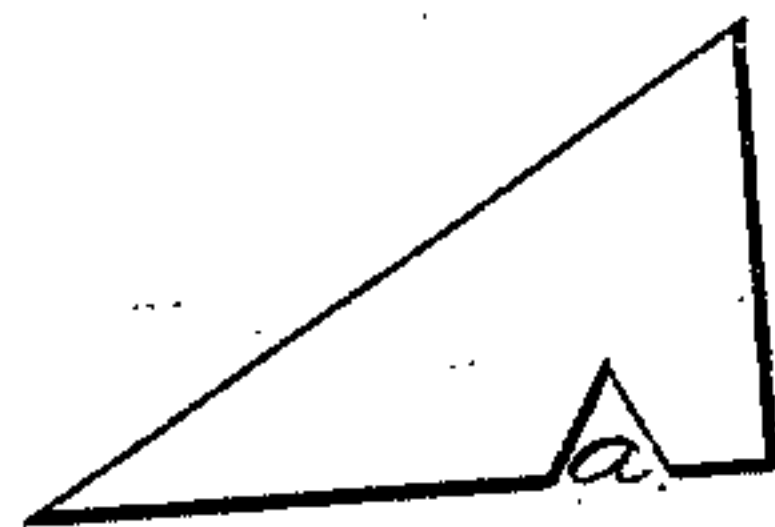


*E. Lyman,*

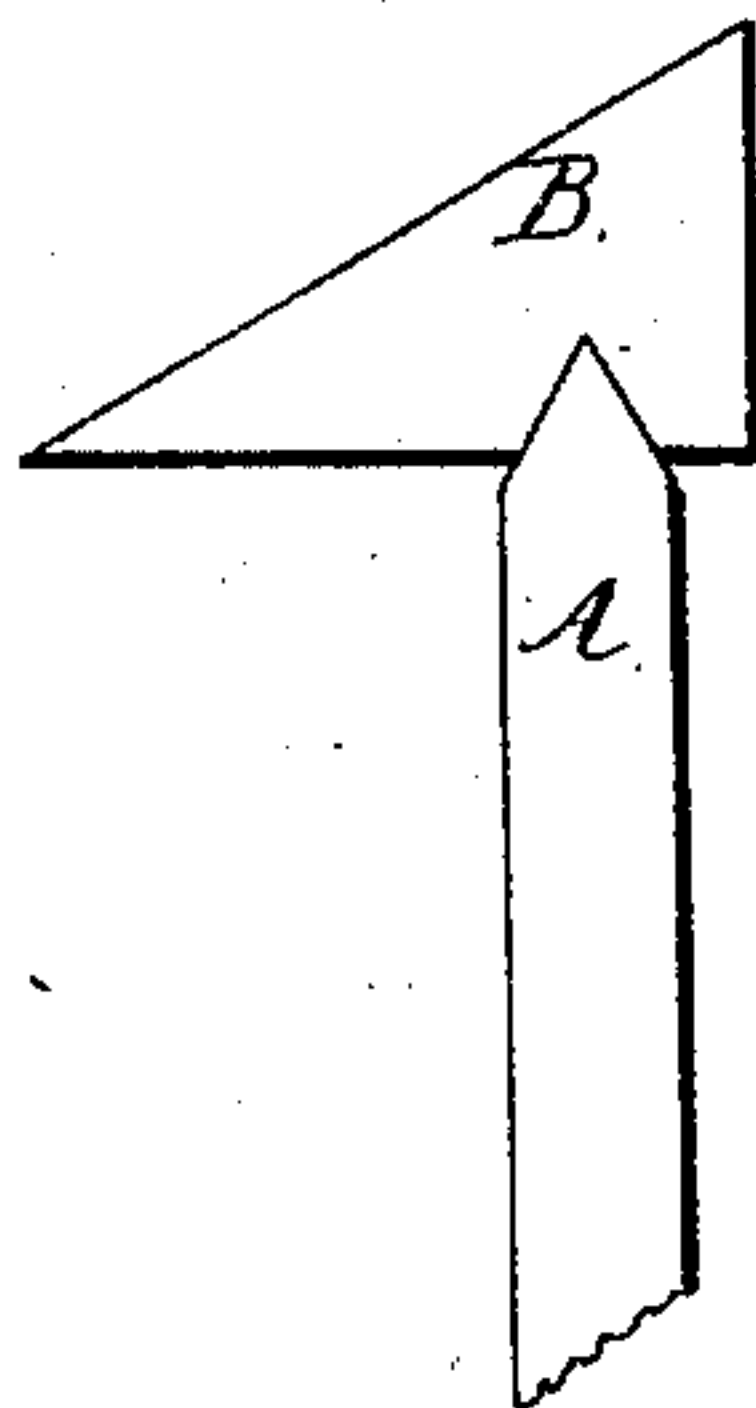
*Turning Gauge,*

