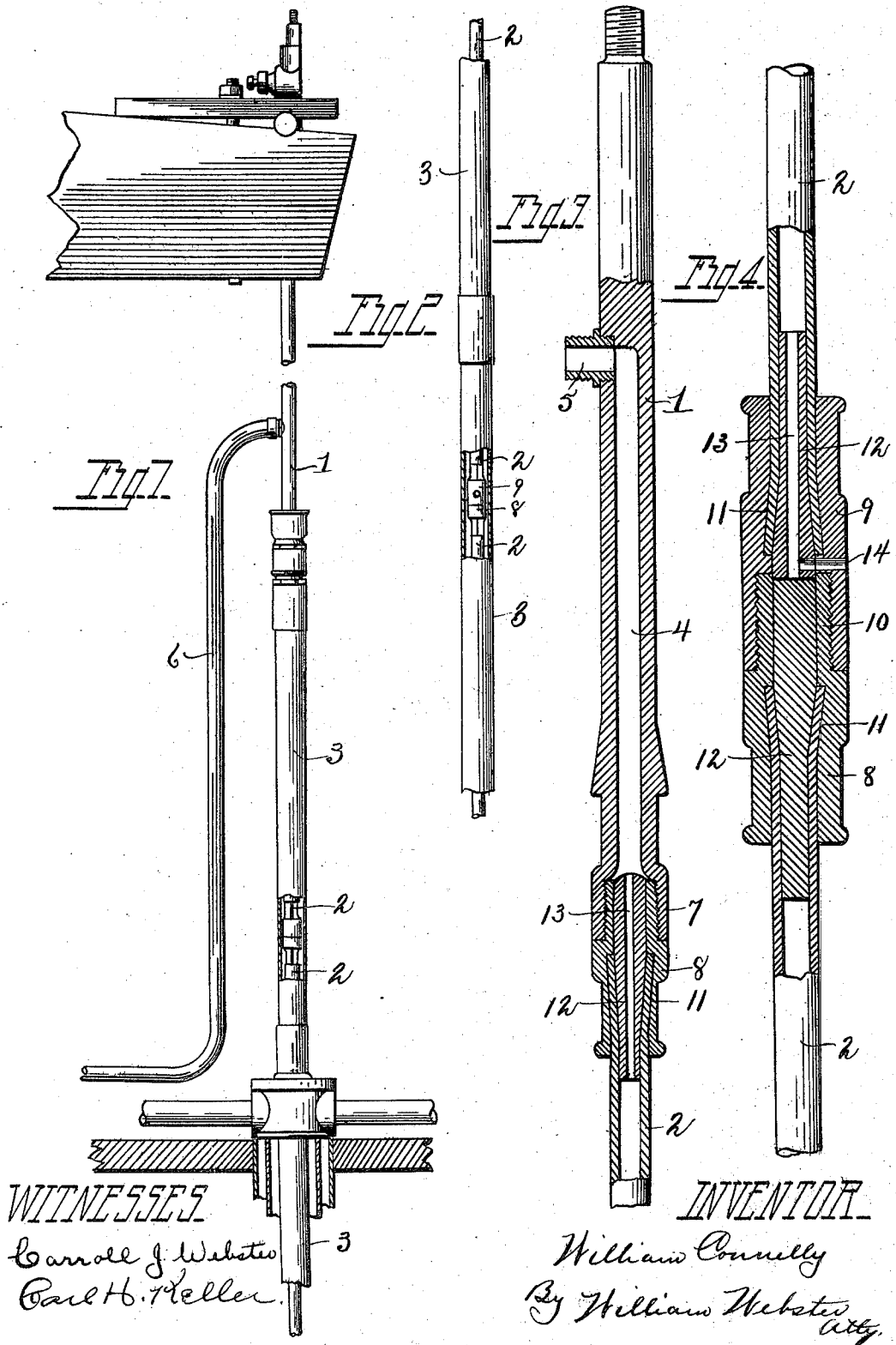


(No Model.)

W. CONNELLY.
MEANS FOR CLEANING OIL WELLS.

No. 572,867.

Patented Dec. 8, 1896.



UNITED STATES PATENT OFFICE.

WILLIAM CONNELLY, OF TOLEDO, OHIO.

MEANS FOR CLEANING OIL-WELLS.

SPECIFICATION forming part of Letters Patent No. 572,867, dated December 8, 1896.

Application filed September 8, 1896. Serial No. 605,063. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CONNELLY, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Means for Cleaning Oil-Wells; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My invention relates to means for cleaning oil-wells, and has special relation to a mechanism for steaming the interior of the tubing and the exterior of the sucker-rods in order that paraffin, &c., deposited thereon may become disintegrated and not act as a hindrance to the movement of the sucker or polished rod within the tubing.

