

(No Model.)

W. H. CHAPIN.
MANUFACTURE OF HANDLES FOR CUTLERY.

No. 431,034.

Patented July 1, 1890.

Fig. 1.

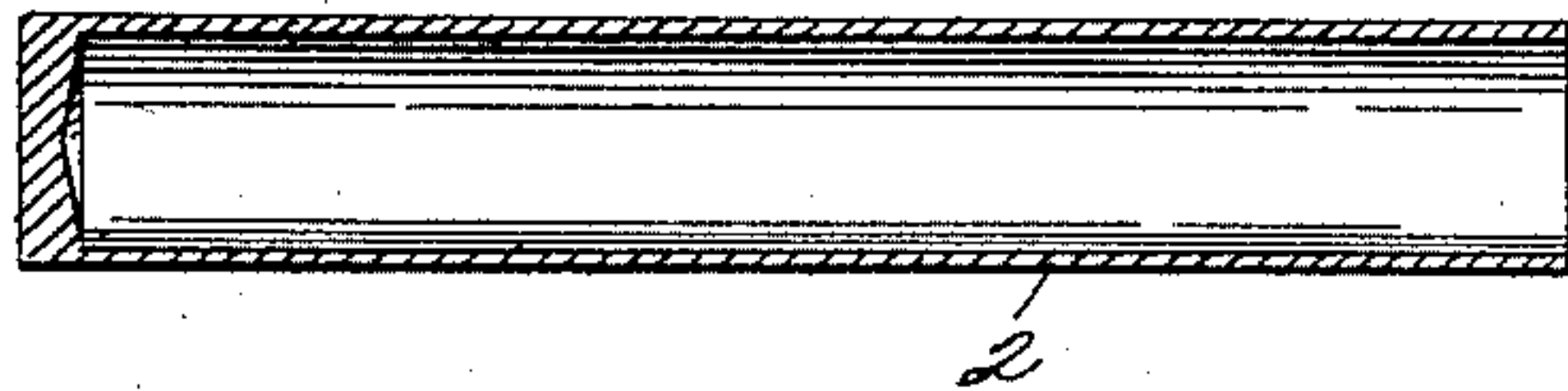


Fig. 8.

