

(No Model.)

W. H. CHAPIN.

FORGING BLANK FOR HOLLOW HANDLED CUTLERY.

No. 445,659.

Patented Feb. 3, 1891.

Fig. 1.

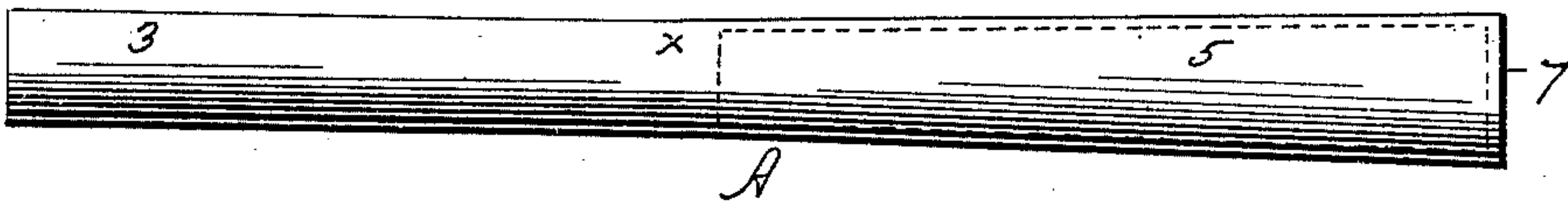


Fig. 2.

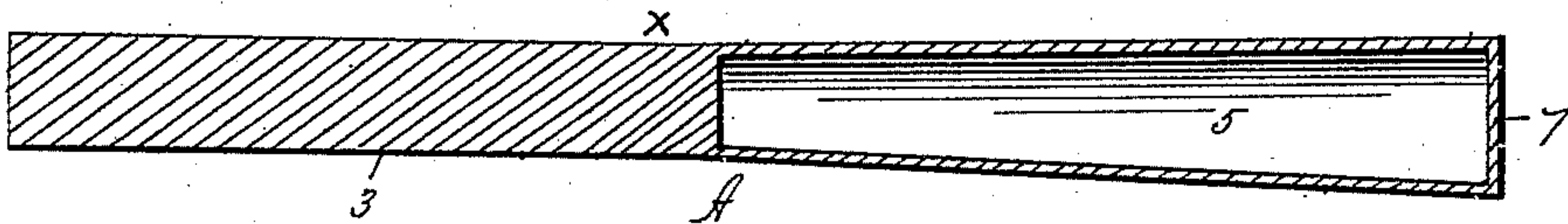


Fig. 3.

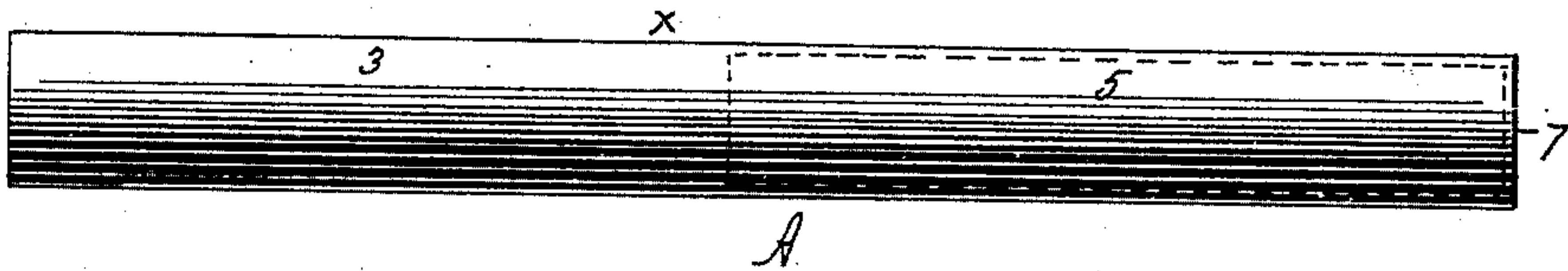


Fig. 4.

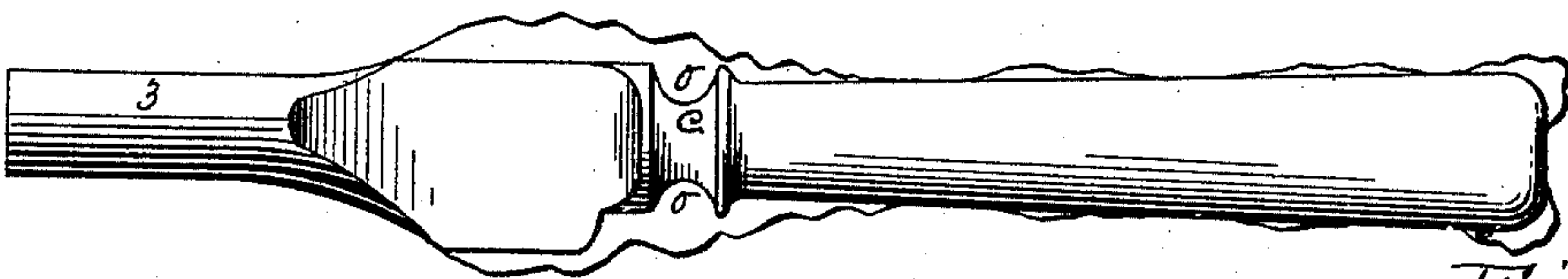


Fig. 7.