Heretofore in the branch of the art to which this invention appertains when the sucker-rod became gummed by a deposit of paraffin thereon it stuck to the tubing, requiring that it and the tubing be removed from the well in order that they may be cleaned. This operation is attended with expense and consumes considerable time.

My invention has for its object to overcome these difficulties; and it consists in providing a central orifice through the polished and sucker rods which is in communication, by a suitable conduit, with the interior of the tubing within the well, whereby steam can be forced into the tubing and around the sucker-rod at any point desired.

The invention further consists in the coupling employed between two sections of the sucker-rod, which are in this invention necessarily tubular in cross-section.

The invention further consists in the parts as hereinafter shown, described, and claimed.

In the drawings, Figure 1 is an elevation of a portion of the tubing, polished rod, and sucker-rod, illustrating a flexible hose in communication with the interior of the polished rod and further details of construction embodied in my invention. Fig. 2 is a like view of a portion of the tubing, illustrating more particularly one of the couplings for two sections of the sucker-rod and an exit-orifice for steam there-

in. Fig. 3 is a sectional view of the polished rod and a portion of the tubing, illustrating more particularly the form of coupling between the sections. Fig. 4 is an enlarged sectional detail view of the meeting ends of two sections of the sucker-rod and the coupling for securing the meeting ends together.

1 designates the polished rod, and 2 the sections of the sucker-rod, the sucker-rod passing and having a vertical movement within the tubing 3. The polished rod 1 is provided with a bore 4, which extends upwardly to a point substantially midway its length, at which point it communicates with the exterior thereof through the medium of a plug 5, said plug being adapted to receive the end of the steam-supply pipe 6, which may be either a flexible pipe or a rigid pipe employing suitable swinging joints. If desired, the polished rod may be provided with a central bore extending its entire length and coupled to the conduit at any point along its length. The lower end of the polished rod is enlarged, as at 7, and internally screw-threaded.

The sucker-rod sections are tubular in cross-section, being secured in coupling-sections 8 and 9, respectively. Coupling-sections 8 and 9 are similar in construction, with the exception that the coupling-section 8 is provided with an annular exterior screw-threaded projection 10, which fits within a like-formed recess within the section 9. Each section is provided with a longitudinal bore which is inclined, as at 11, and fitting within the bore for a portion of its length are the ends of the tubing 2, the tubing being expanded and held within the inclined recess 11 by the plugs 12. The plugs 12 are provided with a longitudinal opening 13, which allows the passage of the steam through the coupling into the adjacent section of sucker-rod.

In view of the fact that the condition of the wells vary as regards the presence of paraffin and that the character of paraffin varies in different localities, it is necessary to provide means for the exit of the steam at different points, which I accomplish by providing an orifice 14, connecting with the bore 13 of one of the plugs 12 and the exterior of the coupling-section, the lower coupling-section being solid, whereby steam is

prevented from passing below the same. All of the plugs in each of the coupling-sections above this point, however, are provided with a longitudinal opening 13. It will thus be
5 seen that I have provided means whereby I may steam the interior of the tubing and the sucker-rod at any point along their length which is efficient in operation, and that I have provided coupling devices for the tubular sections of sucker-rod necessarily employed
10 which does not decrease the strength of the sucker-rod from the solid rod now in use.

What I claim is—

1. In a means for cleaning oil-wells, a polished rod, sucker-rod sections, each provided
15 with a longitudinal bore, a steam-pipe in communication with a suitable supply of steam and the bore of the polished rod, coupling devices between the same provided with
20 a longitudinal bore, and an opening communicating with the bore and the exterior of the sucker-rod within the well.

2. In a means for cleaning oil-wells, a polished rod provided with a longitudinal bore,
25 a hollow plug secured in the polished rod in

communication with a steam supply and with the bore of the polished rod, tubular sucker-rod sections secured together and to the polished rod through the medium of interposed couplings, said couplings being provided
30 with a longitudinal bore in communication with the bore of the polished-rod and sucker-rod sections respectively, and an opening communicating with the bore and the exterior of the sucker-rod sections within the well. 35

3. In a means for cleaning oil-wells, tubular sections of sucker-rods and couplings interposed between the sections comprising coupling-sections, tapered plugs secured within the coupling-sections for expanding and securing the ends of the sucker-rod sections within the coupling-sections, the plugs being provided with a longitudinal bore. 40

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses. 45

WILLIAM CONNELLY.

Witnesses:

CARROLL J. WEBSTER,
MAUD SCHUMACHER.