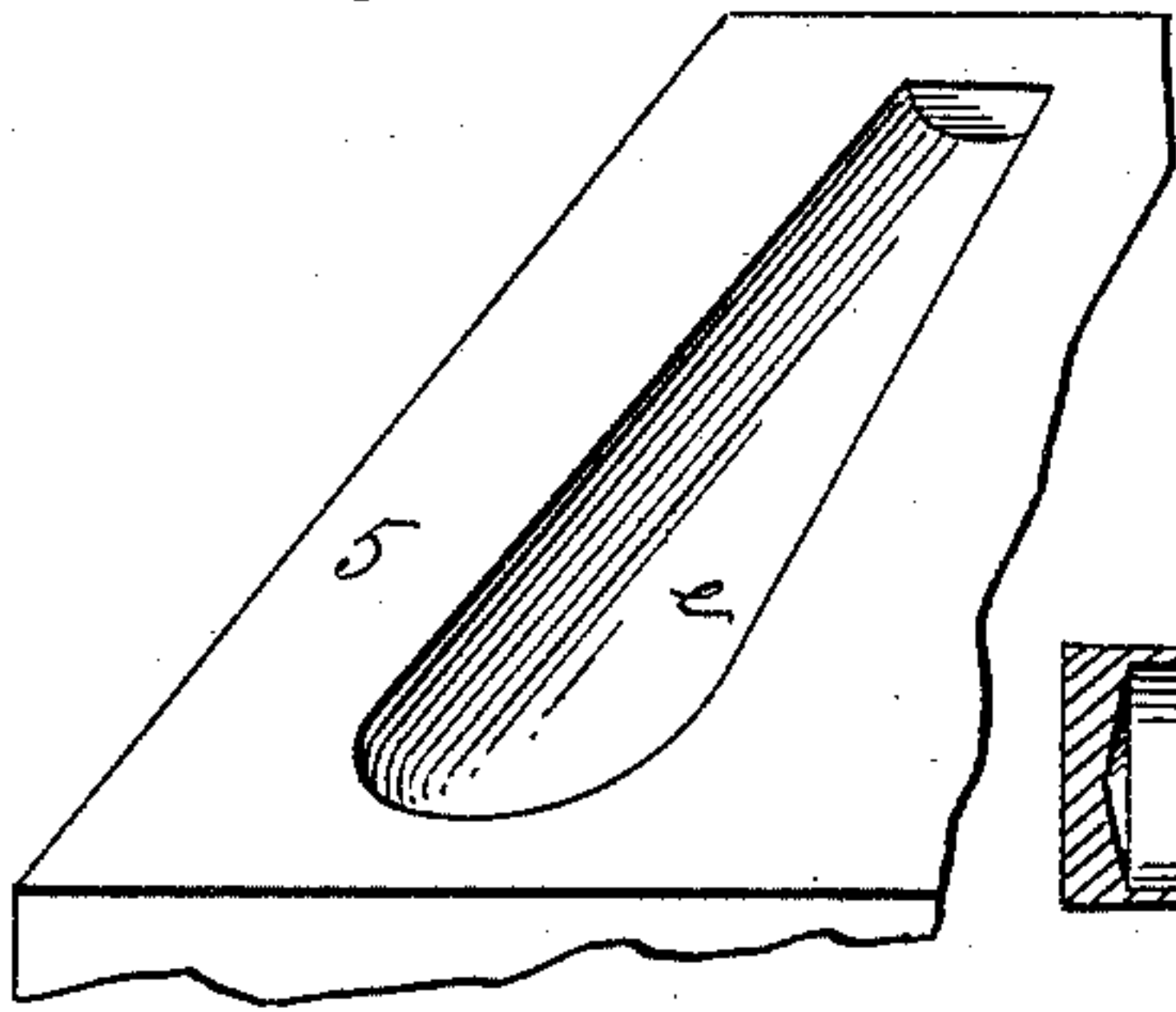


Fig. 2.

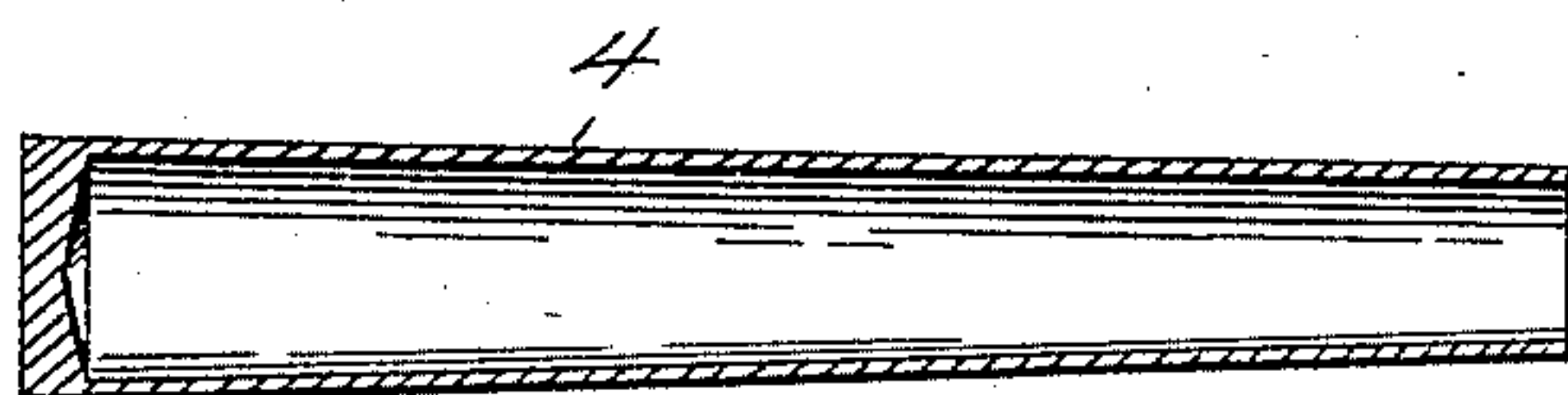


Fig. 3.

