

(No Model.)

W. ROSS.
DIE FOR FORGING REAMER BLANKS.

No. 554,734.

Patented Feb. 18, 1896.

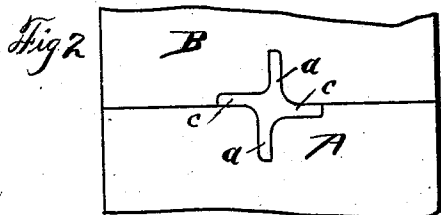
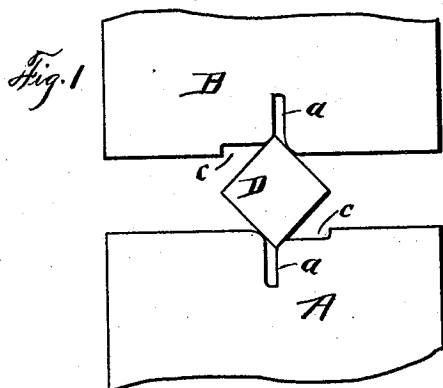


Fig. 5

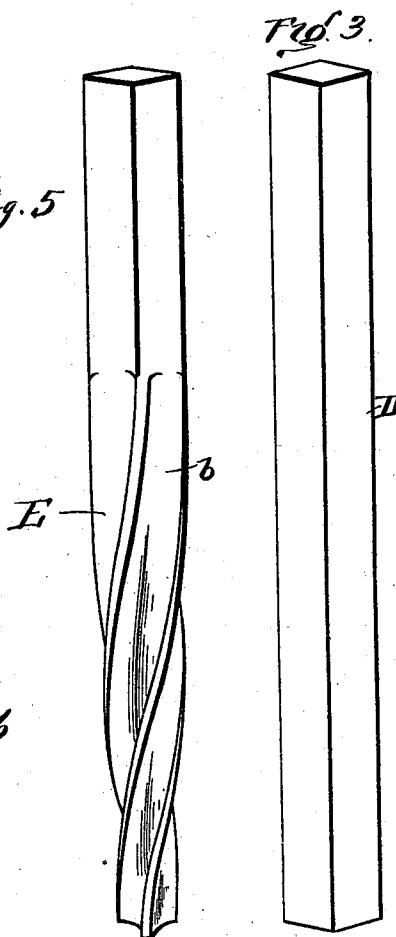


Fig. 6

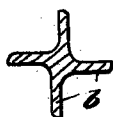


Fig. 4

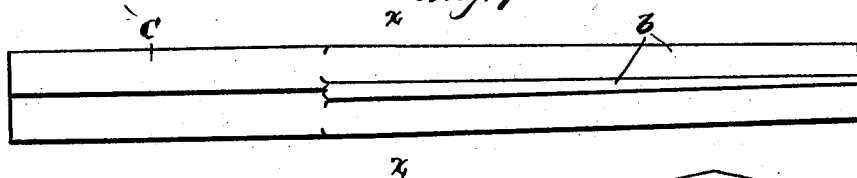
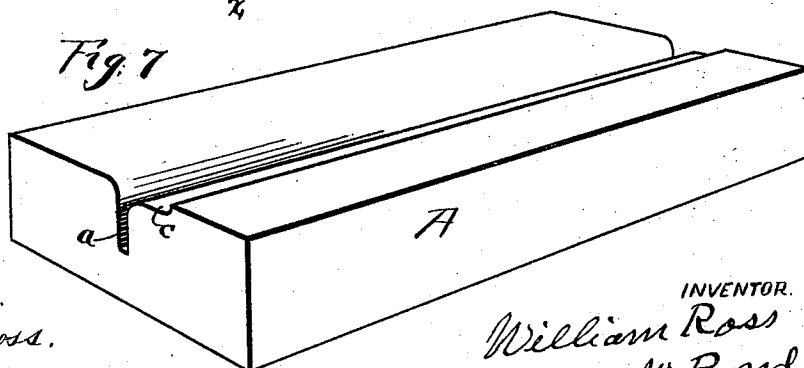


Fig. 7



WITNESSES:

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DIE FOR FORGING REAMER-BLANKS.

SPECIFICATION forming part of Letters Patent No. 554,734, dated February 18, 1896.

Application filed November 12, 1894. Serial No. 528,494. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ROSS, a citizen of the Dominion of Canada, residing at Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Dies for Forging Reamer-Blanks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a view showing the dies parted and showing a bar of metal from which the reamer is to be forged placed in position to be acted upon by the dies. Fig. 2 is a view showing the dies closed or placed one upon the other. Fig. 3 is a view showing the bar from which a reamer is to be forged and before any work has been done upon the bar. Fig. 4 is a view showing a reamer-bar after it has been forged to form the webs and before the bar has been twisted. Fig. 5 is a view showing a completed reamer. Fig. 6 is a transverse section through line *xx*, Fig. 4. Fig. 7 is a view showing the top or upper side of the lower die.

The present invention has relation to reamers; and it consists in the novel formation and construction hereinafter described and claimed.

Similar letters of reference indicate corresponding parts in all of the figures of the drawings.

In the accompanying drawings, A represents the lower die and B the upper die, and in use the upper die is given a reciprocating or striking movement, which machinery for giving this motion forms no particular part of the present invention and is not illustrated. The lower die is fixed or seated in the ordinary manner, which die is held in a solid foundation or bed. The dies A and B are each provided with the longitudinal grooves *a*, which grooves are formed of a depth to correspond with the width of the web *b* to be formed upon the bar C, and for the purpose of giving to the web the desired amount of

taper from the heel of the reamer to its entering end the grooves *a* formed in the dies A and B are tapered, as illustrated in Fig. 7, said grooves being so located that when the dies are placed in proper operative positions the grooves will be located substantially as shown in Fig. 1.

For the purpose of providing proper spaces for the webs *b* between the dies after said webs have been started each of the dies are provided with the recesses *c*, which recesses are formed upon opposite sides of the grooves *a*. In use or in the manufacture of reamers the bar from which a reamer is to be forged is formed square and of the desired length, after which the bar, such as D, is brought to the proper forging heat and is placed between the dies A and B, and the upper die given a reciprocating motion, which motion forms the webs by means of the recesses *c*, and for the purpose of forming or forging webs from each of the corners the bar D is rotated, so that diametrically-opposite corners will be acted upon at each stroke of the upper die. The webs not acted upon by the dies are received into the grooves *a* as the webs are formed. The bar D is rotated and acted upon by the dies until a bar, such as C, is produced, after which the bar C is twisted in any convenient and well-known manner, thereby producing a finished reamer, such as E, after which the reamer is placed in a lathe and properly turned to a given diameter.

It will be understood that the depth of the recesses *c* should decrease from the heel end of the dies, thereby giving to the finished or forged webs the desired amount of taper.

In describing the manner of manufacturing reaming-tools I have illustrated and described a rectangular bar; but it will be understood that this particular form of bar in cross-section is not absolutely necessary, and I do not desire to be limited to any form of bar in cross-section. Neither do I desire to be confined to the exact number of webs, as it will be understood that a greater or less number may be formed without departing from the nature of the present invention.

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

5 The combination of the dies A, and B, provided with the tapered grooves *a*, and the tapered recesses *c* located upon opposite sides of the grooves *a*, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence 10 of two witnesses.

WILLIAM ROSS.

Witnesses:

ERNEST C. BRYANT,
PHILIP LABELLE.