

C. Krebs,
Wood Auger.

N^o 77,819.

Patented May 12, 1868.

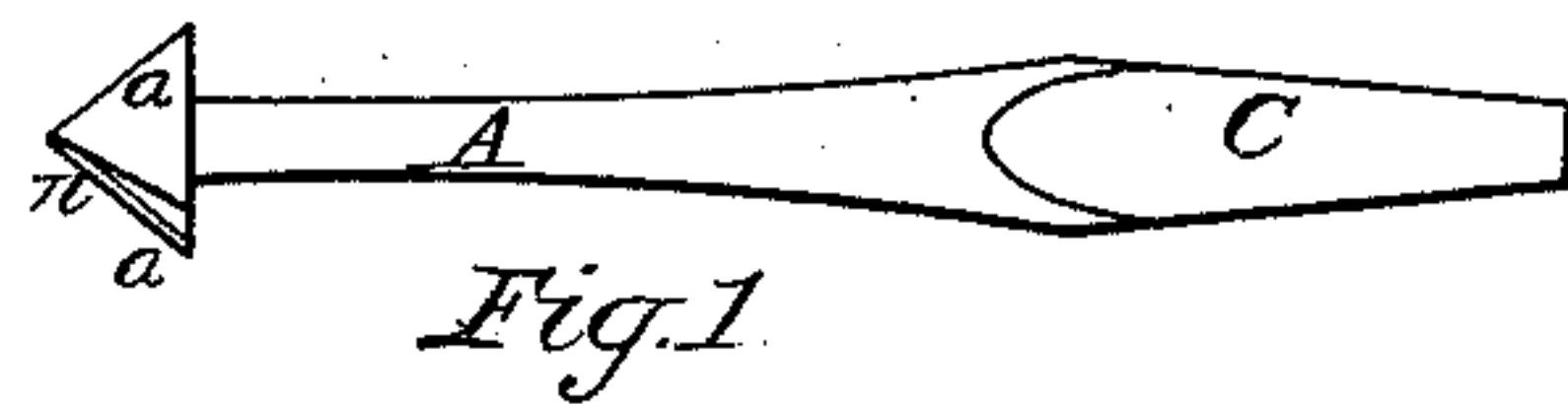


Fig. 1.

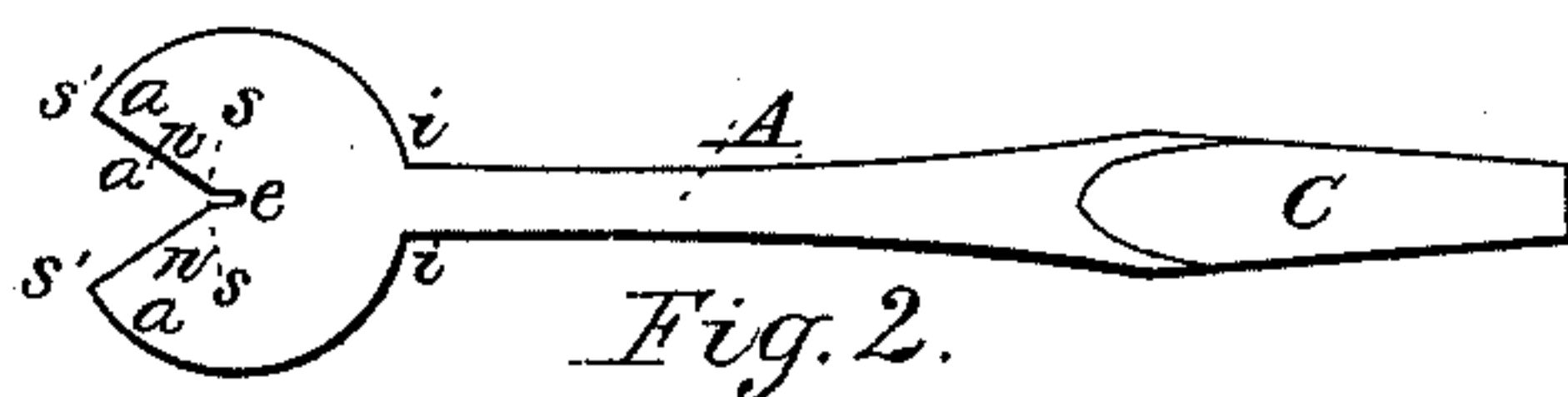


Fig. 2.