*N<sup>o</sup> 57,934.*

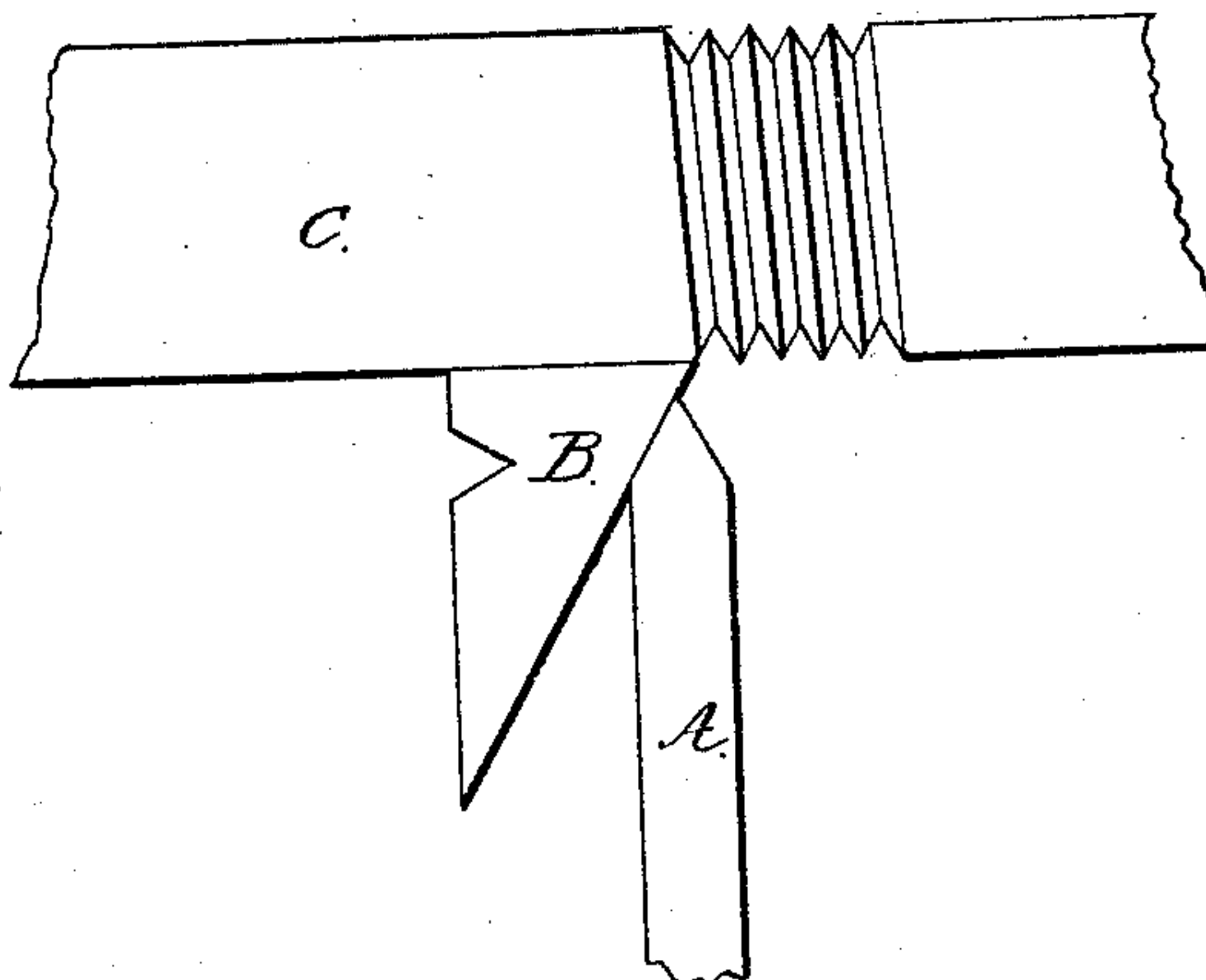
*Fig. 1. Patented Sep. 11, 1866.*



