

E. J. POOLE.
 ROLLED METAL BAR FOR METAL CUTTING TOOLS.
 APPLICATION FILED JULY 8, 1907.

933,338.

Patented Sept. 7, 1909.

Fig. 1.

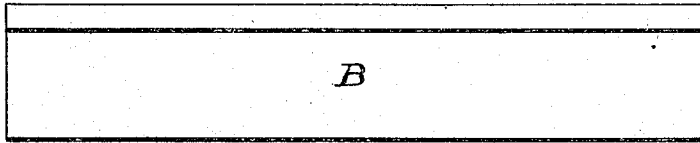


Fig. 2.

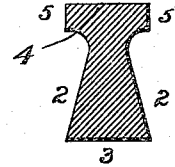


Fig. 3.

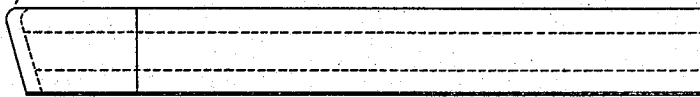


Fig. 4.

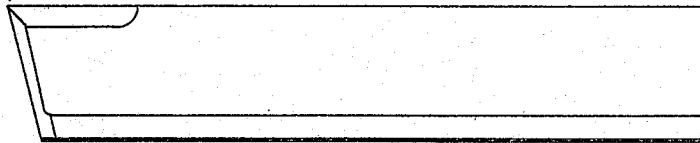


Fig. 5.

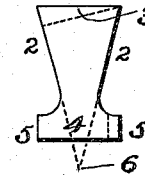


Fig. 6.

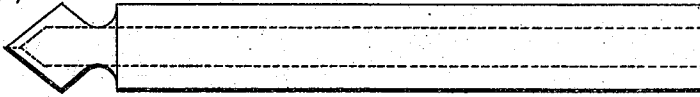


Fig. 7.



Fig. 8.



Fig. 9.



Fig. 10.

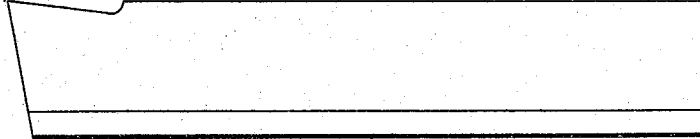


Fig. 11.



Ernest J. Poole, Inventor

Witnesses
 Caleb J. Pieber,
 D. M. Stewart

by *[Signature]*

Attorneys

UNITED STATES PATENT OFFICE.

ERNEST J. POOLE, OF READING, PENNSYLVANIA, ASSIGNOR TO THE CARPENTER STEEL COMPANY, OF READING, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

ROLLED-METAL BAR FOR METAL-CUTTING TOOLS.

933,338.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed July 8, 1907. Serial No. 382,597.

To all whom it may concern:

Be it known that I, ERNEST J. POOLE, a citizen of the United States, and a resident of the city of Reading, in the county of Berks, State of Pennsylvania, have invented certain new and useful Improvements in Rolled-Metal Bars for Metal-Cutting Tools, of which the following is a specification.

The object of my invention is to provide a novel form of rolled-metal bar adapted especially for use in the production of metal-cutting tools. The fact has been heretofore recognized that bars of rectangular cross-section such as are commonly used for this purpose, not only involve the employment of a greater amount of metal than is necessary to give required strength to the tools cut from them, but necessitate unnecessary labor and objectionable heating in reducing the end to proper cutting form; and to overcome these objections, bars of strengthened-web section have been used with resulting economy of material and labor. The reduced web portions of such sections however are not well adapted to withstand the strains, vertical and lateral, to which they are apt to be subjected, and more especially so when the lateral reinforcement thereof at the cutting end is removed; and I have found that the reduction of the common rectangular-section should be effected in a special manner so as to retain in the cross-section both the full width of the cutting edge ordinarily provided for lathe cutting tools, and such considerable thickness below said cutting edge as will provide ample strength throughout the height of the section in connection with the gradual reduction in thickness required to provide required clearance at the cutting end. These important conditions I have secured in the special cross-sectional form of bar hereafter described in connection with the accompanying drawings, the essential novelty in the construction of which is specifically pointed out in the claims.

Figures 1 and 2 are respectively a longitudinal and a cross-sectional view of a rolled-metal bar embodying my invention; the bar being shown in reverse position from that in which the cutting tools formed therefrom

are ordinarily employed. Figs 3, 4 and 5; 6, 7 and 8; and 9, 10 and 11, indicate different metal-cutting tools formed therefrom.

The rectangular-section bar ordinarily employed in cutting tools is well adapted for enabling the tools to be conveniently mounted, and my improved section, as shown, retains the practical advantages of this form, while the actual cross-section, which is inscribed in this old rectangular form, is so changed as to eliminate metal that is unnecessary to the securing of proper strength and which otherwise must be laboriously removed to provide required clearance at the cutting end. Such a reduction of the metal in the solid rectangular bar previously employed, I secure by rolling the bar to a cross-section having the form of an isosceles triangle with reinforcing lateral extensions 5—5 on the sloping sides thereof between the base 3 and apex 6 of said triangle to form a supporting base 4 for the bar as shown. The base-line 3 of this triangle is adapted to form the cutting edge of the finished tools (Figs. 3 to 11), and the opposite sides 2, 2 are equally inclined so as to provide the required tool clearance while retaining the bulk of the metal provided at 3 throughout the height of the section; said sides 2, 2 as shown converging toward the apex 6 lying outside the supporting base 4 of the cutter bar; and said base 4, formed by the reinforcing lateral extensions 5, 5 corresponding in width with the cutting edge or base line 3 of the triangle.

It will be seen that practically the full strength of the ordinary rectangular bar is retained in the reduced body or shank of a cutting tool formed from my improved bar, while the cutting end of the tool has the required clearance provided and at the same time retains practically the full strength and heat-conducting area which is provided when the end is forged in the usual manner on a solid bar. The full width of the cutting edge 3 of the bar is retained in the cutting end of the tool, a similar bar of reduced width being employed when narrow cutting-off or parting tools are required.

What I claim is:—

1. A rolled-metal bar for metal-cutting tool blanks having a triangular cross-section

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with lateral supporting extensions on the sloping sides between the base and apex of the triangle.

2. A rolled-metal bar for metal-cutting
5 tool blanks having a triangular cross-section with lateral extensions on the sloping sides between the base and apex of the triangle forming a supporting base for the bar corre-

sponding in width with the base of the triangle.

In testimony whereof, I affix my signature,
in the presence of two witnesses.

ERNEST J. POOLE.

Witnesses:

D. M. STEWART,
W. G. STEWART.