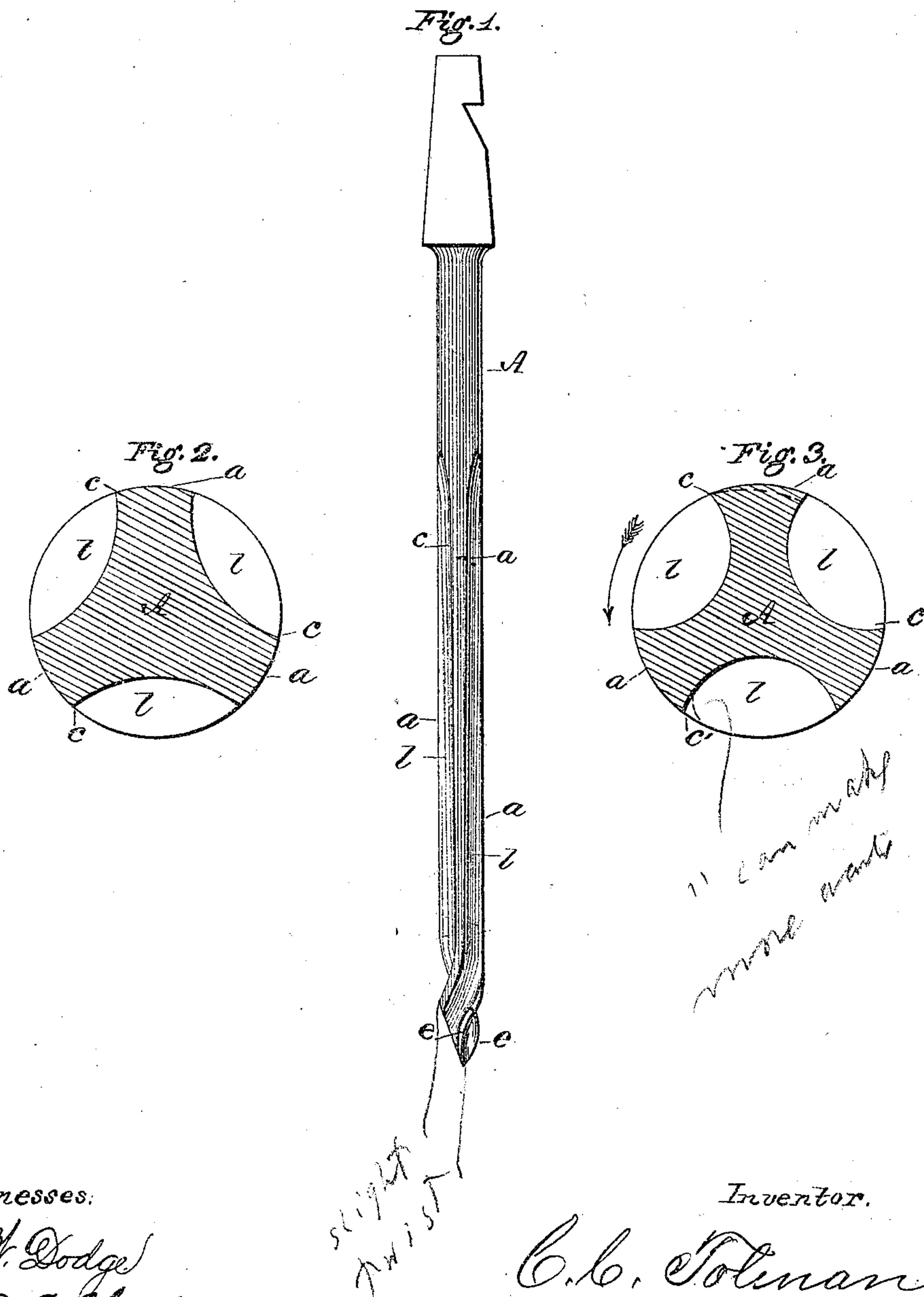


C. C. TOLMAN.
Boring-Bits.

No. 151,450.

Patented May 26, 1874.



Witnesses:

H. H. Dodge

Wm. E. Chaffee

Inventor.

C. C. Tolman
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UNITED STATES PATENT OFFICE.

CHESTER C. TOLMAN, OF SHELBURNE FALLS, MASSACHUSETTS.

IMPROVEMENT IN BORING-BITS.

Specification forming part of Letters Patent No. 151,456, dated May 26, 1874; application filed April 30, 1874.

To all whom it may concern:

Be it known that I, CHESTER C. TOLMAN, of Shelburne Falls, in the county of Franklin and State of Massachusetts, have invented certain Improvements in Boring-Bits, of which the following is a specification:

My invention consists of a bit for boring in wood, which is made with three semicircular grooves formed longitudinally in its sides, in such a manner as to form bearings and cutting-edges, and leave spaces for clearance of the chips, as hereinafter more fully set forth.

Figure 1 is an elevation, showing the bit complete. Fig. 2 is a transverse section enlarged, for the purpose of more clearly illustrating its construction and mode of operation; and Fig. 3 is the same modified.

In constructing my bit, I form the body A of a straight piece of steel, of uniform diameter, and make in its sides three longitudinal grooves, *l*, semicircular in form, as shown in Figs. 1, 2, and 3. The ribs *a*, which constitute that portion of the periphery between the grooves *l*, are sections of a circle on their outer faces, and form bearings throughout their length, by which means the bit, when in use, is caused to bore a straight hole, and is prevented from having its point moved to one or the other side when the wood is cross-grained, or the hole is being bored diagonally in reference to the grain of the wood. The front edge *c* of each of the ribs *a* forms a cutting-edge its whole length, as shown in Fig. 2, and these, as the bit advances, by their action, complete the operation, by cutting away the rough fibers at the sides, thus leaving the hole very smooth and perfect, as well as straight. If desired, the cutting-edges *c* may be made more acute by changing the form of the grooves *l* and extending the point *c'* further forward, as indicated by the dotted line at the bottom of Fig. 3, in which case the outer face of the ribs *a* will be correspondingly broader, though the rear side of the ribs may be cut away and leave them of the same width as before; or, if preferred, the outer face of the ribs *a* may be

made slightly eccentric, as represented by the dotted line at the upper side of Fig. 3, which will tend to make the cutting-edges a little more acute, and reduce the friction on the outer face of the ribs *a*.

When the grooves *l* are made wider and shallower, as represented in Fig. 2, so that their outer edges are their narrowest portion, the tool can be readily formed in a drop, by which process they can be made much cheaper and more rapidly than any form of twisted bit or gimlet.

If desired to make it, as represented in Fig. 3, with the grooves deeper and narrower, for the purpose of rendering the cutting-edges *c* more acute, it may be done either by drawing it through a die of corresponding form, or by cutting out the grooves by means of a milling-tool, after forging it in a drop to as near the form as possible. As, however, the form represented in Figs. 1 and 2 I find to work well, and it being the simplest and cheapest to make, I prefer it for that reason.

Any form of point may be used on this bit, and it may be made with or without a screw-point, as preferred. For the smaller sizes I prefer the style of point shown in Fig. 1, and which is formed by simply twisting the end slightly, and then grinding off the ribs to a central conical point, which forms three curved cutting-lips, *c*, which penetrate the wood with ease and rapidity. A bit thus made also frees itself from the chips most readily, and never clogs.

Having thus described my invention, what I claim is—

As a new article of manufacture, a boring bit, consisting of the body A, having parallel grooves *l*, with the bearing-surfaces *a* and cutting-edges *c*, substantially as shown and described.

CHESTER C. TOLMAN.

Witnesses:

CHAS. M. SMITH,
W. C. DODGE.