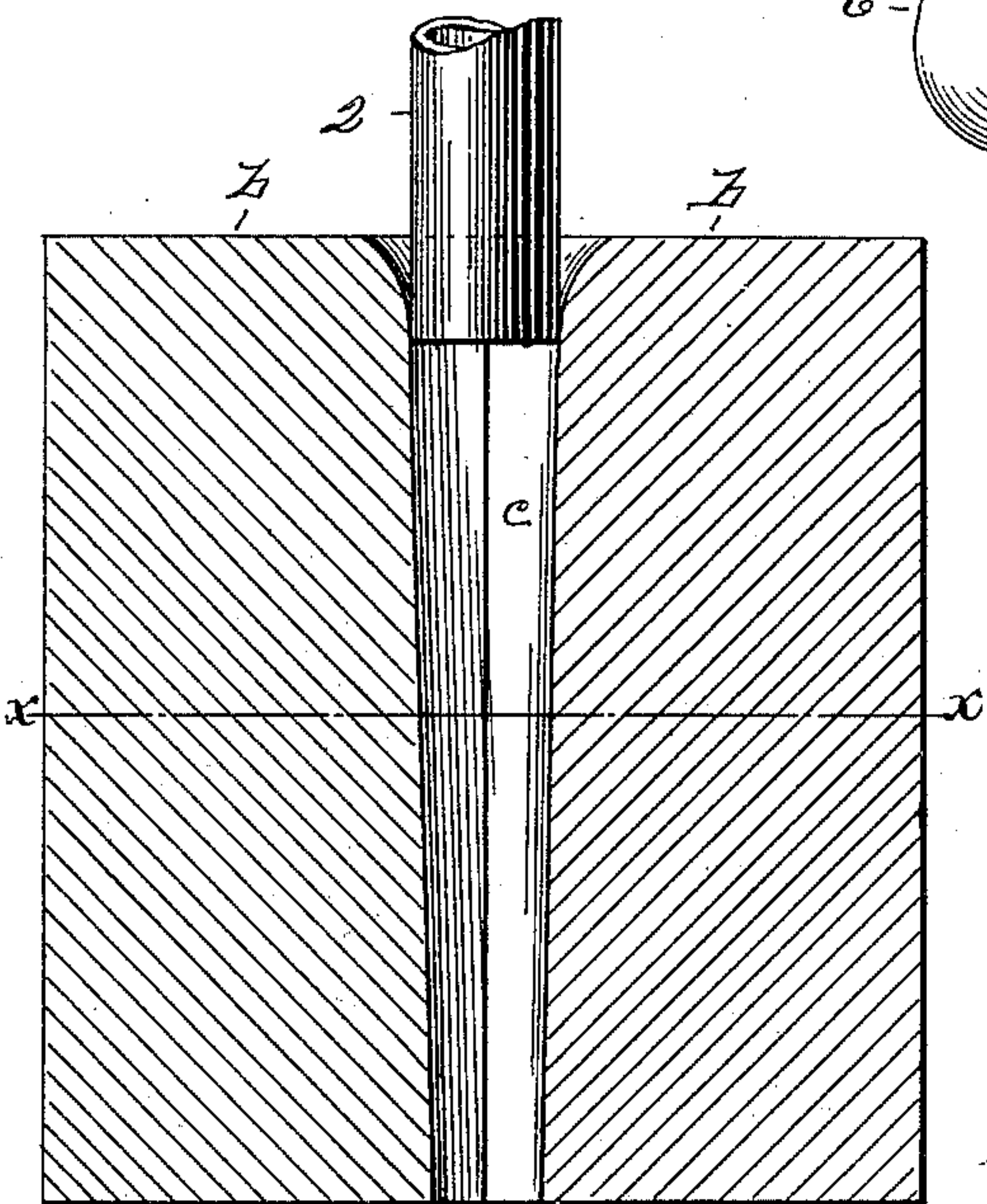


Fig. 9.

