

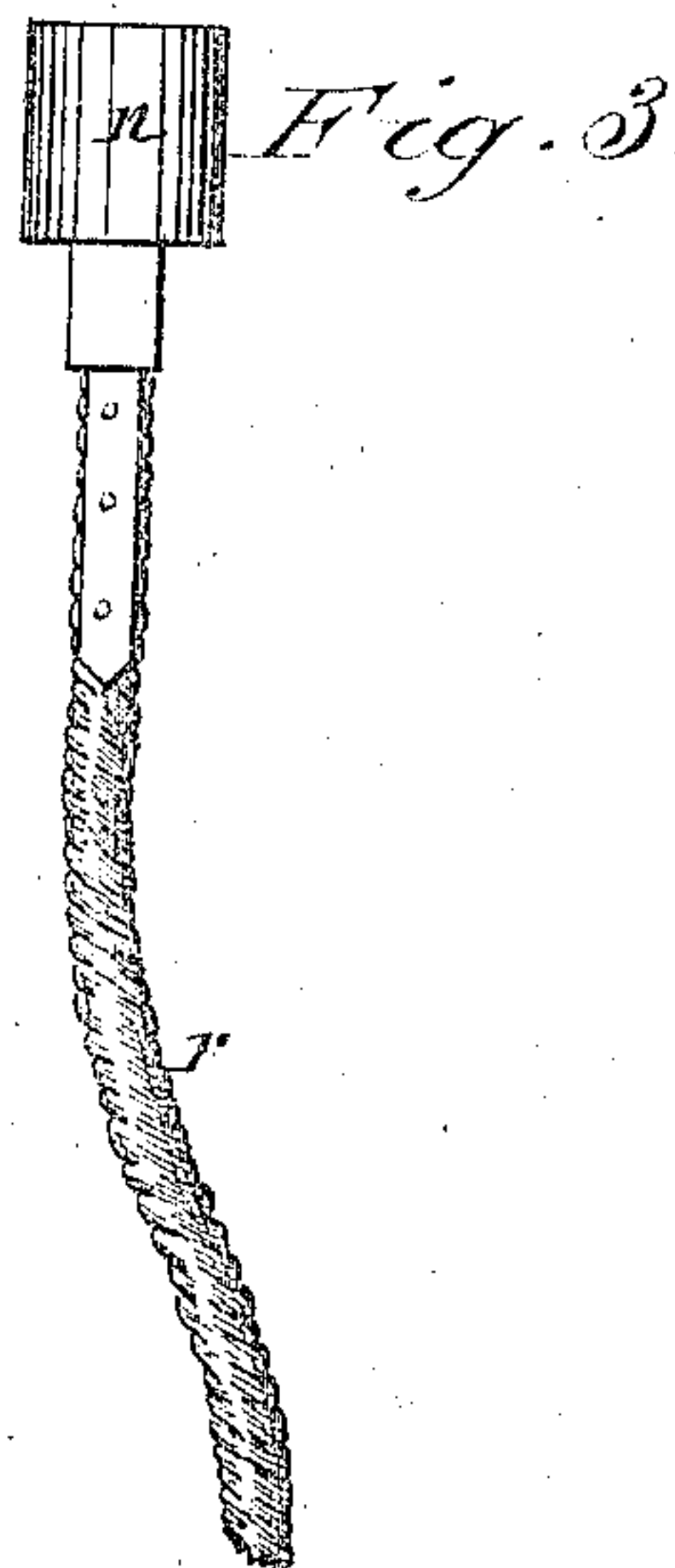
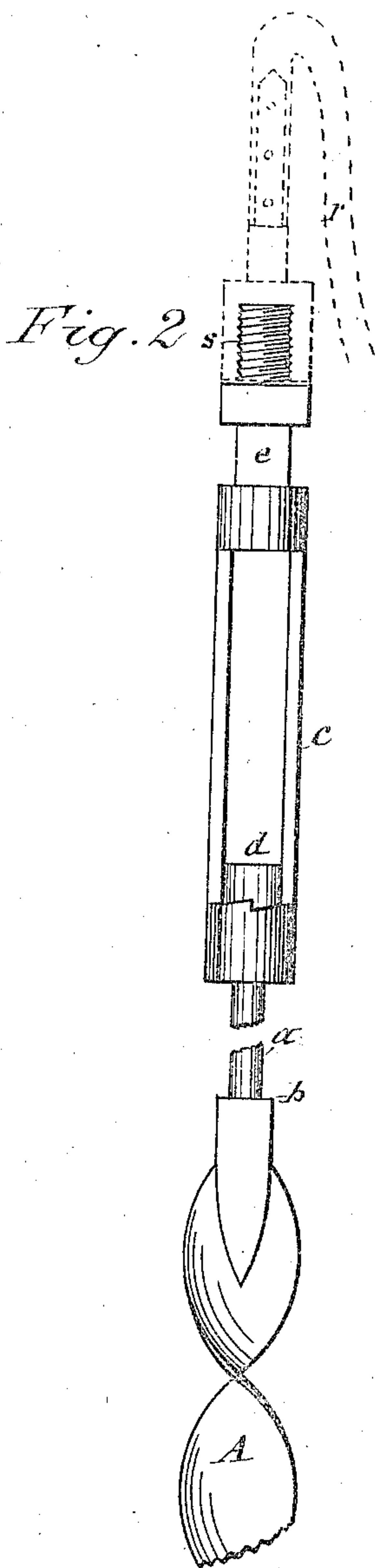
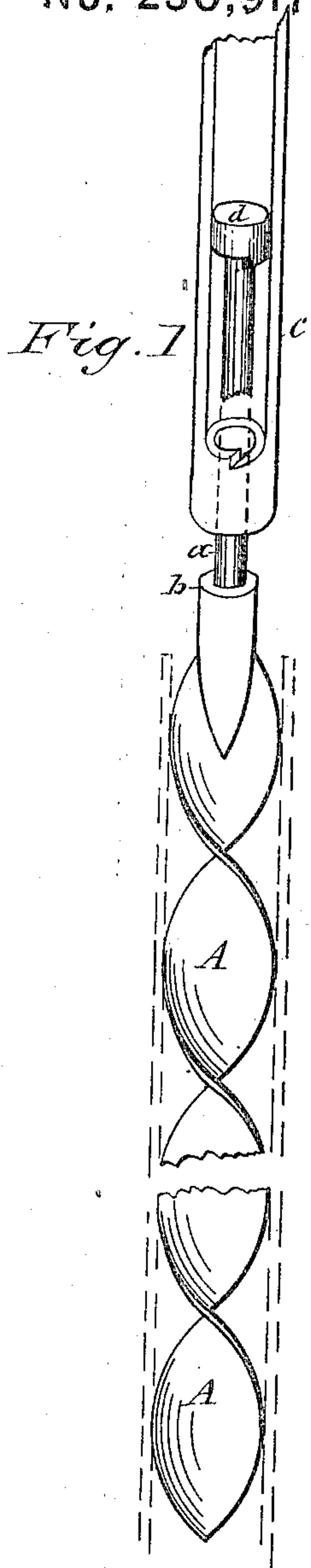
(Model.)

