(No Model.)

W. H. PHILLIS.

Sucker Rod Joint.

No. 241,415. Patented May 10, 1881.

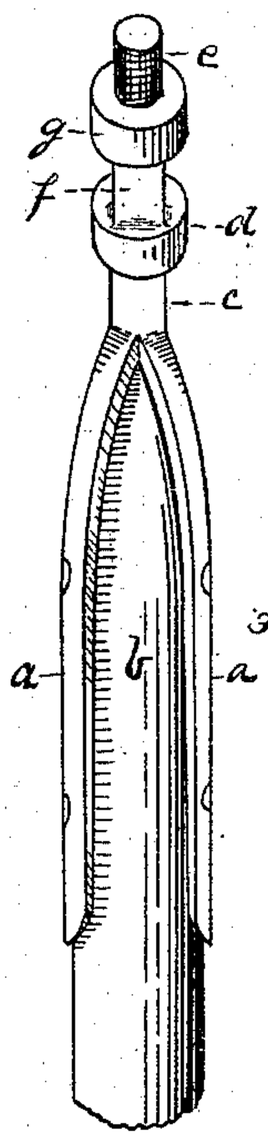

Fig. 1.

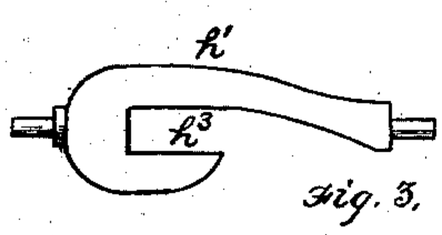

Fig. 3.

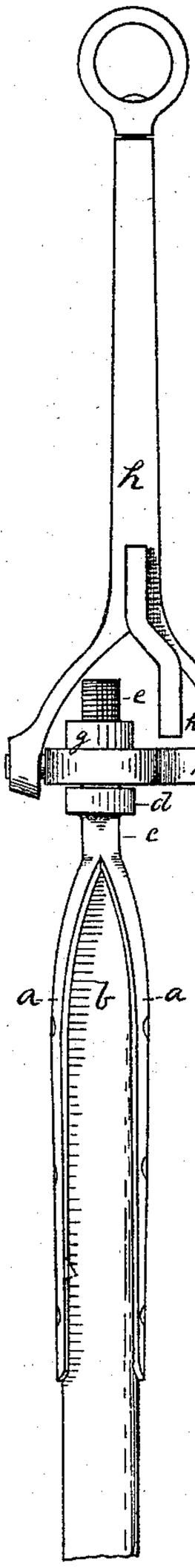

Fig. 2.

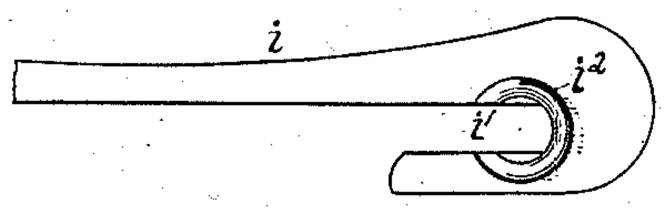

Fig. 4.

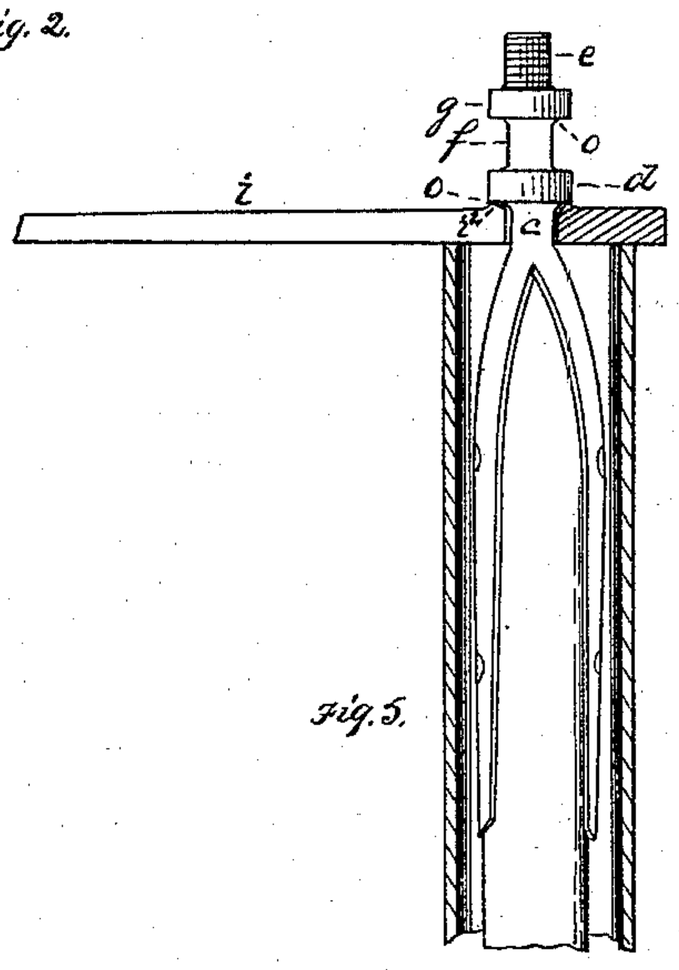

Fig. 5.

Witnesses
L. C. Fitler
Jno. K. Smith.