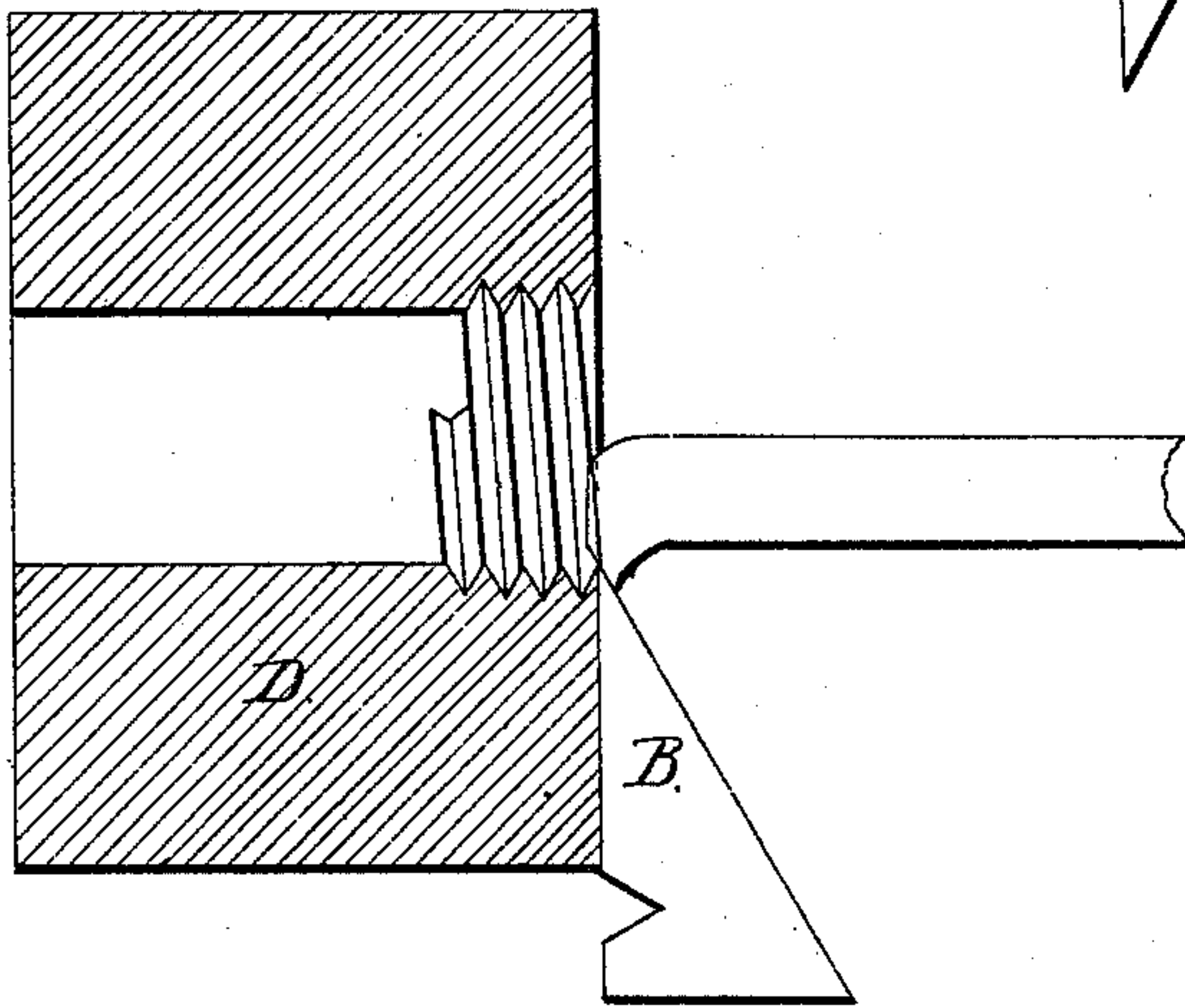
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Witnesses.*