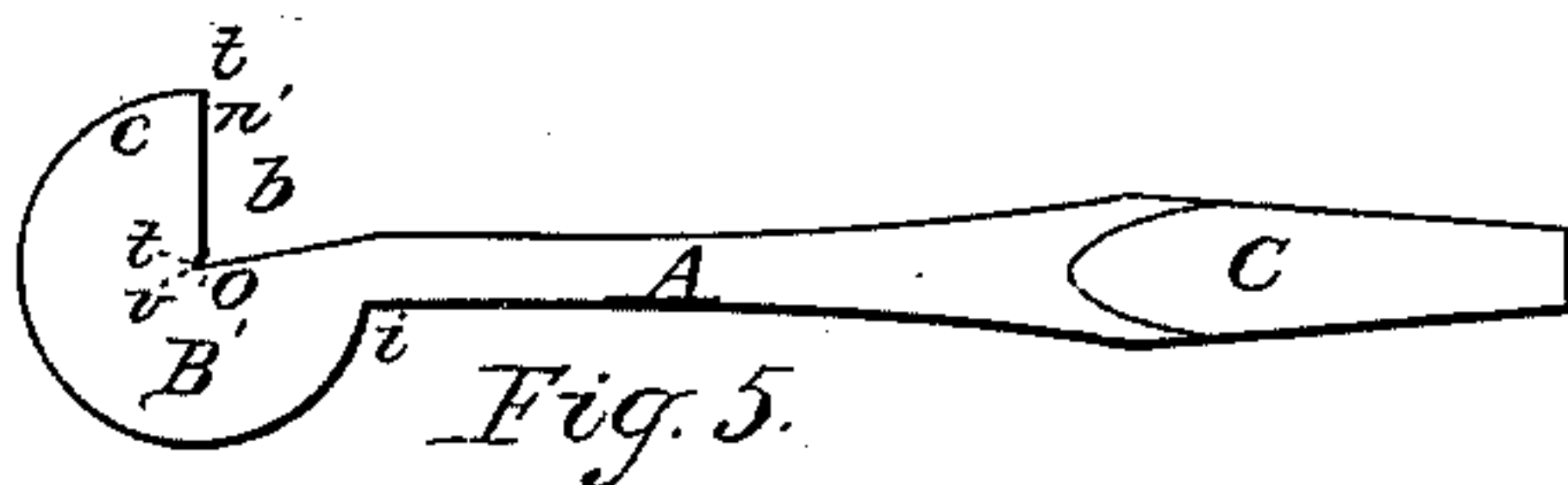


Fig. 5.

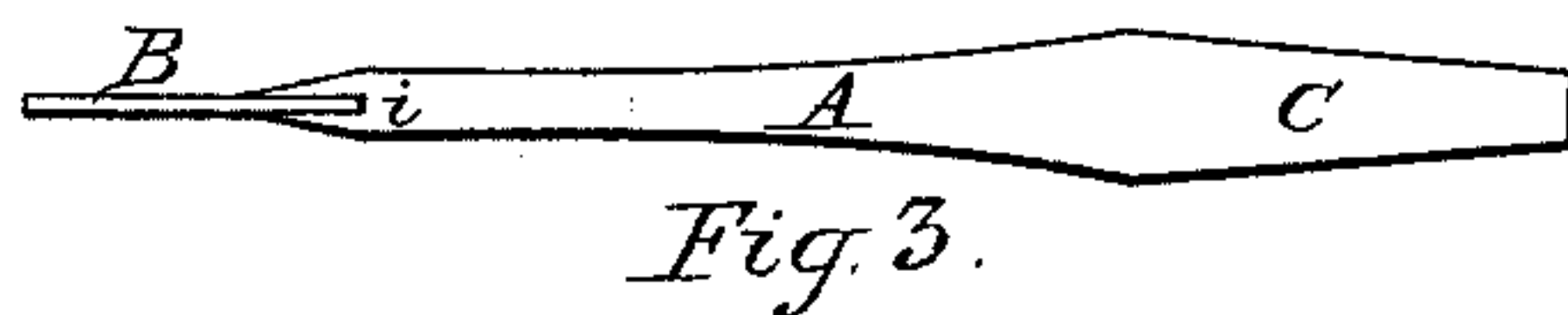


Fig. 3.

