

(No Model.)

Q. A. BUTTON.
PROCESS OF TEMPERING TOOLS.

No. 405,827.

Patented June 25, 1889.

Fig. 1.

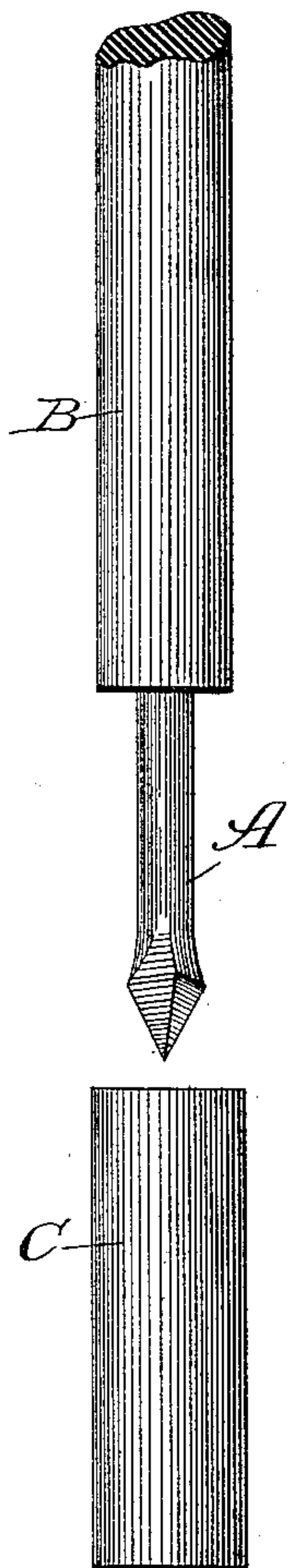
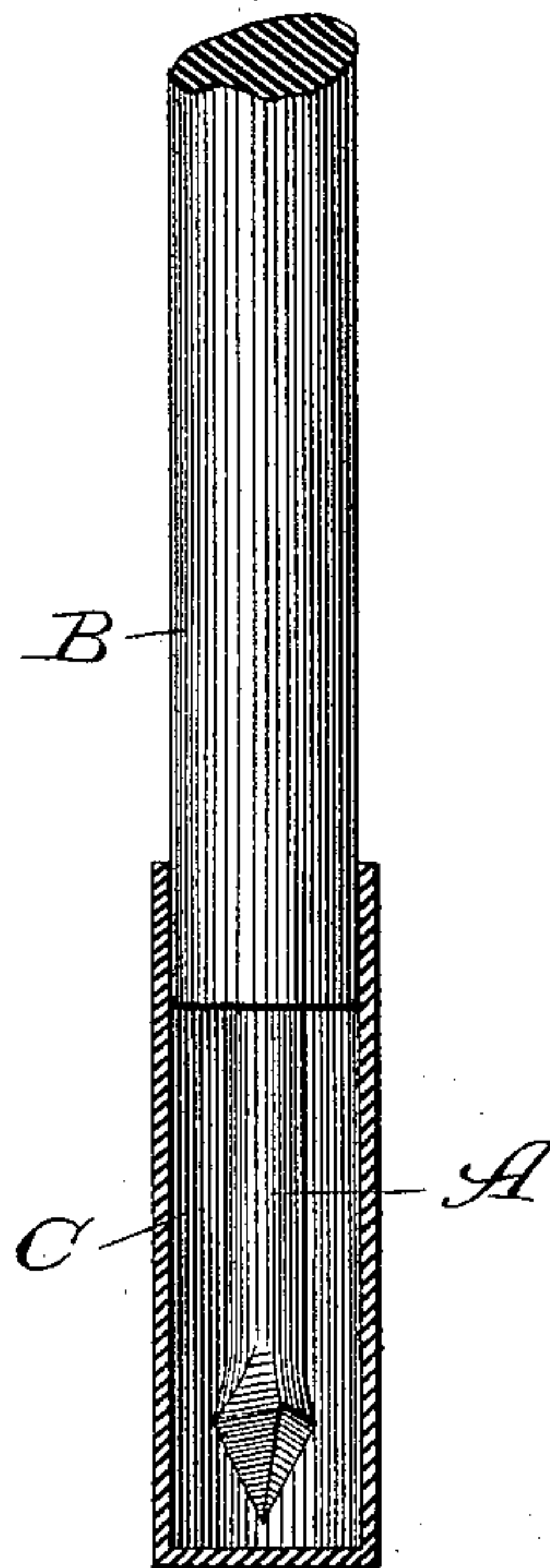


Fig. 2.



Witnesses.

Geo. E. Gaylord.
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PROCESS OF TEMPERING TOOLS.

SPECIFICATION forming part of Letters Patent No. 405,827, dated June 25, 1889.

Application filed July 30, 1888. Serial No. 281,471. (No model.)

To all whom it may concern:

Be it known that I, QUINCY A. BUTTON, a citizen of the United States, residing at Austin, Illinois, have invented a new and useful

5 Improvement in the Process of Tempering Tools, of which the following is a specification.

In the drawings, Figure 1 is a side elevation of a tool and its cap or sheath before they are put together to temper the tool, and Fig. 2 is

10 a side elevation of the tool with the cap or sheath on the same in section.

A represents the tool, B its shank, and C the cap or sheath.

In tempering a tool according to my improved process I first make a metallic cap or sheath, open at one end for the admission of that end of the tool which constitutes its working part. This metallic sheath may be made of different kinds of metals, and should

20 extend far enough back on the shank of the tool to cover all of that part which it is desired should be tempered. It should fit the shank of the tool with sufficient closeness to prevent its falling off, and yet with sufficient

25 looseness to be readily slipped on or off. After it has been placed over the end of the tool heat is applied in any suitable manner, and the temperature of the tool is raised to the usual degree required in tempering it. After it has been sufficiently heated the tool is dropped into water with the cap or sheath still on it, where it is allowed to cool. The cap or sheath prevents the water from coming into direct contact with the working portion

35 of the tool, and thus prevents it from cooling

as rapidly as the part uncovered. It will be found that the working part of the tool is finely tempered and in the best condition to do its work.

Of course it will be understood that by 40 making the sheath or cap of different degrees of thickness different degrees of temper can be secured in the tool; but the process in all cases remains the same, and consists in enclosing the working part of the tool in a metallic sheath or cap closed at one end while the tool is being heated and while it is being cooled in the water.

While I have illustrated a drill in the drawings, and have spoken in the specification of 50 a tool, I do not mean to confine myself to any special kind of tool, but on the contrary wish to state that my process is applicable to all kinds of tools, drills, and edged or pointed instruments which require to be tempered, 55 and whose tempered or working parts can be inclosed in a metallic cap or sheath during the act of heating and cooling.

What I regard as new, and desire to secure by Letters Patent, is— 60

The process of tempering tools, which consists in covering the working parts thereof, then heating and finally cooling the same while still covered, so as to prevent direct contact with the cooling-fluid, substantially as 65 described.

QUINCY A. BUTTON.

Witnesses:

THOMAS A. BANNING,
GEORGE S. PAYSON.