*John H. Humway  
W. A. Heine*

*Inventor.*

*Edward Lyman  
His Atty  
J. H. E. Carls*

# UNITED STATES PATENT OFFICE.

EDWARD LYMAN, OF NEW HAVEN, CONNECTICUT.

## IMPROVED GAGE FOR SCREW-CUTTING TOOLS.

Specification forming part of Letters Patent No. 57,934, dated September 11, 1866.

*To all whom it may concern:*

Be it known that I, EDWARD LYMAN, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improved Gage for Screw-Tools; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of my improved gage. Figs. 2, 3, and 4 illustrate the application of my gage to its various uses.

In forming screw-tools and setting them for the purpose of cutting screw-threads, the eye of the operator is generally his only guide, which renders it almost impossible to cut a perfect thread, or so that both sides of the thread shall be at the same angle; and the same difficulty existing in both external and internal threads, it is considered extremely difficult to cut an external and internal thread so that the one shall fit the other with perfect accuracy. By my improvement this difficulty is entirely overcome; and my invention consists in forming a gage which combines within itself a gage for forming the cutter, a gage for setting the cutter for an internal thread, and a gage for setting the cutter to cut an external thread.

To enable others skilled in the art to construct and use my improvement, I will proceed to describe the same as illustrated in the accompanying drawings.

The angle of the thread most approved and generally used is sixty degrees. I therefore, from a piece of sheet-steel of the proper thickness, (say one-sixteenth inch, more or less,) cut a triangle, the three angles being thirty degrees, sixty degrees, and ninety degrees, as seen in Fig. 1. Upon one side (I prefer the base) I cut a triangular notch, *a*, the two sides being at an angle of thirty degrees from the base. Thus formed, tempered, and finished, my gage is complete. Its first use is as a guide to form the cutter in Fig. 2.

A represents the tool or cutter, its point to be ground or otherwise formed to fit the notch *a* in the guide B, as seen in Fig. 2. Thus formed and tempered, the tool is ready for use.

In Fig. 3 I represent my gage as in use for adjusting the tool to cut an external thread, C being the bar upon which the thread is to be cut. Place the shorter side, or perpendicular, of the gage upon the bar, as seen in said Fig. 3, then place the tool A against the gage, one of the angles of the point lying flat upon the longer side or hypotenuse of the gage. Thus guide the cutter to the bar, and the thread will be cut both sides alike and at an equal angle.

To cut an internal thread, as illustrated in Fig. 4, place the base of the gage B upon the face of the article D, in which the thread is to be cut, and set the cutter so that one of the angles of the point is in line with the hypotenuse or longer side, as seen in said Fig. 4. Thus set, the internal thread may be cut with a certainty that the external thread, cut as before described, will fit with perfect accuracy.

Thus, by my gage, may be easily accomplished that which has heretofore been impossible except by chance.

The angles of the thread to be cut will, of course, depend upon the angles of the gage, which must therefore be formed accordingly.

I do not broadly claim a guide or gage by which to form or shape cutting-tools; but,

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

A gage combining within itself a guide for forming the cutter with guides for setting the cutter, substantially in the manner and for the purpose herein set forth.

EDWARD LYMAN.

Witnesses:

JOHN E. EARLE,  
JOHN H. SHUMWAY.