper end of a well casing or pipe and to support a screw member which will be secured to the plunger or sucker rod of the pump, together with interconnected gearing which will be either operated as a screw jack or a ratchet jack for lifting the plunger or sucker rod with the valve from a well casing.

Other objects will appear as the description proceeds.

In the accompanying drawings which form a part of this application,

Figure 1 is a side elevation of the improved well cylinder valve puller;

Figure 2 is a side elevation of the improved well cylinder valve puller shown at right angles to the showing in Figure 1;

Figure 3 is a plan view of the improved well cylinder valve puller;

Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 1; and

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

Like characters of reference are used throughout the following specification and the accompanying drawings to designate corresponding parts.

In carrying out the invention, there is provided a hexagonal tubular body 1 formed with a centrally disposed bore 2, and an interiorly formed annular seat 3 adjacent its lower end, which will

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be adapted to seat upon the upper end of the well casing or pipe 4. An exteriorly formed nut 5 is formed integrally about the outer surface of the body 1 adjacent its lower end, whereby the body may be engaged by a suitable wrench (not shown) for rotating the same when desired.

The interiorly formed annular seat 6 is formed adjacent the upper end of the tubular body 1 and is adapted to receive the hexagonal nut 7, which is in turn provided with the hexagonal flange 8 on its upper end adapted to overlie the upper end of said body 1.

A laterally extending rod or stud 9 is formed integrally with the upper end of the tubular body 1 and is adapted to loosely support the bevel gear 10 upon it which is not only provided with the bevel gear teeth 11, but also with the peripheral gear teeth 12.

The bell crank operating lever or handle 13 is also loosely mounted upon the laterally extending rod or stud 9 to the outside of said bevel gear 10, and is held thereon by means of the cotter pin 14 which extends through an aperture 15 formed transversely through the outer end of said rod or stud. The short arm of the bell crank operating lever or handle is designated by the reference numeral 16 and supports the stop shaft 17, which in turn supports the pivoted ratchet tooth or dog 18, which when turned to one side will cause the rotation of the gear wheel in one direction, and when the dog is turned to the opposite side the gear wheel will be operated in a reverse direction.

The elongated jack screw 19 extends loosely through the nut 7 and is threaded through the bevel gear 20 extending across the upper end or surface of the said nut 7, and is intermeshed with the bevel gear 10, whereby rotation of the bevel gear 10 will rotate the bevel gear 20, which in turn will cause the elongated jack screw to be either raised or lowered, depending upon the direction of rotation of said bevel gear 20. The lower end of the jack screw 19 is reduced and is externally threaded as at 21, and is adapted to be threaded into the internally threaded socket in the upper end of the plunger or sucker rod 22 upon which the valve packing 23 is supported. A guide washer 24 is placed about the lower end of the jack screw 19 to serve in forming a bearing as the plunger or sucker rod is withdrawn or replaced.

Heretofore, it has been necessary to install a complicated mechanism including a block and fall and a derrick whereby the sucker rod or plunger may be pulled from a well casing or pipe, but with the improved apparatus hereinbefore described and illustrated in the accompanying drawings, it will be seen that the matter of pulling a well cylinder valve will only be a matter of minutes at the most.

As before mentioned, the pivoted dog will be turned to one side for operating the jack screw in one direction to pull the plunger or sucker rod from the well casing, and the dog or ratchet will be turned to the other side and operated to screw the jack screw in the opposite direction for replacing the plunger or sucker rod.

From the foregoing description, it will be apparent that there has been devised a highly efficient form of well cylinder valve puller, which will be relatively inexpensive to manufacture and produce.

While the preferred embodiment of the instant invention has been illustrated and described, it will be understood that it is not intended to limit the scope of the invention thereto, as many minor changes in detail of construction may be resorted to without departure from the spirit of the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

A well cylinder valve puller including a tube detachably seated on a well casing, said tube having a depending retaining collar adapted to engage around the upper end of the casing and an upwardly facing annular shoulder adjacent the upper end thereof, a supporting block having a central bore received in the upper end of the tube and seated on said shoulder and having a lateral flange on the upper end thereof received on the upper end of the tube, a jack screw reciprocably mounted in said bore and extending into the well casing, a coaxially reduced threaded inner end on said screw for positioning in a sucker rod in the well casing, a bevel gear rotatably supported on said supporting block and having a center threaded bore for operatively receiving the jack screw, a stud extending laterally from the upper end of the tube, a bevel gear complementary to the bevel gear on the block rotatably received on said stud and ratchet means for rotating said gears to actuate said jack screw.

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
736,991	Matthews	Aug. 25, 1903
931,551	Adams et al.	Aug. 17, 1909
1,037,179	Ludlum	Aug. 27, 1912
1,838,401	Howard	Dec. 29, 1931
1,854,055	Montgomery	Apr. 12, 1932