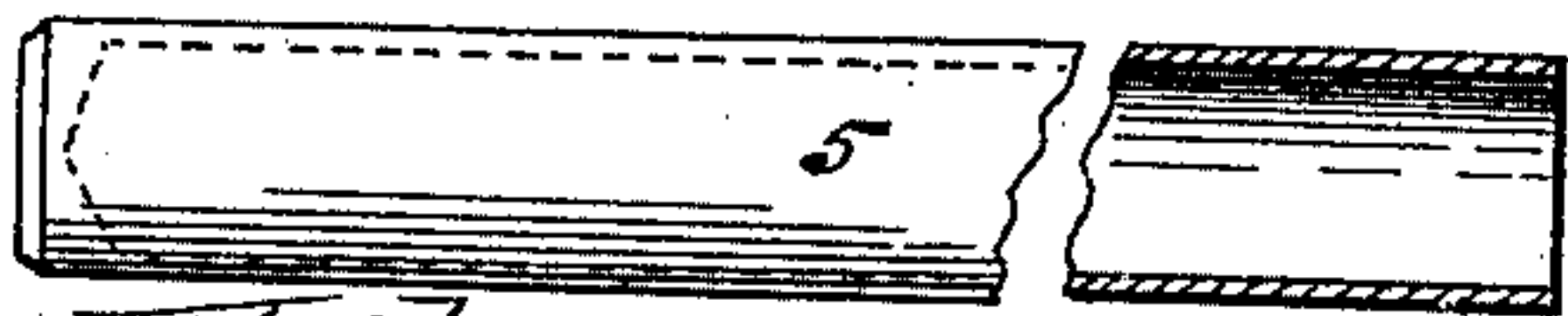


Fig. 5.

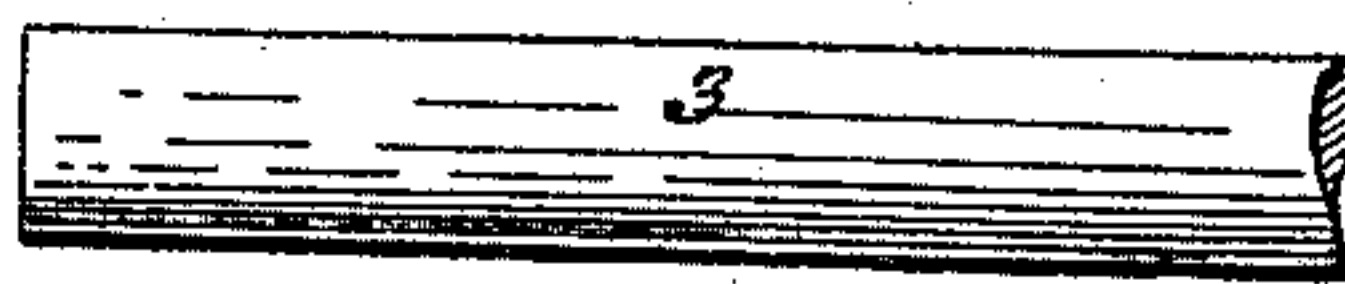
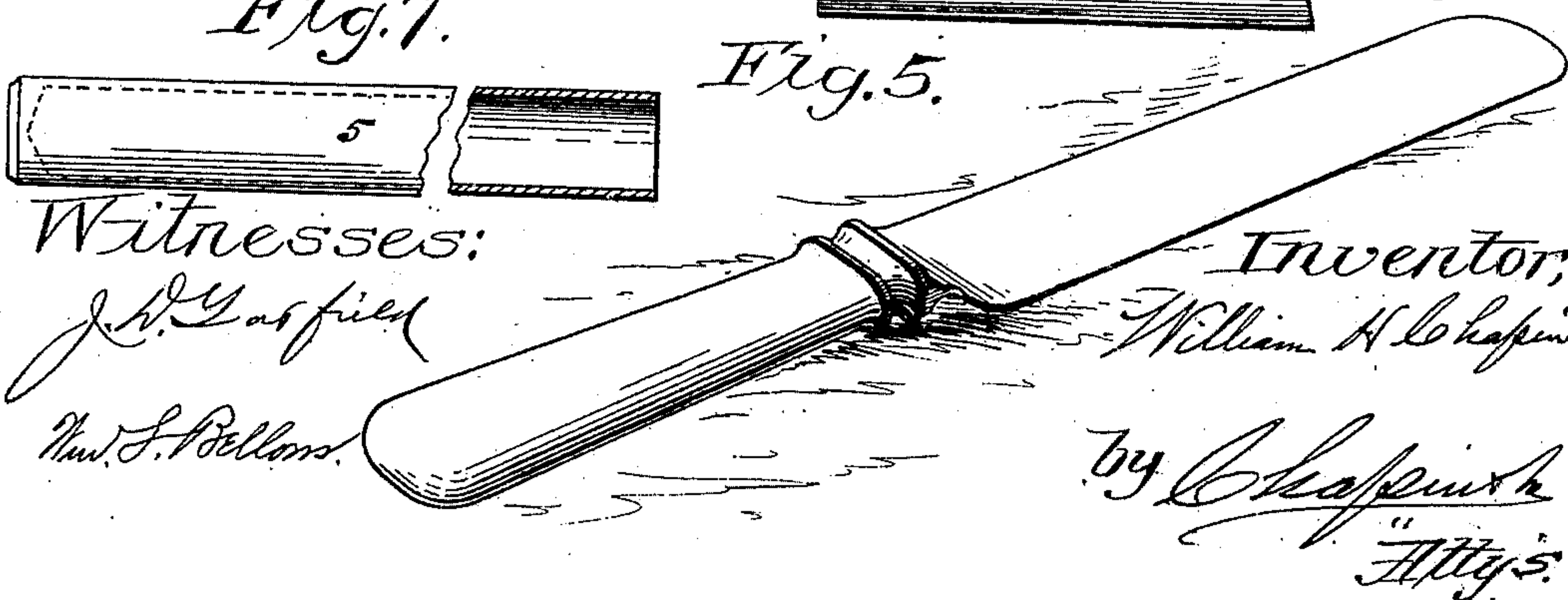


