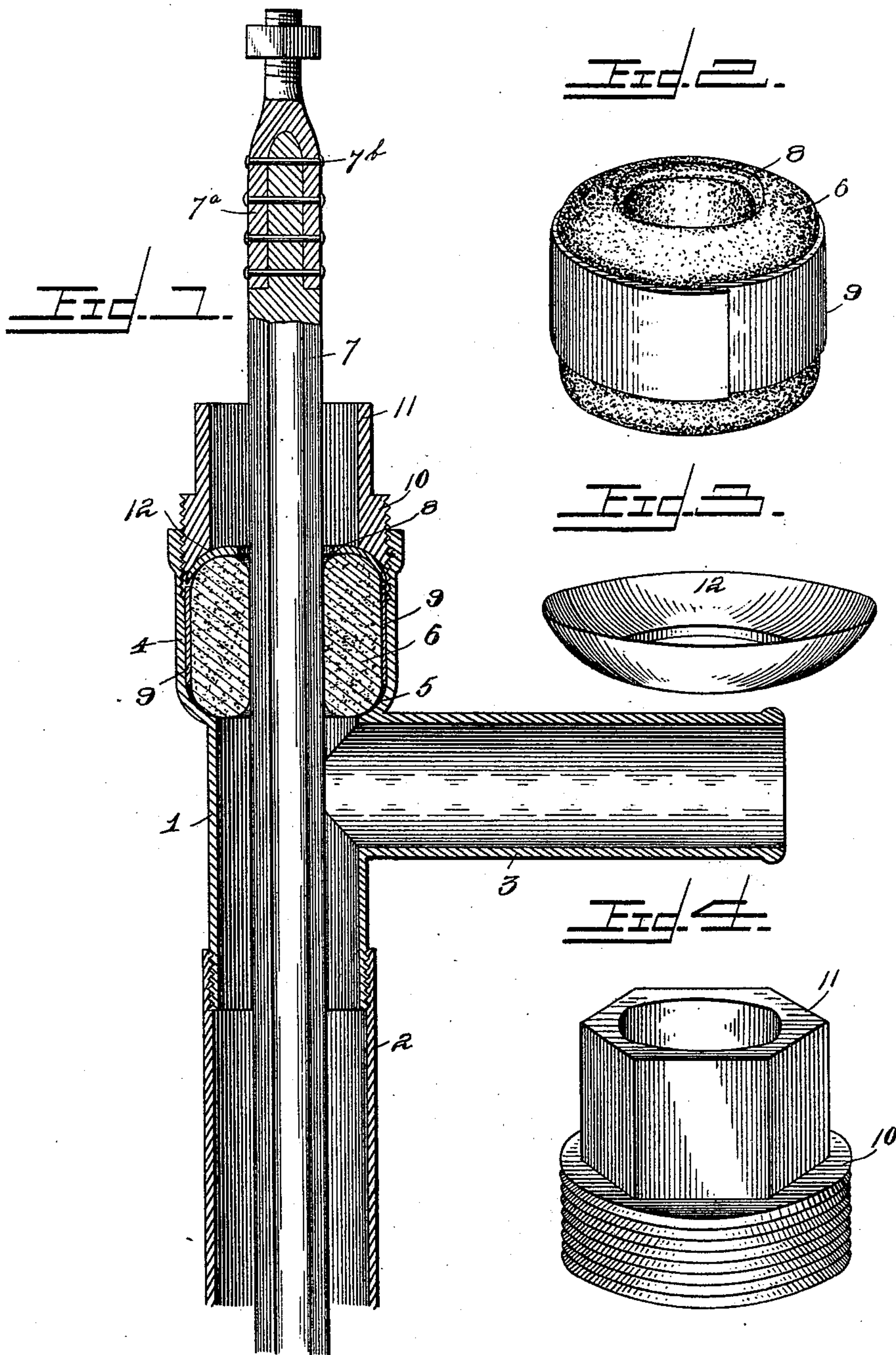


(No Model.)

J. H. GIBSON.
SUCKER ROD CLEANER.

No. 582,638.

Patented May 18, 1897.



Inventor

John H. Gibson.

Witnesses

H. J. LaRue.
C. E. [Signature]

By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN H. GIBSON, OF BRUIN, PENNSYLVANIA.

SUCKER-ROD CLEANER.

SPECIFICATION forming part of Letters Patent No. 582,638, dated May 18, 1897.

Application filed June 16, 1896. Serial No. 595,820. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GIBSON, a citizen of the United States, residing at Bruin, in the county of Butler and State of Pennsylvania, have invented a new and useful Sucker-Rod Cleaner, of which the following is a specification.