Inventor,
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by his attorneys
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UNITED STATES PATENT OFFICE.

WILLIAM H. PHILLIS, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO GILLESPIE, BROS. & CO., OF SAME PLACE.

SUCKER-ROD JOINT.

SPECIFICATION forming part of Letters Patent No. 241,415, dated May 10, 1881.

Application filed March 8, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. PHILLIS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Sucker-Rod Joints; and I do hereby declare the following to be a full, clear, and exact description thereof.

The sucker-rods of oil-wells are in sections, usually twenty-five feet long, and each section is fitted with metal joints, the pin being at the upper end and the box at the lower end. These sections are screwed together and lowered length by length in the well to the depth of several hundred feet. It is occasionally necessary to remove the rods, and this is done by attaching to the top joint at the square part, just under the collar, at the base of the pin, a swivel clamp or yoke, which is fastened to the derrick-rope, and then raising the rods thereby until the second joint appears. A second swivel-clamp is attached to this section in the manner just described. The line is slacked sufficiently to permit the second clamp to rest on the well-tube and take the weight of the string, and a wrench is then applied to the first section and it is unscrewed from the second one, the swivel of its supporting-clamp permitting it to turn in unscrewing without twisting the rope. Then the unscrewed section is swung over to the side of the derrick and stacked and the first clamp unfastened therefrom by the derrick-man, who manages the rope at the top of the derrick. Then the rope with the first clamp is lowered, and the clamp which is secured merely by a hook on the end of the rope is unhooked, the rope attached to the second clamp, and the string raised until the third section appears. Then the first clamp is put on the third section and the operation proceeds, as has been described. Various objections are had to this operation, among which are the danger arising from the slipping and falling of the detached clamps, which is occasionally the cause of accidents to the workmen, the necessity of having two clamps, and the labor necessary in handling them.

My invention consists of an improved construction of sucker-rod joints and a wrench for use therewith that enables me to obviate these objections and to take out the sucker-rods safely with one clamp and with much less labor than by the former plan.

To enable others skilled in the art to make and use my invention, I will now describe its construction and mode of operation by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of the upper end of a section of sucker-rod provided with my improved joint. Fig. 2 is a view of a sucker-rod joint and a swivel-clamp. Fig. 3 is a face view of the jaw of the clamp. Fig. 4 is a face view of my improved wrench, and Fig. 5 is a view of the well-tube, sucker-rod, and wrench.

The old form of sucker-rod joint had two concavo-convex leaves, *a*, by which it was fastened to the wooden rod *b*, a square part or shank, *c*, a round collar, *d*, and a pin, *e*, the latter being threaded for attachment to the box of the adjoining section. In addition to these parts I provide the joint with a second shank, *f*, which may be either round or polygonal in form, and a second collar, *g*, between the collar *d* and pin *e*. Then, when the rods are drawn, a swivel-clamp, *h*, of the ordinary construction is used. The jaw *h'* turns on its journals in the forked stem h^2, and is slipped on the shank of the joint by bringing the stem down horizontally at the side of the jaw, and then when the shank is in the slot h^3, turning the stem up to a vertical position, bringing the stop h^4 in front of the slot h^3, so that the joint cannot slip out, as shown in Fig. 2. The clamp is put on the shank *f* of my joint instead of on the shank *c*, as heretofore. The rod is then raised, as described, until the upper end of the second section appears. Then, instead of using a second clamp like *h*, my improved wrench *i* is slipped onto the shank *c* and the rope slackened until it rests upon the mouth of the well-tube and sustains the weight of the whole string of sucker-rods. Then a wrench is applied to the first rod and it is unscrewed and stacked in the derrick, as before described. Then the clamp, which is fastened permanently to the derrick-rope, so that it cannot come off and fall, is lowered and attached to the second rod by slipping it over the shank *f*. As soon as the rope begins to raise the string and the wrench

i is relieved of its weight it is slipped off and is ready for use with the third rod, and so on until the whole string is removed.

In the manufacture of the joints it is impossible to make the collars *d* and *g* with square corners where they join the shank at *o* without cutting out the fillet *o* by means of suitable tools at a separate operation; but as such cutting away of the fillet *o* would unduly weaken the joint at that point, it is desirable to let it remain. This, however, would involve making the slot *i'* of my wrench *i* so wide that it would greatly increase its weight and size and inconvenience of use. I therefore form the wrench with a boss or ridge, i^2, running around the inner end of the slot *i'* of sufficient height and sufficiently far from the edge of the slot to give a bearing for the collar *d* outside of the fillet *o*. The purpose of this is to prevent the fillet or tapered part of the shank entering and jamming or sticking in the slot *i'*.

The advantages of my improvement consist in dispensing with one clamp and substituting therefor the cheap, light, and easily-managed wrench, the ability to attach the remaining clamp securely to the derrick-rope, and thereby avoid danger to the men, saving of labor, and expense.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A sucker-rod joint having straps for attachment to the sucker-rod, a square shank at the base of the straps, a collar, a second shank, and a second or supplemental collar interposed between the first collar and the coupling-pin, substantially as and for the purpose specified.

2. An open-slotted sucker-rod wrench having a boss or projecting ridge on its face around the inner end of the slot, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand.

WILLIAM H. PHILLIS.

Witnesses:

T. A. GILLESPIE,

T. B. KERR.