

H. HARRIS.

Device for Extracting or Splitting the Tubular  
Casings of Oil-Wells.

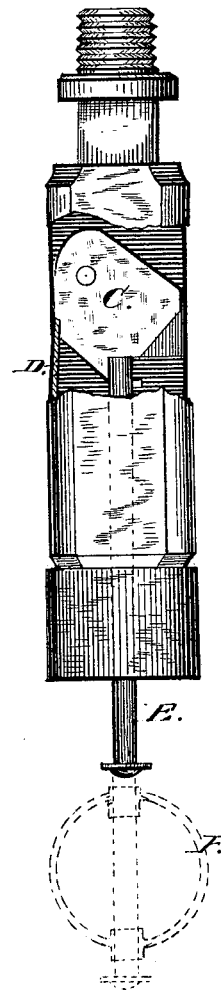
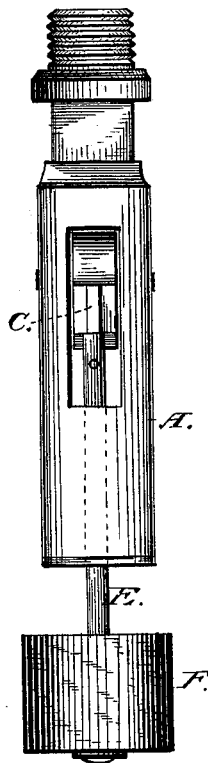
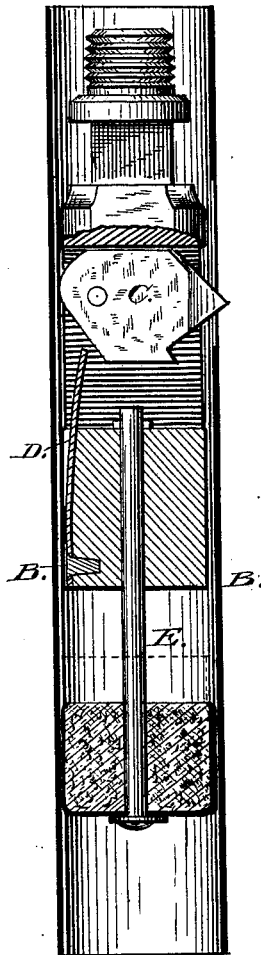
No. 220,476.

Patented Oct. 14, 1879.

*Fig. 1.*

*Fig. 2.*

*Fig. 3.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

HART HARRIS, OF PETROLIA, PENNSYLVANIA.

IMPROVEMENT IN DEVICES FOR EXTRACTING OR SPLITTING THE TUBULAR CASINGS OF OIL-WELLS.

Specification forming part of Letters Patent No. **220,476**, dated October 14, 1879; application filed April 24, 1879.

*To all whom it may concern:*

Be it known that I, HART HARRIS, of Petrolia, Pennsylvania, have invented an Improvement in Devices for Extracting or Splitting the Tubular Casings of Oil-Wells; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section, showing my machine in place in the tube of an oil-well, with the point of the knife in working position. Fig. 2 is a front view, showing the knife locked in position to enter and pass down the tube of the well. Fig. 3 is a partial section, showing the knife withdrawn and the point concealed, as in Fig. 2.

My improvement consists in certain combinations of devices, which will be fully understood by the following specification.

In the construction of my improved machine for splitting the tubular casings of oil-wells, a cutter block, A, Fig. 2, is made so as to pass down into the tube B, Fig. 1, which represents the tubular casing of an oil-well. This cutter-block is provided with a knife, C, pivoted in a slot in the sliding cutter-block A, so that the point of the knife swings eccentrically, and thus sheathes or withdraws the point of the knife, as seen in Figs. 2 and 3, or throws out the point of the knife, as seen in Fig. 1. Pressing against the back of the knife is a flat spring, D, which throws out the point of the knife, as seen in Fig. 1.

The upper end of a sliding mandrel, E, catches in a notch of the knife and holds the latter from swinging, thus keeping the point of the knife drawn back into the knife-block or cutter-block, as seen in Fig. 2. This mandrel is provided with a cork or piece of rubber, F, which slides loosely on the sliding mandrel, but is large enough to fill the bore of tube B and slide therein with sufficient friction to hold the cork in place wherever it is allowed to rest in the well-tube.

Operation: The knife-point is swung down

into the slot in the cutter-block, and the upper end of mandrel caught in the notch of the knife, as shown in Fig. 3.

The knife-block A is lowered down the well-tube B till the knife reaches a little distance below the place where we wish to begin to cut. Now the knife-block is drawn up a short distance, while the cork or rubber F is held still by mere friction, as this cork fits the well-tube tightly. This motion releases the mandrel or bolt E from the knife, while the spring D pushes the knife forward into a cutting position, as seen in Fig. 1. With the point of the knife thus against the casing or well-tube, by means of jars the knife is forced downward, splitting the well-tube, as shown in Fig. 1.

After the well-tube is split a sufficient distance the sides will collapse, so the casing can be withdrawn.

Instead of the cork or rubber F, a set of oval springs may be used, as seen in dotted lines at F in Fig. 3, thus utilizing the principle of friction, just the same as with the cork or rubber; and in practice I prefer to use steel springs.

I do not broadly claim a pivoted or vibrating knife, or any of the separate devices above described; but I believe that the above-described combination and arrangement of devices form a novel construction of machine for splitting the casings of oil-wells.

Having thus fully described my invention, what I claim is—

A tube extracting or splitting machine having the knife C pivoted eccentrically, in combination with the spring D, cutter-block A, mandrel E, and friction device F, for the purpose of cutting or splitting one side of the well casing or tube, substantially as set forth.

The above specification of my said invention signed and witnessed, at Petrolia, this 8th day of April, A. D. 1879.

HART HARRIS.

Witnesses:

S. McCAUGHTRY,  
THOMAS RICHARDSON.