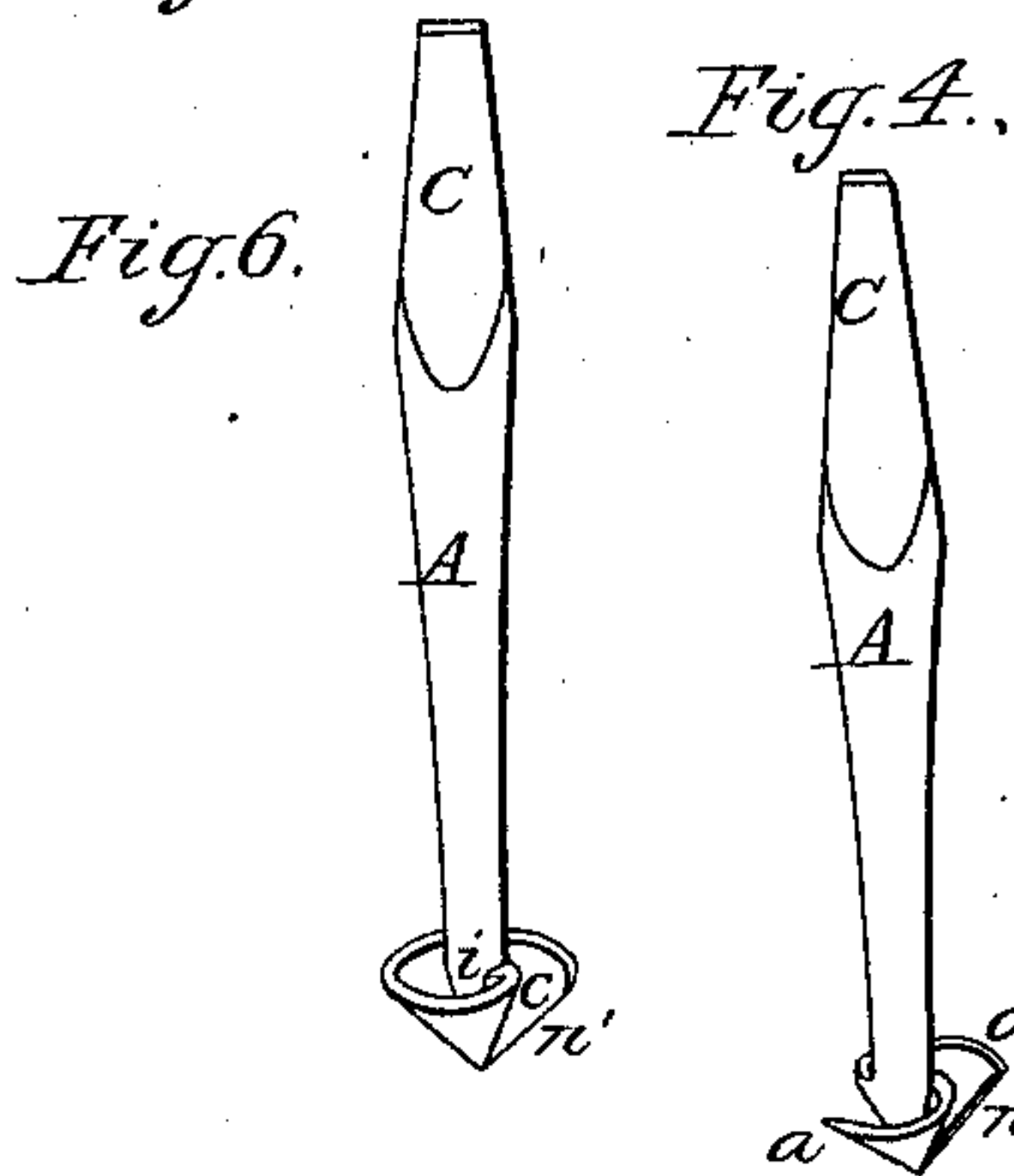


Fig. 4.

Fig. 6.

Witnesses.
T. A. Curtis
J. P. Buckland.

Inventor.
Charles Krebs

United States Patent Office.

CHARLES KREBS, OF WEST SPRINGFIELD, MASSACHUSETTS.

Letters Patent No. 77,819, dated May 12, 1868.

IMPROVEMENT IN COUNTERSINKS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES KREBS, of West Springfield, in the county of Hampden, and Commonwealth of Massachusetts, have invented a new and useful Improved Countersink; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side view of a countersink with my improvement, having two lips or cutting-edges.

Figure 2 is a view of said countersink-blank, showing its shape before the lips are turned.

Figure 3 is another side view of said countersink-blank.

Figure 4 is a perspective view of said countersink.

