

C. H. MORGAN.
Screw-Taps.

No. 150,346.

Patented April 28, 1874.

Fig. 1.

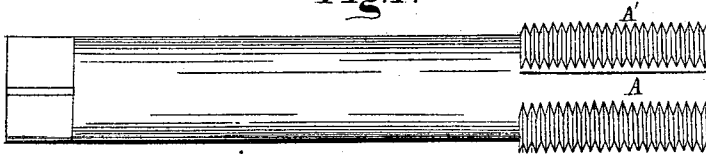
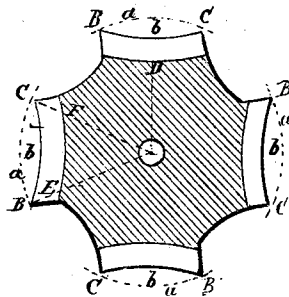


Fig. 2.



Witnesses.

A. T. Cornell.
Geo. H. Kerner

Inventor.

C. H. Morgan.
Per. Burridge & Co.
Atty.

UNITED STATES PATENT OFFICE.

CHARLES H. MORGAN, OF CLEVELAND, OHIO.

IMPROVEMENT IN SCREW-TAPS.

Specification forming part of Letters Patent No. **150,346**, dated April 28, 1874; application filed December 29, 1873.

To all whom it may concern:

Be it known that I, CHARLES H. MORGAN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Screw-Tap, of which the following is a full and complete description, reference being had to the accompanying drawings making a part of this specification.

My invention consists in a screw tap with the screw-threads concaved between the cutting-edges and the heels, and with the radiuses of the cutting-edges greater than those of the heels.

Figure 1 is a side view of the tap. Fig. 2 is an end view of the same enlarged.

Like letters of reference refer to like parts in the several views.

In the drawing, A represents the grooves or flutes cut along the tap transversely to the threads A'. The threads of the ordinary screw-tap are made circular, as indicated by the dotted lines *a*, Fig. 2, while the threads of this one are concave, as seen at *b* in Fig. 2, from the point B to the heel C. By making taps in this way they will operate with more ease and less friction than those of ordinary construction, and at the same time the said improvement prevents clogging or choking up by chips in withdrawing the taps. The bottom D of the thread is also concave and parallel to the upper part *b* of the thread, as seen in Fig. 2, which is an enlarged view, to show more fully the nature of the invention; the sides of the threads partake of the same concave character as that of the top and bot-

tom. The heel C of the threads are of less diameter than the points B, and this is essential to the value of the improvement, as the greatest strain upon the tap is in threading the hole; and, as the points B of the threads are above the concave *b*, it follows that this tap will thread the hole with more ease, and is not as liable to break or strain the female thread in tapping or withdrawing as those in ordinary use. The radius E, Fig. 2, is one-sixty-fourth of an inch or more longer than the radius F, and the radius D is the shortest.

In tapping a hole in any metal, all taps raise a chip or burr in the flute A, and in backing out this chip or burr is brought in contact with the top of the thread on taps where the taps are made convex, thereby wedging the tap. With mine the heel C, although being lower than the cutting-edge B, presents, by being made concave, an almost square edge, C, which cuts or turns the chip or burr into the flute A, and thus prevents the tap from breaking, and also preserves the thread in the hole tapped.

Having described my invention, I claim—

A screw-tap with the screw-threads concaved between the cutting-edges and the heels, and with the radiuses of the cutting-edges one-sixty-fourth of an inch or more longer than the radius of the heels, substantially as set forth.

CHARLES H. MORGAN.

Witnesses:

W. H. BURRIDGE,
A. L. CHAMPION.