(No Model.)

W. C. WELLS.

TUBE CLAMP FOR OIL WELLS, &c.

No. 352,724. Patented Nov. 16, 1886.

Fig. 1.

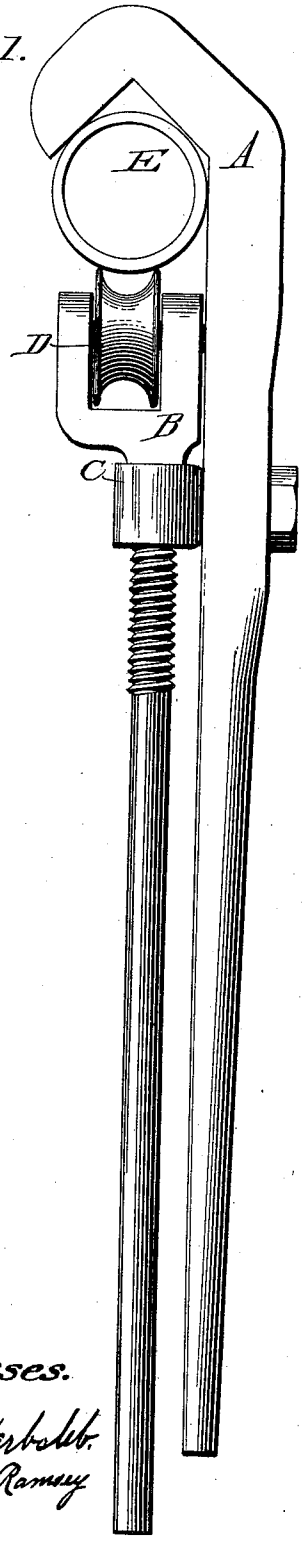


Fig. 2.

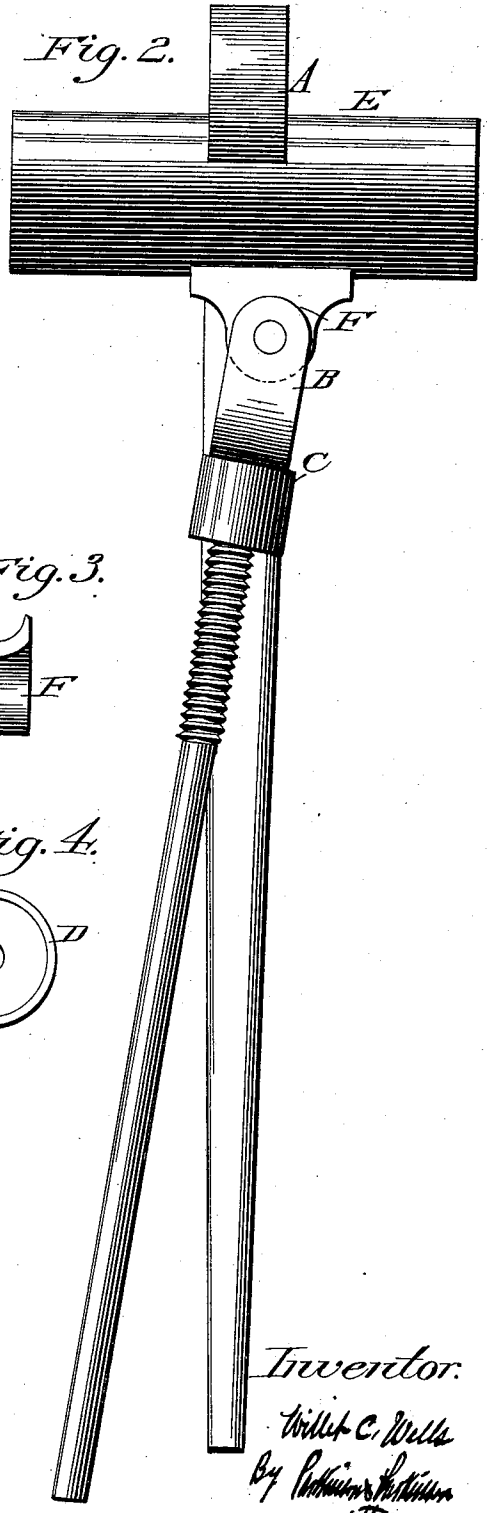
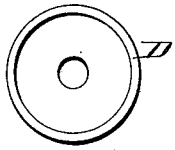


Fig. 3.

Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLET C. WELLS, OF TIFFIN, OHIO.

TUBE-CLAMP FOR OIL-WELLS, &c.

SPECIFICATION forming part of Letters Patent No. 352,724, dated November 16, 1886.

Application filed March 22, 1886. Serial No. 196,165. (No model.)

To all whom it may concern:

Be it known that I, WILLET C. WELLS, a citizen of the United States, residing at Tiffin, in the county of Seneca and State of Ohio, have invented certain new and useful Improvements in Tube-Clamps for Oil-Wells, &c., of which the following is a specification.

My invention relates to tongs for clutching and supporting pipes or other bodies; and it consists in the tongs hereinafter described, which, while capable of other applications, are specially adapted to use in supporting pipes or pumps in a vertical position when being lowered into or withdrawn from or supported in or above wells.

Figure 1 is a plan view of my device when supporting a pipe in a vertical position. Fig. 2 is a side elevation of the same, showing a modified form of the pivoted inner jaw. Fig. 3 is a plan view of this modified form of inner jaw. Fig. 4 is a side view of the pivoted inner jaw or sheave, as shown in Fig. 1.