My invention relates to a sucker-rod-cleaning device for use in connection with oil-well-pumping apparatus to remove the accumulated paraffin from the surfaces of the rods as the latter are withdrawn from the tubing, this operation being necessary at intervals to prevent the accumulations from interfering with the operation of the apparatus.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings, Figure 1 is a central sectional view of a sucker-rod-cleaning device constructed in accordance with my invention applied in the operative position to oil-well tubing. Fig. 2 is a detail view of the compressible scraping-ring detached. Fig. 3 is a similar view of a washer which is employed in connection with the scraping-ring. Fig. 4 is a similar view of the follower.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a barrel, which is threaded at its lower extremity in the upper end of the tubing 2 and is provided with a lateral outlet 3, which in the present instance consists of a horizontal tube. Above and contiguous to the upper side of the outlet the bore of the barrel is enlarged to form a chamber 4, of which the lower end is concaved and rounded to form a seat 5. In this seat is fitted the lower end of a terminally-convexed compressible scraping-ring 6, said scraping-ring being elongated vertically to form a cylinder of which the bore is adapted to fit snugly upon the sucker-rods 7. The scraping-ring is reversible, being similar in construction at both ends, and the inner edges or angles 8 thereof are rounded, as shown, so that the projections, such as iron straps 7^a and rivets 7^b, which are employed to connect the extremi-

ties of the rods, may not catch and tear the inner surface of the scraping-ring, the pressure of said rounded edges being sufficient, however, to remove the accumulated paraffin.

A metal band or sleeve 9, consisting of a continuous strip of sheet metal, encircles the flexible scraper within the threaded bowl or chamber 4 to prevent contact of said scraper with the threaded portions of the walls of the chamber, and in order to compress the scraping-ring I employ an adjustable follower 10, which is threaded in the upper end of said bowl or chamber and is provided with an extended sleeve 11, forming a wrench-seat. Interposed between the lower concave surface of the follower and the upper convex extremity of the scraping-ring is a washer or follower-ring 12, whereby free rotary movement of the follower during the adjustment thereof to compress the scraping-ring is permitted.

When the bore of the scraping-ring becomes worn, the same may be contracted to secure the necessary frictional contact with the surfaces of the sucker-rods by adjusting the follower, said scraping-ring being constructed of flexible material, preferably of rubber, whereby during the withdrawal of the sucker-rods it is adapted to yield slightly without becoming displaced.

This device is adapted to be attached to the upper end of an oil-well tubing when it is desired to withdraw the sucker-rods, such operation being necessary usually at intervals of from four to six months, and hence a single device may be employed successively in connection with a plurality of wells. As the sucker-rods are withdrawn the accumulation of paraffin is scraped from the surfaces thereof and forced laterally through the outlet opening and tube to a suitable receptacle provided therefor, thus avoiding the scattering of the paraffin incident to the ordinary method of scraping the rods by hand.

A further advantage of the improved cleaning device resides in the fact that all of the loose straps and broken rivets are exposed and indicated, and hence may be repaired with facility as the rods are detached to guard against disconnection and dropping of the rods when in the well. Furthermore, the paraffin is removed in a clean condition and may

be immediately packed for shipment, as this product forms a valuable article of merchandise.

I am aware of the existence of oil-saving devices adapted to be attached to or substituted for casing-heads to prevent the waste of oil during the removal of a drill and the introduction of a pump, the same being so constructed as to convey oil, which is elevated by natural pressure, to a suitable receptacle; but it will be understood that the device embodying my invention is designed solely for use in connection with well-pump tubing, not to prevent the escape of oil, but to serve as a scraper for the pump-rod to remove a collection of paraffin which, if allowed to accumulate, will ultimately render the pump inoperative by making the pump-rod immovable. It has been the common practice heretofore, when paraffin has collected upon a pump-rod to such an extent as to interfere with the reciprocation of such rod, to draw the rod from the well-tubing while one or more of the operatives scrape the rod by hand, as by grasping the same firmly during its upward movement. In addition to the limited efficiency of this plan, by reason of the lack of power in the hands of the operatives to remove all of the paraffin, it is open to the objection of being extremely dangerous to those through whose hands the rod is drawn, by reason of the liability of slivers of wood and metal being forced through the hands. I have found in practice that it is desirable to employ yielding means for removing the paraffin, in order to prevent injury to the parts on account of slight irregularities in the rod, and hence have adopted the annular compressible scraper,

which may by compression be forced into contact with the surface of the rod at any desired tension, while at the same time there is sufficient resilience to avoid injury. This paraffin-removing device is applied, as above described, to the pump-tubing, and is preferably applied thereto only temporarily, for the reason that in practice the pump-rods need cleaning only at long intervals—as, for instance, several months. Hence one device of this class may be used for a number of pumps, being attached to the tubing when required and being removed immediately after the rod has been drawn.

Having described my invention, what I claim is—

A paraffin-removing device for sucker-rods, the same comprising a barrel adapted to be attached to the upper end of the well-tubing, provided with a lateral outlet, and enlarged or expanded above said outlet to form an annular seat and a superjacent chamber of a diameter greater than the portion of the barrel below the outlet, a scraping-ring fitted in said seat to encircle the sucker-rod, and means for compressing the scraping-ring to cause lateral expansion and thereby contract its bore to snugly fit the sucker-rod, whereby paraffin is removed from the surface of the sucker-rod and is forced laterally from said outlet, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN H. GIBSON.

Witnesses:

THOMAS G. RUSSELL,
ZERA M. GIBSON.