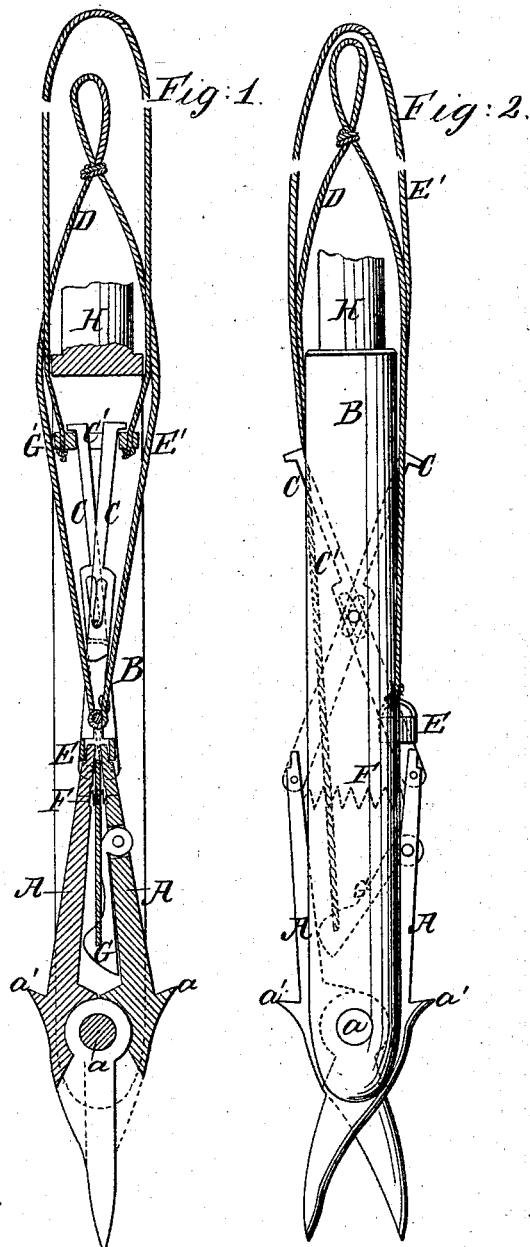


W. H. Downing,

Tube Clamp.

N<sup>o</sup> 47,194.

Patented Apr. 11, 1865.



Witnesses;  
C. D. Smith  
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# UNITED STATES PATENT OFFICE.

WILLIAM H. DOWNING, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN APPARATUS FOR WITHDRAWING TUBES FROM WELLS.

Specification forming part of Letters Patent No. **47,194**, dated April 11, 1865.

*To all whom it may concern:*

Be it known that I, WILLIAM H. DOWNING, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Tube Catcher or Apparatus for Withdrawing Tubes from Wells or Shafts; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical longitudinal section of my improved apparatus. Fig. 2 is a side elevation of the same.

Similar letters of reference indicate corresponding parts in the two figures.

My invention relates to an apparatus whose parts may be named in the order of their importance, as follows: First, a pair of pivoted jaws or arms having sharp-edged projections, which are driven into the tubing on its inside, or caused to take firm hold therein when the jaws are expanded, and which contract with the jaws, so as to release their hold upon the tubing and permit the apparatus to be withdrawn from the same; secondly, a pair of toggles or levers pivoted together at their centers and to the above-mentioned jaws at their lower ends, and caused to contract by the elevation of an embracing-yoke, which is done by means of a cord or rope, and for the purpose of contracting the toggles and catching-jaws when the apparatus is to be withdrawn from the tubing; thirdly, a spring and an accessory lever, both placed between the catching-jaws and acting to spread or expand them for the purpose of driving the edged projections into the tubing, this lever being provided with a cord which causes the edged projections to dig the deeper the harder it is pulled; fourthly, a cap fitting over the upper extremities of the jaws during the descent of the apparatus into the tubing and removed to permit the jaws to be spread by means of a cord.

The following detailed description of my invention will enable others skilled in the art to which it appertains to fully understand and use the same.

In the accompanying drawings, A A represent a pair of jaws or arms suitably pivoted at *a* within the frame B, and having on their outer sides projections *a' a'* with sharp edges, to adapt them to readily enter the tubing in

the well when the jaws are expanded after having been lowered into the tubing. C C are toggles or levers attached respectively at their lower ends to the jaws A A, and turning upon a pivot, *c*. The toggles C C are slotted at the point where the pivot *c* is inserted to allow them the vertical play rendered necessary by the expansion and contraction of the jaws A A. The upper ends of the toggles C C are deflected so as to prevent the detachment of the embracing-yoke C', which, on being elevated by the cord D extending upward and out of the well, contracts the toggles C C, and consequently the jaws A A, but the yoke C' when unsupported falls to a position wherein it will permit the toggles to be expanded.

E represents a cap placed over the upper ends of the jaws A A, to hold them together during their descent into the tubing, as represented in Fig. 1. After the apparatus is lowered to the point where the jaws are to take hold of the tubing, the cap E is raised in order to release the jaws by means of the cord E'. As soon as the jaws A A are thus released, they are spread or expanded by the interposed spring F, which causes the projections *a' a'* to spread and take into the tubing. If, from the weight of the tubing or other cause, the spring F should not prove strong enough to embed the projections *a' a'* to the requisite extent to insure a firm hold, such as will allow the tubing to be withdrawn, then the lever G, which is pivoted to one of the jaws A, is raised by the cord G'. By means of the lever G and cord G' the jaws A A may be expanded with great force, the projections *a' a'* embedding themselves into the tubing the harder the cord E is pulled.

When the tubing has been taken hold of by the projections *a' a'* in the manner described, the apparatus may be elevated by power applied to the shaft H, attached thereto.

The dimensions of the apparatus may of course be varied in conformity with the size of the tubing to be raised.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

1. The jaws or arms A A, having projections *a' a'*, and adapted to be opened or spread by the spring F and lever G, when lowered into

the tubing of a well for the purpose of taking hold of and raising the same, substantially as herein set forth.

2. The combination of the toggles C C, yoke C', and cord D, for contracting the jaws A A when the apparatus is to be withdrawn from the tubing.

3. The detachable cap E, employed to retain the jaws A A in their closed position while

the apparatus is being lowered into the tubing, substantially as described.

To the above specification of my improved tube-catcher, I have signed my hand this 25th day of January, 1865.

WM. H. DOWNING.

Witnesses:

EDWARD H. KNIGHT,  
ALEX. A. C. KLAUCKE.