

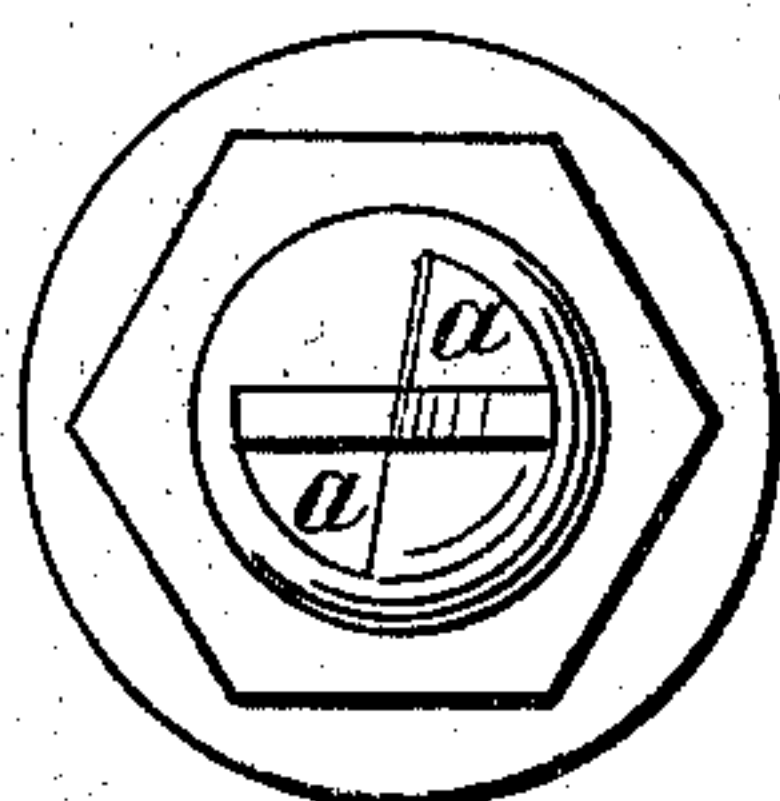
P. A. WHITNEY.

Metal Reamer.

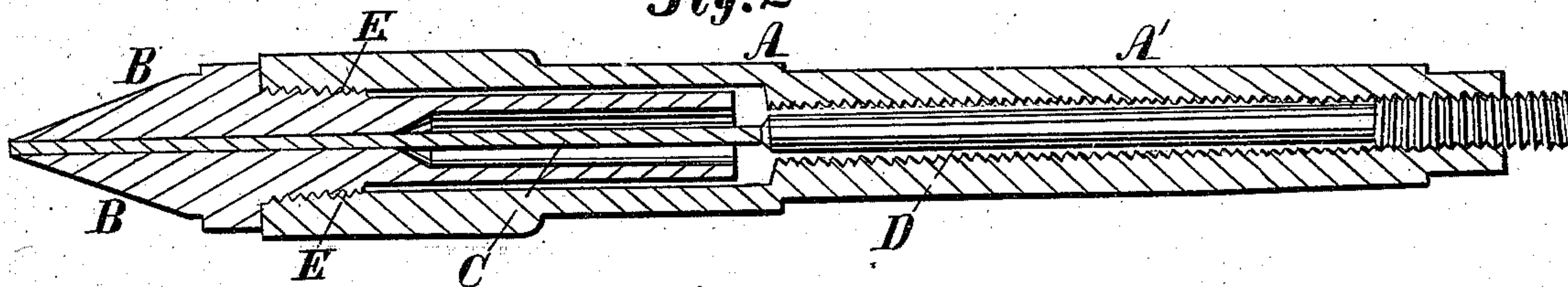
No. 83,348.

Patented Oct. 20, 1868.

*Fig. 1*



*Fig. 2*



*Witnesses:*

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*P. A. Whitney*  
*per* *Truman*  
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# United States Patent Office.

P. A. WHITNEY, OF WOODSTOCK, VERMONT.

Letters Patent No. 83,348, dated October 20, 1868; antedated October 16, 1868.

## IMPROVEMENT IN COUNTER-SINK.

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, P. A. WHITNEY, of Woodstock, in the county of Windsor, and State of Vermont, have invented a new and useful Improvement in Counter-Sinks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improvement in counter-sinks or reamers for metal, and consists in the arrangement, within a hollow stock, of the cutter, which is made of a piece of flat steel, between two clamping-nose pieces, through which it is fed downward by a feeding-screw, as it wears away, as will be more fully described on reference to the drawings making part of this specification, in which—

Figure 1 represents an end view of my improved reamer, and

Figure 2, a longitudinal section through the centre of the same.

Similar letters of reference indicate corresponding parts.

A represents the stock, having a central circular passage through its whole length, considerably enlarged at the lower end.

B B are semi-circular clamping-jaws, having the lower ends tapered, to agree with the taper of the cutter, and a longitudinal hole in the other end, to allow the feed-screw D to work, to feed the cutter as it becomes shorter, by reason of wear.

D is the feed-screw, which works in the screwed upper end of the central opening in the stock.

C is the cutter, which consists of a simple flat piece of steel, having the lower end ground to the proper taper and angle, and which fits a flat groove in the faces of the semicircular clamping-pieces B B, which have a screwed portion, E, to correspond with the internal screw in the lower end of the stock.

This screw-joint is made slightly tapering, so that, when screwed up, the parts B B will hold the cutter between them sufficiently tight to prevent any trembling or clattering of the cutters.

The tapered points of the parts B B form a guide

for the cutter, which prevents the cutting-edges of the same from chattering as it is performing its work. It also prevents the cutter being fed into the work too fast, limiting the amount of the same to the distance which the cutter projects beyond the said tapered point.

Portions of the said tapered point are removed, as shown at *a a*, to allow a passage for the discharge of the chips.

The shank A' of the stock is inserted in the mandrel of the drill-press when it is set to work.

It will be obvious from the foregoing description that my improved reamer or counter-sink possesses several advantages over those now in use; as, for instance, the cutter is very easy and simple of construction, and may be tempered throughout its whole length, and will last a great length of time, and, when worn out, is readily replaced by a new one, and the arrangement of the tapered point, to govern the depth of cut, and to serve as a guide to the cutter, to compel it to cut smoothly and truly, is very important.

It is well known that in reaming or counter-sinking metal with a tool having two cutting-edges, one edge will frequently meet greater resistance than the other, which will cause the tool to spring, and perhaps react against the said other edge, and drive that into the metal on its side of the hole, until, by that means, the former finds relief, and passes the point of great resistance, when the tool will spring back again, causing that edge to cut deeper than it should, until finally the tool is set into such a chattering and unsteady action, that it is impossible to do the work smoothly or truly, all of which is avoided, in my improved implement, by the tapered guide-point.

Having thus fully described my invention,

What I claim; and desire to secure by Letters Patent, is—

The herein-described improved counter-sink, when constructed substantially as and for the purpose described.

P. A. WHITNEY.

Witnesses:

WM. D. FOSTER,  
WILLIAM E. JOHNSON.