J. W. BAUM.

Device for Cleaning Paraffine from the Tubings  
of Oil Wells.

No. 230,917.

Patented Aug. 10, 1880.



WITNESSES:

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INVENTOR:

John W. Baum.  
per Hunt, Laass & Hey,  
attorneys



# UNITED STATES PATENT OFFICE.

JOHN W. BAUM, OF GILLMOR CITY, PENNSYLVANIA.

DEVICE FOR CLEANING PARAFFINE FROM THE TUBINGS OF OIL-VELLS.

SPECIFICATION forming part of Letters Patent No. 230,917, dated August 10, 1880.

Application filed March 3, 1880. (Model.)

To all whom it may concern:

Be it known that I, JOHN W. BAUM, of Gillmor City, in the county of McKean, in the State of Pennsylvania, have invented new and useful Improvements in Devices for Cleaning Paraffine from the Tubings of Oil-Wells, (not patented to me, nor with my knowledge or consent, in any foreign country,) and of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

The nature of this invention consists, chiefly, of a spiral auger blade or shaft connected by a swivel-joint to the device by which it is operated in the tube or pipe designed to be cleaned, whereby the said tool is allowed to freely turn and yield to the obstructions on the interior of the tube during its descent in the same, and thus prevent the forcing of said obstructions toward the bottom of the tube.

The invention also consists in the combination, with a spiral auger blade or shaft, of a swivel-connection provided with a clutch for preventing the rotation of said auger during its withdrawal from the tube, thereby causing the side edges of the spiral to scrape the interior surface of the tube and carry the removed substance to the upper end of the tube, and at the same time, by the retraction of the filled spiral, creating a vacuum below the spiral, and thus promoting the flow of oil; and it furthermore consists in a peculiar construction and combination of a link connected at one end by a swivel-joint with the auger, and at the opposite end by a screw-coupling to the rope or other appliance by which the auger is manipulated in the tube of the well, all as hereinafter more fully described and specifically set forth in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the swivel-connection of the auger, showing the clutch designed to prevent the rotation of the auger during its withdrawal from the tube. Fig. 2 is a side view of the device by which the auger is connected to the rope or other appliance employed for lowering the auger into and withdrawing it from the tube to be cleaned, and Fig. 3 is a view of the rope and its coupling detached from the tube cleaner.

