L. D. CASTLE & J. W. STRONG.

Tap.

No. 215,264. Patented May 13, 1879.

Fig: 1.

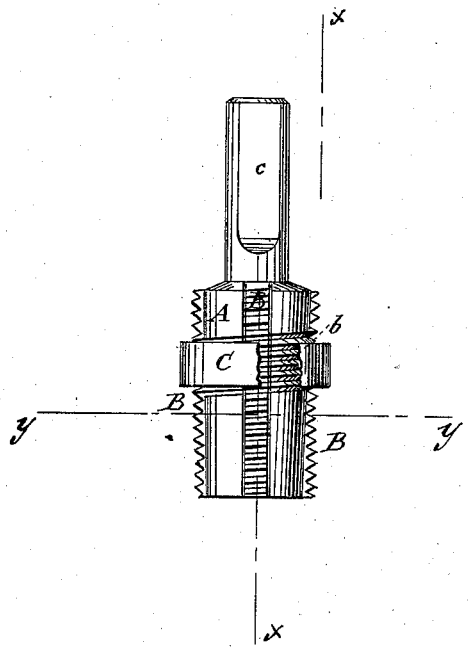


Fig: 2.

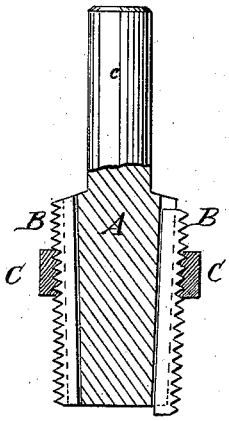
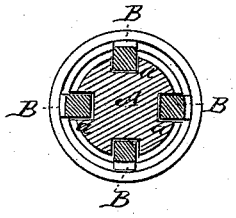


Fig: 3.



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UNITED STATES PATENT OFFICE.

LEWIS D. CASTLE AND JOHN W. STRONG, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN TAPS.

Specification forming part of Letters Patent No. **215,264**, dated May 13, 1879; application filed August 31, 1878.

To all whom it may concern:

Be it known that we, LEWIS D. CASTLE and JOHN W. STRONG, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and Improved Tap, of which the following is a specification.

The object of this invention is to provide a tap that can be constructed more cheaply and will last longer than those now in use.

The invention will first be described in connection with the drawings, and then pointed out in the claim.

In the accompanying drawings, Figure 1 represents a side elevation of my improvement. Fig. 2 is a longitudinal section of the same on line *x x;* and Fig. 3 is a transverse section thereof on line *y y.*

Similar letters of reference indicate corresponding parts.

A represents the body of the tap, and *c* is the shank thereof, to which a wrench is applied in operating the tap. The surface of A tapers toward the lower end, and its surface, about a third of the distance from the upper end, is formed with a screw-thread, as shown at *b.*

a a a a are longitudinal grooves in the surface of the body A, equidistant from each other. The bottom of the groove *a* has the same taper as the surface of body A.

B are the cutters, which are made separately, of finely-tempered steel, and of a size to fit and slide freely in the grooves *a.* These cutters B have cutting-threads similar to an ordinary tap, which threads project above the surface of body A when the cutters are in place. The cutters B are held in place in the groove *a* by an internally-threaded ring, *c,* which engages the threads of the cutters B and the thread *b* on the body of the tap, as seen in Figs. 1 and 2. The cutters are thereby held in position, and the tap may be used as usual. When the lower part of the cutters B, or of any one of them, becomes worn out, they may be set down lengthwise to bring the remaining portion into use, and secured by the ring *c,* as described. To adjust the cutters so as to increase the diameter of the tap, thin pieces of metal may be placed in the grooves *a* beneath the cutters B. This construction also permits the removal of a broken cutter and insertion of a new one.

In placing the cutters in their grooves *a,* the thread *b* becomes a guide for setting them so that the cutters will follow in the proper lead; and, if desired, the end of the cutters that projects when they are set down may be ground off.

We are aware that it is not new to provide a tap-stock with longitudinal grooves to receive a similar grooved frame that receives cutter held by a threaded ring; but the latter has a shoulder on the inside at one end that comes in contact with a shoulder on stock. This cannot be done in the smaller sizes, and necessitates the cutting away of so much of the stock as to weaken and render it liable to twist.

What we claim is—

A tap consisting of the grooved tapered body A, threaded at *b,* the cutters B, arranged in grooves *a,* and the threaded ring C, all constructed substantially as shown and described.

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Witnesses:
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