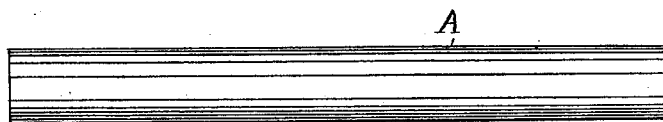


(No Model.)

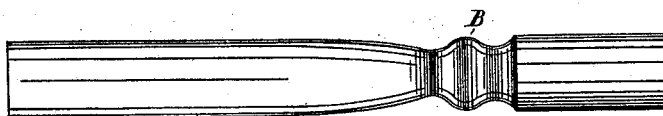
E. GRAH.  
METHOD OF FORMING TABLE KNIVES.

No. 418,710.

Patented Jan. 7, 1890.



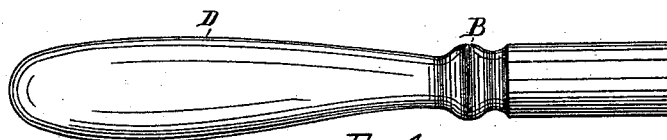
*Fig. 1.*



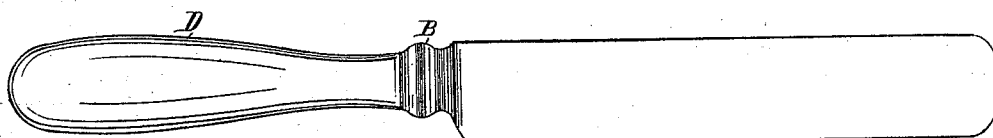
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Fig. 5.*

WITNESSES

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Att'y

# UNITED STATES PATENT OFFICE.

EMIL GRAH, OF TOLEDO, OHIO.

## METHOD OF FORMING TABLE-KNIVES.

SPECIFICATION forming part of Letters Patent No. 418,710, dated January 7, 1890.

Application filed May 6, 1889. Serial No. 309,756. (No model.)

*To all whom it may concern:*

Be it known that I, EMIL GRAH, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in a Method of Forming Knives; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to a method of forming knives, and appertains to that character of knives having a metal blade and an integral handle, wherein the handle is made hollow to give lightness of weight to the same.

The object of the invention is to construct the handle, shank, and blade of a single piece of metal.

Heretofore in the branch of the art to which my invention belongs it has been customary to first form the longitudinal perforation or bore before forming the shank portion. This step at this period is objectionable, for the reason that the bore is often extended too far, and in compressing the blank to form a shank the shell formed is crushed in. By the construction herein shown and described these objections are entirely obviated.

The invention consists in the method herein described of forming the shank of the knife, and afterward a hollow handle upon one side of the same and a blade upon the other, as will be more specifically described.

In the drawings, Figure 1 is a side elevation of the blank of metal from which is to be constructed a complete knife. Fig. 2 illustrates the first step in the process of constructing the knife, consisting of forming the shank portion of the blank, leaving upon one side of the shank a sufficient quantity of metal to form the handle and upon the opposite side sufficient quantity of metal to form the blade. Fig. 3 is a like view with a portion of the handle cut away to disclose a central core formed in the handle, which is the second step in the method herein claimed of forming

a knife. Fig. 4 is a like view showing the next step in the method, which consists in closing the opening in the handle; and Fig. 5 shows the final step in the process, which consists in forming the blade.

In carrying out my method a blank of metal A is prepared having the necessary size and weight to form a complete knife. The blank is then drop-forged or pressed to form a shank B, after which a longitudinal perforation C is formed in the handle D. The handle D is then subjected to a process either of drop-forging, rolling, or compression, that shall thoroughly close the perforation at the end of the handle, thereby forming a solid shell of the same which incloses the central core. The handle is preferably formed into the desired shape in the act of closing the perforations in the end thereof. The next step in the method is that of forming the blade, which may be done by forging, rolling, or in any preferred manner, after which the knife is finished in any desired taste.

It will be seen that by the method described the knife is formed from a single blank, thereby obviating the necessity of brazing or welding and adding to the strength thereof.

While I have described my method as particularly adapted to the manufacture of knives, it will be understood that it is equally well adapted to the manufacture of forks or any of the culinary articles analogous thereto.

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

The herein-described method of forming a knife having a hollow handle, which consists in first drop-forging or pressing the blank A to form a shank B, then forming the longitudinal perforation or bore C, closing said perforation or bore by drop-forging or pressing, and then rolling the remaining portion of the blank to form the blade, all substantially as shown and described.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

EMIL GRAH.

Witnesses:

WILLIAM WEBSTER,  
HAMILTON ROGERS.