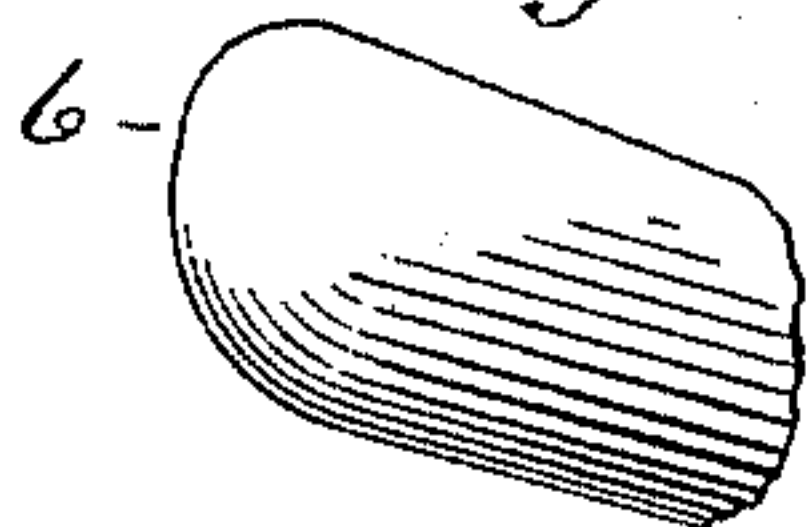


Fig. 4.

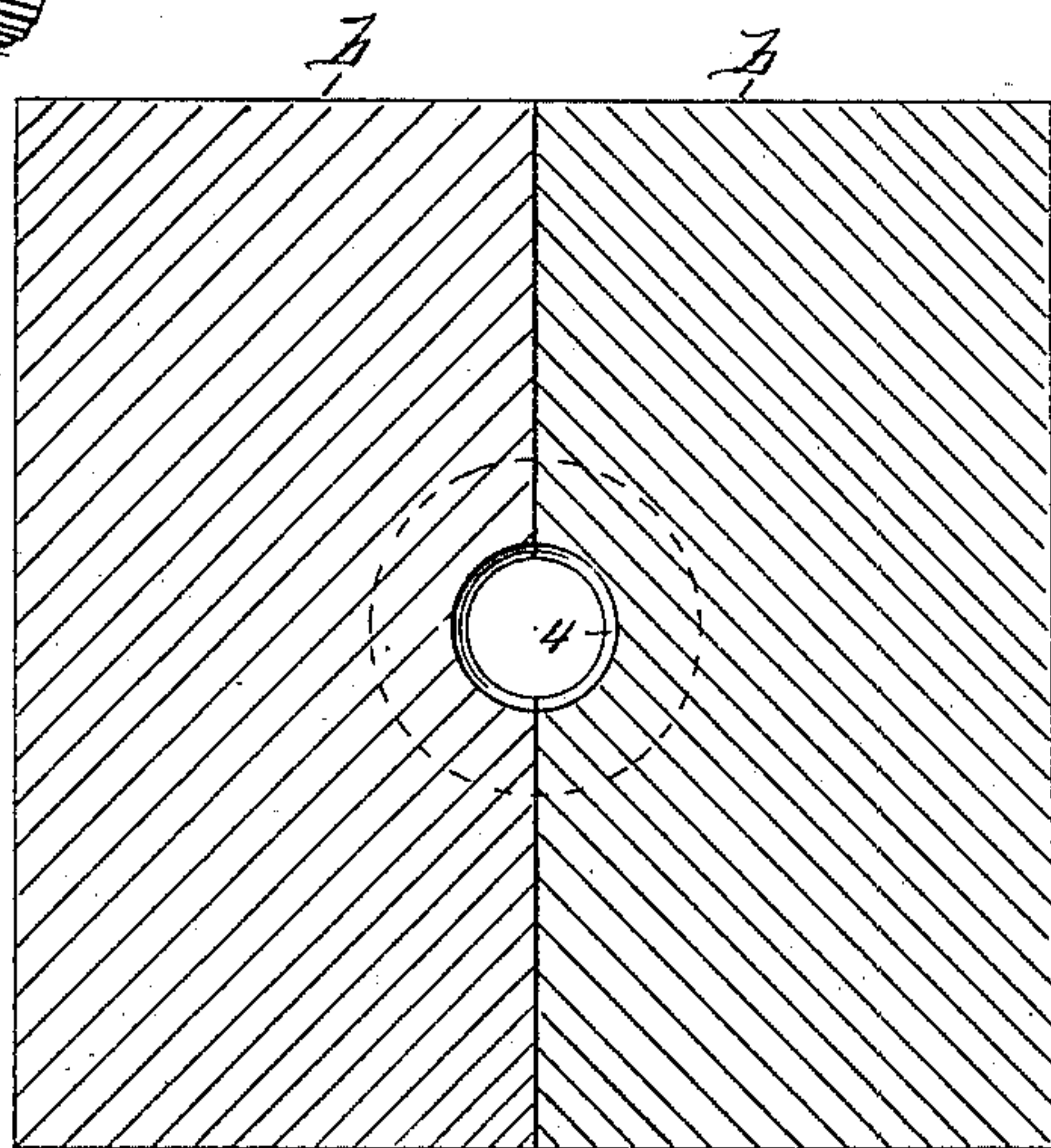


Fig. 5.

