

(No Model.)

A. U. SMITH.
COUNTERSINK.

No. 371,387.

Patented Oct. 11, 1887.

Fig. 1.

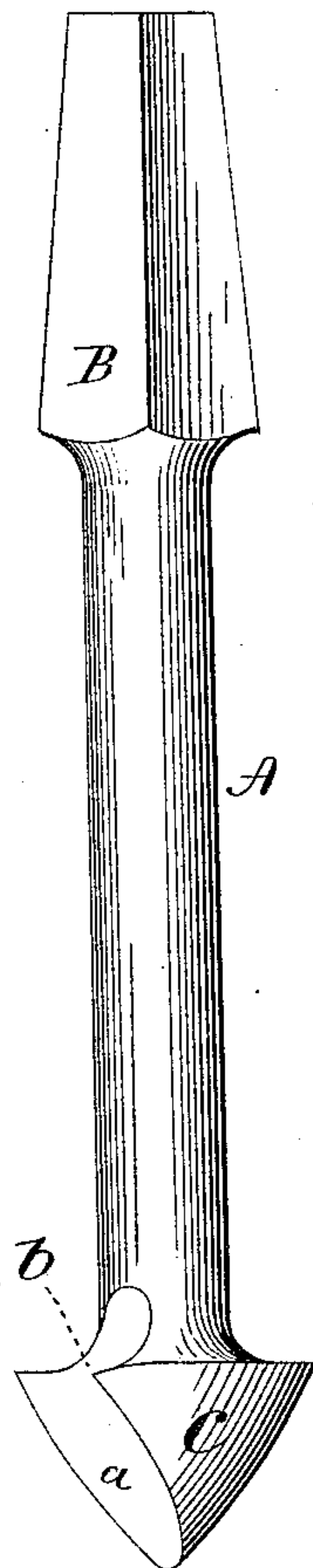
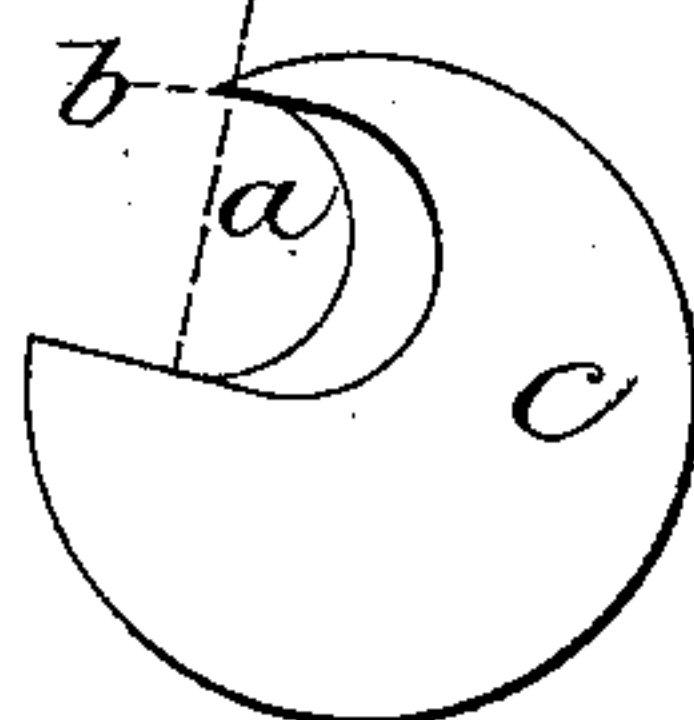


Fig. 2.



Witnesses.
J. H. Shumway,
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Albert U. Smith,
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Wm. E. Earle.

UNITED STATES PATENT OFFICE.

ALBERT U. SMITH, OF SEYMOUR, CONNECTICUT, ASSIGNOR TO NORMAN SPERRY, OF SAME PLACE.

COUNTERSINK.

SPECIFICATION forming part of Letters Patent No. 371,387, dated October 11, 1887.

Application filed April 25, 1887. Serial No. 236,054. (No model.)

To all whom it may concern:

Be it known that I, ALBERT U. SMITH, of Seymour, in the county of New Haven and State of Connecticut, have invented a new
5 Improvement in Countersinks; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same,
10 and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view enlarged; Fig. 2, a point end view.

This invention relates to an improvement in
15 countersinks adapted to cutting conical cavities in wood, and particularly to that class in which the head of the countersink is made in the form of a smooth-surfaced cone with a single cutter radiating from the apex of the
20 cone.

In the usual construction of this class of countersinks the cutting-edge has been made straight from the apex of the cone, so that the cut comes directly in a plane parallel with the
25 surface worked upon, or the cutting-edge has been inclined or curved backward. While such cutters will work rapidly into the wood, there is great liability of splitting the surface of the wood around the hole, because of the
30 direct cut produced by the countersink-head, and this difficulty in the backwardly-inclined or curved cutters is greatly increased over the vertical cutting-edge because of the upward tendency of the cut. Again, because of such
35 direct cut, it is very difficult to produce a smooth cavity, except in the very hardest woods, as the cutter will jump on the cross grains and run smoothly over the direct grains.

The object of my invention is the construction of the countersink-head so that the cut
40 may be downward and into the recess, in contradistinction to being parallel with the surface, or backwardly and outwardly inclined thereto—that is, so as to make an inward
45 shearing cut.

A represents the spindle of the countersink,

terminating at one end in the usual shank, B, and at the other end in the cone-shaped head C. Into one side of the head a recess, *a*, is cut, and this cut is made so that one side comes in
50 substantially the plane of the axis of the head, as seen in Fig. 2, the recess being back of this side, and the width of this recess measuring at substantially right angles to the said forward side, the line *d*, Fig. 2, indicating such
55 line, is less than half the larger diameter of the head, as also seen in Fig. 2. From this it follows that the rear or cutting edge, *b*, formed by such recess, will be curved or inclined forward from the apex of the cone to
60 the extreme point at the larger diameter of the head—that is, of substantially a helical shape curving forward. This peculiar shape presents a cutting-edge forwardly and circumferentially inclined; hence in operation the cut
65 is downward inwardly inclined to the surface through which the countersink is working, in contradistinction to the cut made in the plane of the surface, or backwardly and outwardly inclined thereto, as produced in the
70 usual construction of the countersink. The result is, that the countersink has an outward and inward shearing or shaving cut necessarily smooth, and avoids the jumping or chattering which necessarily attends the use of a
75 radial cutter.

I claim—

The herein-described countersink, consisting of a spindle having a conical head, with a vertical recess in one side extending from the
80 apex upward through the cone, one side of said recess being substantially in the plane of the axis of the cone, the width of the said recess being less than one-half the larger diameter of the head, the outer edge of the other side
85 of the recess forming a forwardly-inclined cutting edge, substantially as described.

ALBERT U. SMITH.

Witnesses:

E. E. ADAMS,
R. H. CLARK.