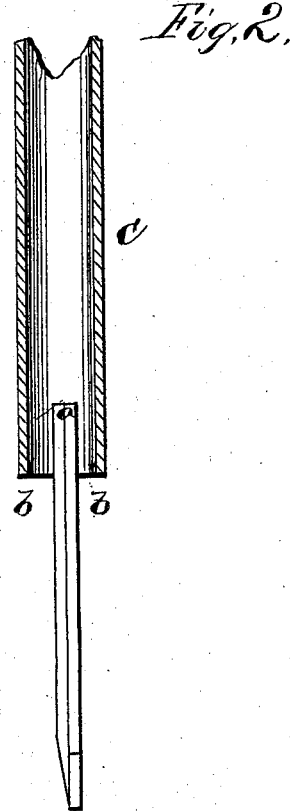
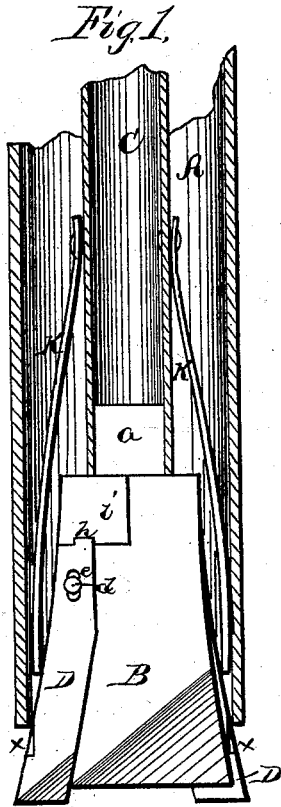


T. P. THOMPSON.  
Well-Borer.

No. 203,217.

Patented April 30, 1878.



Witnesses:

*A. C. McArthur,*

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# UNITED STATES PATENT OFFICE.

THOMAS P. THOMPSON, OF PORTAGE, WISCONSIN.

## IMPROVEMENT IN WELL-BORERS.

Specification forming part of Letters Patent No. 203,217, dated April 30, 1878; application filed July 27, 1877.

*To all whom it may concern:*

Be it known that I, THOMAS P. THOMPSON, of Portage, in the State of Wisconsin, have invented certain new and useful Improvements in Well-Borers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The nature of my invention consists in the construction and arrangement of a tool or drill for well-boring purposes, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a longitudinal section of my well-borer. Fig. 2 is an enlarged detailed section of the same.

A represents the exterior pipe, through which the drill-tool B works. This drill is attached by means of a shank, *a*, in the lower end of a pipe, C, which passes within the outer pipe A. The drill and shank are so arranged that an opening or passage, *b*, will be left at the lower end of said inner pipe C on each side of the drill.

The drill B is, on each side at the edge, provided with a flange or side cutter, D, which is pivoted to the drill by a pin or screw, *d*, passing through a slot, *e*, thereby allowing the cutter to move a limited distance up and down. At the upper end of the cutter is a short tenon, *h*, which enters a notch or recess made in a stop, *i*, on the side of the drill.

While drilling, the side cutters are, of course, forced upward, with their tenons in said recesses, and held there by means of springs K K, one on each side of the interior tube C. By drawing up this tube the edge of the outer tube A strikes notches or shoulders *x* on the outer edges of the side cutters D,

pulling the same downward, so as to release the tenons from the stops, when the lower ends of the cutters can swing inward by action of springs K K, so as to pass with the drill within the outer tube A.

By my invention, as thus constructed, I remove the borings by hydraulic power without removing the drill.

A force-pump is attached to the small or inside pipe C, and water is forced down that pipe, which water comes out around the drill, and then carries with it the borings up through the outside pipe A, and in that way the borings are taken up without raising the drill. The drill works a little below the outside pipe, and makes a hole large enough to let the outside pipe down easy, and yet the drill can be let down or taken up through the pipe. The outside pipe is left in the well when done, and serves as tubing. Gas-pipe may be used for the pipes A C.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The drill B, provided with the pivoted and sliding side cutters D D, substantially as herein set forth.

2. The combination of the drill B, the side cutters D D, having slots *e* and tenons *h*, the recessed stops *i*, and the springs K, all constructed substantially as and for the purposes herein set forth.

3. In a well-borer, the combination of the drill B, having shank *a*, the pivoted and sliding side cutters D D, springs K K, interior pipe C, and exterior pipe A, all constructed substantially as and for the purposes herein set forth.

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

THOMAS PETER THOMPSON.

Witnesses:

E. S. BAKER,  
S. L. PLUMB.