Fig. 6.



Witnesses:

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FORGING-BLANK FOR HOLLOW-HANDLED CUTLERY.

SPECIFICATION forming part of Letters Patent No. 445,659, dated February 3, 1891.

Application filed February 26, 1890. Serial No. 341,894. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CHAPIN, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented new and useful Improvements in Forging-Blanks for Hollow-Handled Cutlery, of which the following is a specification.

This invention relates to cutlery and analogous implements, and particularly to improved means for making the same with hollow metallic handles which are integral with the blade or implement; and the invention consists in providing an improved forging-blank from which to forge said implement, containing within itself the requisite parts to form the blade or the implement and a solid-sided or seamless metallic handle therefor, all as hereinafter fully described, and pointed out in the claims.

In the drawings forming part of this specification, Figures 1 and 3 are plan views of forging-blanks for hollow-handled implements constructed according to my invention. Fig. 2 is a longitudinal section of the blank shown in Fig. 1. Fig. 4 is a side elevation of a partly-formed knife or analogous implement produced immediately from the blank Fig. 1 by drop-forging. Fig. 5 is a perspective view of a table-knife made from the forging shown in Fig. 4. Fig. 6 is a side view of the solid part of the blank; and Fig. 7 is a side view, partly in section, of the hollow part of said blank.

In the drawings, A indicates the forging-blank, which is made, preferably, of steel, and it consists of a solid portion 3 and a hollow portion 5. The said part 5 of the blank A provides a chambered portion of sufficient length and diameter to form a solid-sided or seamless hollow metallic handle, and the said part 3 provides material from which to forge the implement or the blade of a knife. From the said blank, according to its size, (those herein represented being about the dimensions from which to form table-knives,) may be made carving, table, dessert, fruit, and other knives, and, if desired, blanks may be made of suitable size for making swords having hollow metallic handles integral with the blades thereof, thus securing the utmost strength and durability and great economy in manufacture.

The said forging-blank is made from two pieces of metal, one solid, as shown in Fig. 6, and one tubular, having one end integrally closed, as shown in Fig. 7. The solid piece 3 is preferably of cylindrical form, and is of such quality of steel as the blade of a knife or other implement should be made from, in order that it may be capable of taking a proper temper and have the requisite strength and durability. The hollow part 5 of the forging-blank, (shown in Fig. 7,) for convenience and economy of manufacture—that is to say, as to cost of material and for easy and rapid drilling—is made, preferably, of soft steel, or what is sometimes called “homogeneous metal,” because it is cheaper than blade-steel and is of fine grain and soft, and when polished the surface is free from imperfections and is well adapted for plating. Said hollow part 5 may be made by cutting pieces of the proper length from a bar of said metal, preferably of cylindrical form, and then drilling said pieces from one end nearly to the other, as indicated in dotted line in Fig. 7, leaving a solid head 7 thereon integral therewith. The preferable manner of producing said hollow handle-pieces 5 is to drill into the end of a bar of metal the proper distance, and then cut off the drilled end beyond the drilled socket therein, thus leaving a solid head 7 thereon, as aforesaid. One end of the said solid part 3 is then placed within the open end of the said tubular part 5 and said parts are integrally united by welding, thereby forming in effect a single piece of metal, the requisite hammering of the welded portions of said parts 3 and 5 reducing them at their point of union to a uniform surface thereat, as shown in the drawings, thereby producing a metallic forging-blank with a chamber therein, as shown, having an unbroken surface of sides and ends—that is to say, having no seam or visible welded joint, but producing in said blank a chamber, as shown, whose walls are absolutely impermeable.