Figure 5 is a view of a countersink-blank, having one lip or a single cutting-edge, before said lip is turned, and

Figure 6 is a perspective view of said countersink after the lip is turned.

The nature of my invention consists in the construction of a countersink, to be used in wood, whereby the same shall have a thinner and more perfect cutting-edge than can possibly be made as at present constructed.

As they are now made, the lower or conical portion of the countersink is forged or swaged out solid, and a small channel is then cut, extending from the apex to the base of the cone, leaving one side or edge of said channel in such form as that it may be sharpened; but it is well known to wood-workmen that the best countersinks, when constructed as above described, are very imperfect in their operation, and do not smoothly and neatly countersink a hole made in wood, but merely grind away the wood in the upper part of the hole, leaving it very rough and jagged in appearance, and the channel behind the edge cannot be made sufficiently large to permit the wood, which is cut or ground out of the wooden substance being worked, to be forced out of the tool.

By my invention, I am enabled to produce a countersink which admits of being sharpened with an oil-stone to a very sharp cutting-edge, and which, instead of merely grinding away the wood, neatly and smoothly cuts it away, and much quicker, too, than can be done with the ordinary countersink, and, there being sufficient space behind the edge, and between the stem and lips, a free passage of the shavings out of the tool is provided, and it is not liable to get choked or clogged, as is the case with the ordinary countersink.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and application to use.

A piece of suitable metal is forged out, having a circular blade, B, of a proper thickness, and the stem A, and a portion of said blade B, equal to about one-sixth of the whole, is then cut out, leaving the space *a'*, extending from the points *s' s'*, in the circumference, to the points *s s*. A small slot, *e*, is then cut, extending from the points *s s* to about the centre of the blade B. The edges, *n n*, are then brought to an approximate degree of sharpness, and the whole blade is then heated sufficiently, and the lips *a a* are then turned back towards the stem A, and are easily formed into a conical shape, as shown in fig. 1, the slot *e* in fig. 2 serving to furnish sufficient space in turning to produce a sharp and perfect point, *s*, in fig. 1. This produces a countersink, having two lips, *a a*, and two cutting-edges, *n n*.

I make a countersink having one lip, *c*, and one cutting-edge, *n'*, as follows: The flat blade B and stem A, both constituting a blank, are forged as before described, and a portion equal to about one-quarter of the blade, extending from the point *i* in the stem A to the point *t'* in the periphery of the blade B, is removed or cut out, leaving the space *b* as shown in fig. 5, that which is to be the cutting-edge, *n'*, extending from the point *t'* to the point *t*. From the point *t* the blade is cut to about its centre, and from thence to the point *i'* on the stem, leaving the small triangular space *o* near the centre, which space *o* furnishes sufficient turning-space, in turning back the lip *c*, to form a perfect point, *o'*, as shown in fig. 6. The edge *n'* is then brought to a sufficient approximate degree of sharpness, and the blade B is then heated sufficiently, and the lip *c* is turned back towards the stem A, and at the same time is somewhat twisted around the base of the stem A, or around its junction with the blade B, which operation gives the blade B its conical form, as shown in fig. 6. The cone, or conical por-

tion, is then tempered sufficiently, the edge sharpened, and the tool is then ready for use. The end, C, of the stem A is then tapered in a rectangular form for insertion into a common bit-stock for use.

It is not actually necessary, in forming a blank having two lips, that exactly one-sixth of the blade shall be cut out or removed, as, if a little more or less were removed, the countersink might operate tolerably well; but I find by experiment that if about that proportion be removed, a better countersink is produced. The same may be remarked in regard to the blank for a countersink having one lip, as it might operate tolerably well if either a little more or a little less than one-quarter of the blade were cut out, but I prefer to remove about that portion, as a better tool is the result.

In manufacturing in quantities, these blanks may be forged or swaged out at one blow of a drop or swage, and proper tools may be constructed, and used in the remaining operations of bringing them to a finished countersink, so that they can be as cheaply made as those now in use, and they will last much longer, as there is more available material to wear away.

I am aware that a device has been heretofore used as a countersink, as in Letters Patent granted to W. G. A. Bonwill, dated October 10, 1865, and numbered 50,328, and also the device now commonly used, but I disclaim any and every part of said devices, irrespective of my arrangement and construction.

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

A countersink, having one or more bent lips, when constructed substantially as herein described and set forth.

CHARLES KREBS.

Witnesses:

T. A. CURTIS,

J. P. BUCKLAND.