(No Model.)

J. E. WOODBRIDGE.

DIE FOR CUTTING SCREW THREADS.

No. 269,981. Patented Jan. 2, 1883.

Fig. 1.

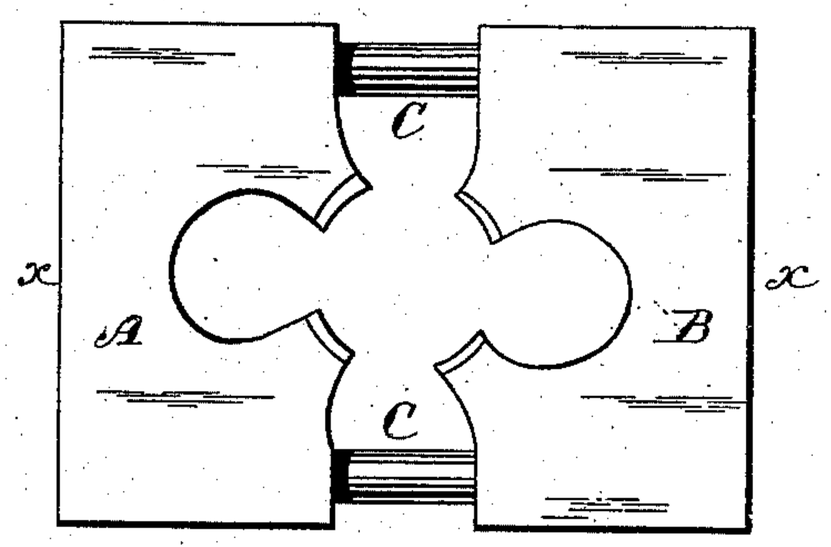


Fig. 2.

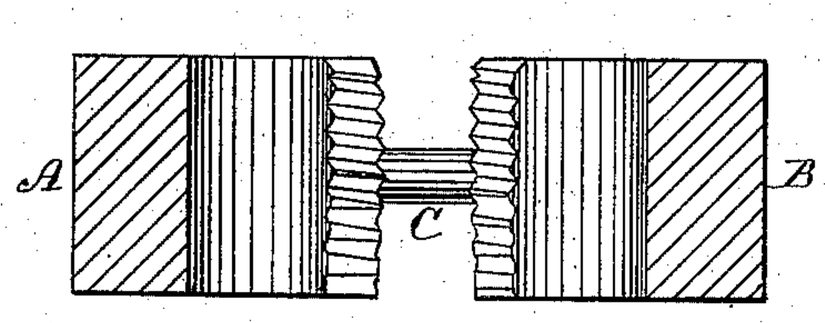
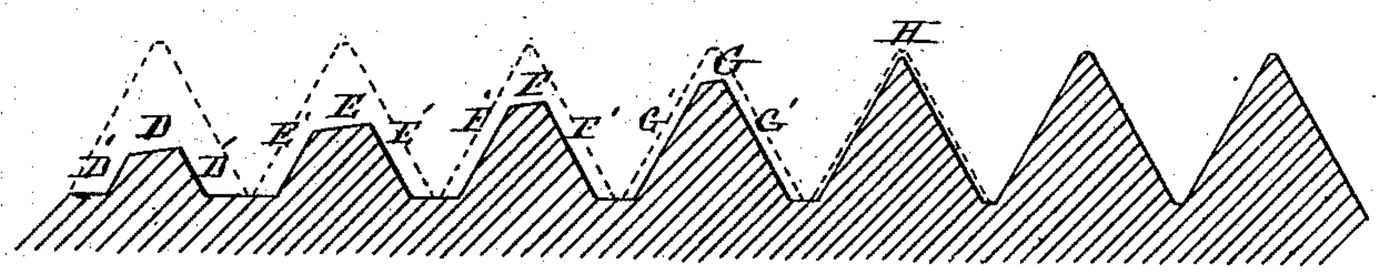


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES E. WOODBRIDGE, OF HARTFORD, CONNECTICUT, ASSIGNOR TO HIMSELF AND FREDERICK N. GARDNER, OF SAME PLACE.

DIE FOR CUTTING SCREW-THREADS.

SPECIFICATION forming part of Letters Patent No. 269,981, dated January 2, 1883.

Application filed September 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. WOODBRIDGE, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Dies for Cutting Screw-Threads; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvement relates to dies intended to be used in a die-stock for cutting screw-threads upon bolts or other cylindrical metallic rods; and my invention has for its object the cutting of a more perfect thread by a more efficient tool than has heretofore been in use.

In the accompanying drawings, illustrating my invention, Figure 1 shows a top view of my improved dies. Fig. 2 is a cross-section of the same on the line *x x* of Fig. 1. Fig. 3 is an enlarged section, showing the form of the thread in my improved dies.

A and B are the two parts of my improved die, held together by the rods C C at the proper distance for cutting a thread of a given gage.

D E F G H are sections of the thread in successive convolutions of the die. The dotted lines over the teeth of the section show the form of the completed thread of the screw at the lower end of the die, or the part which first commences to cut the thread upon the bolt. The teeth are freed on an inclined line in the customary manner. In my improved die the lower convolutions of the die, forming the cutting-teeth, are likewise freed or cut away at the sides, as shown at D′ E′ F′ G′, the lower or first entering teeth being cut away the most, and each successive tooth or convolution being less and less freed, so that each tooth cuts into the metal as the die advances, both at the sides and top, instead of wholly at the top, as in the ordinary construction. In this way each tooth is made to cut over its whole surface instead of only deepening the cut made by the preceding tooth. The die also enters more easily and readily upon the end of the bolt, as the teeth are more pointed, and they are therefore less likely to slip and tear the thread than where they are obliged to cut a wide channel upon first entering.

The pitch of my improved teeth is uniform—that is, there is the same distance from center to center between the threads. The change in the width of the teeth does not alter the distance apart. At the top of the die a few turns of the complete thread are left, in order to complete and finish the thread upon the bolt and properly guide the die.

What I claim as my invention is—

1. A screw-cutting die in which the cutting-teeth are of less width and height at the lower or cutting end of the die and gradually increase to the full size of the thread at the upper or finishing end, substantially as described.

2. A screw-cutting die having its lower or cutting end freed on the sides of the teeth between the successive threads, substantially as described.

JAMES E. WOODBRIDGE.

Witnesses:

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