Similar letters of reference indicate corresponding parts.

A denotes the auger, or, more properly, the scraper, designed to remove the paraffine or other incrustation from the well-tubing, the said auger consisting of a spiral shaft or twisted blade having its lower extremity tapered to facilitate its entrance in the tube designed to be cleaned. To the upper end of the auger is rigidly attached a rod, *a*, which passes through an orifice in the end of a link, *c*, and forms a swivel-connection therewith.

The rod *a* is of sufficient length to allow it to slide longitudinally in its connection with the link, the said movement being limited by a shoulder, *b*, on the rod *a*, outside of the link *c*, and by a head, *d*, on the inner extremity of said rod. The under side of the head *d* is provided with one or more ratchet-teeth or other suitable shoulders adapted to engage with corresponding notches or indentations in the inner face of the swivel end of the link, and thus form a clutch for preventing the rotation of the auger during its withdrawal from the tube in the operation of cleaning the same, as hereinafter more fully described.

The upper end of the link *c* is provided with a rigid shank, which is screw-threaded, as shown at *s*, for the attachment to a female-threaded socket on the end of the appliance by which the auger is designed to be lowered into and withdrawn from the tube to be cleaned. A square or hexagonal rigid collar, *e*, on the shank, at the base of its threaded portion, admits of the application of a wrench for making the aforesaid connection.

By providing the so-called "sand-line," designated by the letter *r* in the drawings with a socket, *n*, threaded internally, as aforesaid, the said line or rope is adapted to be used in connection with my improved tube-cleaning device.

The mode of operating my invention and the advantages derived therefrom are as follows: The link *c* on the end of the auger *A* being properly connected to the so-called "sand-line" or other suitable appliances, as before described, the auger is inserted in the tube to be cleaned and allowed to descend by its own gravity. The slack of the line *r* causes the link



to drop and release its clutch-connection with the head *d* on the end of the auger-shank, thereby allowing the auger to freely revolve and cut its passage spirally through the paraffine on the interior of the tubing without removing and carrying the paraffine downward with it. After the auger has penetrated the paraffine the desired depth it is withdrawn from the tubing by means of the rope *r* or other suitable appliances connected to the upper end of the link *c*. The draft upon the said link causes the head *d* to become interlocked with the lower extremity of the link, and thus prevents the auger from turning during its withdrawal from the tube. The auger thus withdrawn brings with it the paraffine surrounding it and comes to the surface completely loaded with paraffine. After the auger is withdrawn the substance adhering thereto is readily removed. The aforesaid operation is repeated until the bottom of the well is reached and the entire length of the tubing cleaned. In case the auger should become fast in the paraffine the link *c* is dropped upon the end of the auger so as to produce jars sufficiently to start the auger. After the pipe or tubing is cleaned throughout its entire length the spiral blade *A* is repeatedly plunged into the oil in the well and rapidly withdrawn, the former operation agitating the heavy oil and mixing it with the gas, and the rapid withdrawal of the auger, carrying with it the column of oil contained in the tube, produces a vacuum at the bottom of the well, and thereby promotes the flow of oil.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. As a means for cleaning tubings of wells, a spiral shaft or twisted blade connected by a swivel-joint to the appliance by which said shaft or blade is suspended in the tubings aforesaid, substantially as and for the purpose specified.

2. The spiral blade *A*, in combination with a swivel provided with a clutch for preventing the reverse rotary motion of said blade, substantially as described, for the purpose set forth.

3. The combination of the spiral blade *A*, provided with the rigid rod *a*, having the head *d*, provided with ratchet-teeth, and the link *c*, connected by swivel-joint with the said rod and provided with a catch adapted to engage the ratchet aforesaid, substantially as specified and shown.

4. The combination of the spiral shaft *A*, the link *c*, connected therewith by a swivel-joint and provided with a clutch for preventing the reverse rotary motion of the shaft *A*, and the rope *r*, connected to the link *c* by the socket *n*, substantially in the manner described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga and State of New York, this 19th day of February, 1880.

JOHN W. BAUM. [L. S.]

Witnesses:

E. LAASS,

WM. C. RAYMOND.