A is the main arm of the tongs, having at its working end a hook or jaw, which is preferably formed with a V-shaped working face. To the same side of this arm as that on which the jaw is projected I pivot the auxiliary arm B, so that it oscillates in a plane transverse to that in which the jaw of the main arm is projected. This auxiliary arm is sufficiently shorter than the main arm (with respect to their extension forward of the pivotal point) to afford space for the pipe or other body to be clutched between its forward face or head and the jaw of the main arm. In the forward face of this shorter arm I journal a sheave, D, so that its rotation is in the plane of oscillation of the arm. This sheave constitutes an inner pivoted jaw opposing the hook or outer jaw of the larger arm.

Instead of the sheave, a jaw of other shape may be pivoted in the head B, as illustrated in Figs. 2 and 3.

The operation of the tongs is as follows: The tongs being suitably supported, the auxiliary arm is oscillated on its pivot, so as to raise its abutting or working face above and away from the jaw of the main arm, thus enabling the pipe or other body (shown as E) to be inserted in the jaw. The working-face or inner jaw of the shorter arm (illustrated by D and F) is then lowered, so as to come in contact with E, which will cause E to be gripped between it and the opposing jaw, the weight of E only serving to tighten the grip. E will then be firmly supported until it is desired to raise or lower it, when it is readily released by a very slight downward pressure on the outer or rear end of B. I thus obtain a very effective application of the lever-power to the grip, while making the tongs practically self-locking. In order to make these tongs adjustable to different sizes of pipe or other bodies, I make B adjustable forward and backward through the pivotal support, which serves as its fulcrum.

C in the drawings represents a nut or collar which is pivoted in the main arm A, and in which B is supported. By providing B with a screw-thread it can be readily adjusted through this nut. In order to effect this adjustment, B has first to be sufficiently turned on its pivot to bring its head above the plane of A, when it can be readily screwed in either direction. When B is in working position—that is, approximately in the same plane as A, but slightly above the same—the abutment between the head of B and the adjacent side of A will lock B against any rotation in its nut or collar C. Other means of adjusting B forward and backward through its pivotal support may be provided; or the point of pivotal support in A may itself be adjusted forward or backward; but I prefer the arrangement shown. By making the interior of the jaw of A in V shape I secure the centering of the pipe to be gripped directly opposite the sheave or abutting surface of B, irrespective of the size of the pipe.

It is obvious that some of the advantages of my invention may be obtained by using a solid abutting surface on the head of B, instead of the sheave D or pivoted jaw F; but the double leverage obtained by means of this sheave or pivoted jaw greatly facilitates the release of the grip, and is otherwise an important feature.

I claim—

1. Gripping-tongs having a lateral projecting V-shaped jaw on the main arm and an auxiliary arm pivotally connected to the main arm on the side on which the jaw is projected, so as to oscillate in a plane transverse to that

in which the main jaw is projected, and opposing its head or forward end to the main jaw, for the purpose described.

2. In gripping-tongs, the combination of an arm having a lateral jaw, an arm pivoted to the inner side of said last-mentioned arm and oscillating in a plane transverse to that in which said jaw is projected, and an inner jaw pivoted to the head of the oscillating arm, for the purpose described.

3. In gripping-tongs, the combination of an arm having a lateral jaw and an arm pivoted to the inner side of said first-mentioned arm, oscillating in a plane transverse to that in which said jaw is projected, and having journaled in its head, opposite to said jaw, a sheave, for the purpose described.

4. The combination, in gripping-tongs, of an arm having a lateral jaw, an arm pivoted to oscillate in a plane transversely to that in which said jaw is projected and presenting its head as an offset to said jaw, and a pivotal support for said last-mentioned arm, through which the same is adjustable to adapt it to grip different-sized bodies, for the purpose described.

5. The combination, in gripping-tongs, of an arm with a lateral jaw and an arm pivotally attached thereto, oscillating in a plane transverse to that in which said jaw is projected, and having a head which affords an offset to said jaw when said arms are adjusted with reference to each other, to bring the head and jaw nearer to or farther from each other, for the purpose described.

6. The arms of gripping-tongs pivotally united to each other by means of a collar, through which one arm passes and which has its pivotal bearing in the other arm, for the purpose described.

7. The arms of gripping-tongs pivotally connected with each other by means of a collar, through which one arm is adjustable forward and backward, and which has a pivotal bearing in the other arm, for the purpose described.

8. The arms of gripping-tongs pivotally connected by means of a collar, through which one of them is adjustable forward and backward by means of a screw-thread on said arm, and which is pivoted in the other arm, for the purpose described.

9. The gripping-tongs having a lateral V-shaped jaw on one arm and an arm pivotally connected to said first-mentioned arm, oscillating in a plane transverse to that in which said jaw is projected, and having journaled in its head a gripping-jaw which by said oscillation is brought opposite said first-mentioned jaw when said arms are adjustable through their pivotal connection, to bring said jaws nearer to or farther from each other, for the purpose described.

WILLET C. WELLS.

Witnesses:
FRANK E. WELLS,
IRA E. STRONG.

Correction in Letters Patent No. 352,724.

It is hereby certified that in Letters Patent No. 352,724, granted November 16, 1886, upon the application of Willet C. Wells, of Tiffin, Ohio, for an improvement in "Tube-Clamps for Oil-Wells, &c.," an error appears in the printed specification requiring the following correction: In line 6, page 1, the words "Tube-Clamps for Oil-Wells, &c.," should be stricken out and the words *Grip-Tongs* inserted instead; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 18th day of January, A. D. 1887.

[SEAL.]

D. L. HAWKINS,
Acting Secretary of the Interior.

Countersigned:

R. B. VANCE,
Acting Commissioner of Patents.