The above-described forging-blank presents important features of novelty and usefulness in relation to the construction of hollow-handled cutlery and other implements in which the handle consists of a separately-made tubular piece, as described, having one integrally-closed end, inasmuch as the treatment

of such a tubular handle-piece as heretofore practiced involves the expense of making a plug separately and of welding or brazing said plug in the open end of said handle-piece and either drilling and tapping said plug to receive a tang on the end of the blade or forming a tang on the plug to enter a socket in the adjoining end of the blade or of forming a plug part on the end of the said blade or its bolster to enter said open end of the handle part, which must be brazed thereto at considerable expense for welding at this partially-finished stage of the handle is not practicable, and it is well known that the formation of such a joint or joints as are above described at the junction of the blade and handle results in a large percentage of leakages thereat, which only show themselves after the knife shall have been plated, thereby entailing a very considerable loss.

In view of the above description of the state of the art as to plugging the open end of the handle part 5 it is clearly seen that the improvement herein described, whereby by the simple and inexpensive operation of primarily welding the handle and blade-pieces together to form the forging-blank described, absolute prevention of leakage is secured, a large percentage of the cost of plugging the handle part is saved, and still another important advantage in the manufacture of the implement or knife is gained—viz., the production in a forging-blank primarily in one piece of the said two parts thereof, which in all the subsequent operations are handled and operated upon as a single piece. This greatly facilitates the work thereon and insures perfect alignment of handle and blade, and thus obviates all expense of straightening the knife after brazing the handle to the blade.

It will be observed that Figs. 1 and 2 (Fig. 1 having the chamber therein indicated by dotted lines thereon) illustrate the said forging-blank in which the chambered portion thereof is of decreasing tapering form from one end toward the other for a portion of its length, while Fig. 3 represents a forging-blank of uniform diameter from end to end. The said forging-blank may be made of either of said forms, according to the ultimate shape that it is desired to produce in the finished handle—that is to say, either a straight one or one of tapering form from the butt toward the blade of a knife or the implement.

When the blank having the above-mentioned tapered chambered portion is to be made, the said chambered part is preferably tapered by pressing or hammering before it is united to the solid portion 3, as above described.

The partially-forged knife illustrated in Fig. 4 is produced from the above-described

forging-blank by placing the said blank (after suitably heating the same) between properly-formed dies and subjecting the same to the action of a drop-press in the well-known manner, and the balance of the blade from the bolster *c* toward the extremity of the blade is hammered in the usual way to produce said blade. The knife is then trimmed and ground and polished, thereby finishing it in the usual manner.

In placing the forging-blank between the dies of the drop-press, as aforesaid, to produce the partially-formed knife illustrated in Fig. 4 that part *x* of the solid portion of the blank near to the inner end of the chamber therein is placed, preferably, between those portions of the drop-dies which form the neck *o* (see Fig. 4) of the bolster of the knife. This precaution, however, pertains only to the production from said blank of knives having said bolster.

It is obvious that the operator will manipulate the blank *A* in relation to his dies according to the work and the requirements of the article to be formed from said blank, the essential object being to produce a forging-blank for the above-referred to and other articles which shall possess the requisite characteristics to permit of the formation therefrom of a metallic hollow-handled implement in which the handle and the implement parts are integrally united prior to the last forging operations, thereby obviating entirely all expense incident to securing a hollow handle to a blade or implement after the parts shall have been forged, and obviating all possibility of leakage when the knives or implements shall finally be plated and finished.

What I claim as my invention is—

1. A forging-blank for the manufacture of hollow-handled cutlery and analogous articles, consisting of a tubular piece of metal of which a handle is subsequently made, having one end integrally closed, and a solid piece of crude metal of which a blade is subsequently made, welded by one end to the open end of said tubular piece, substantially as set forth.

2. A forging-blank for the manufacture of hollow-handled cutlery and analogous articles, consisting of a tubular piece of metal of which a handle is subsequently made, having one end integrally closed and made tapering from its closed end to its open end, and a solid piece of crude metal of which a blade is subsequently made, welded by one end to the open end of said tubular part, substantially as set forth.

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Witnesses:

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