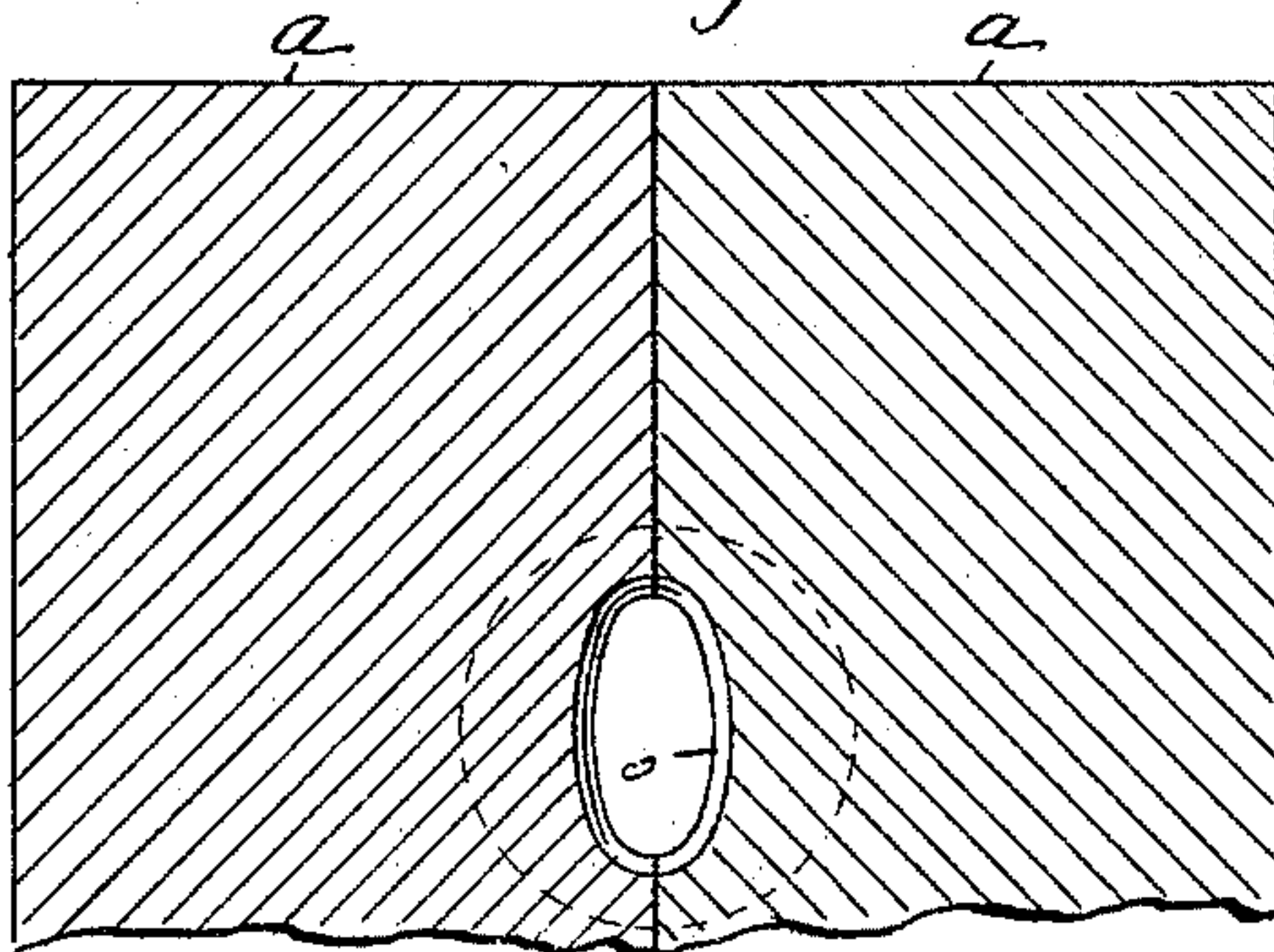


Fig. 6.

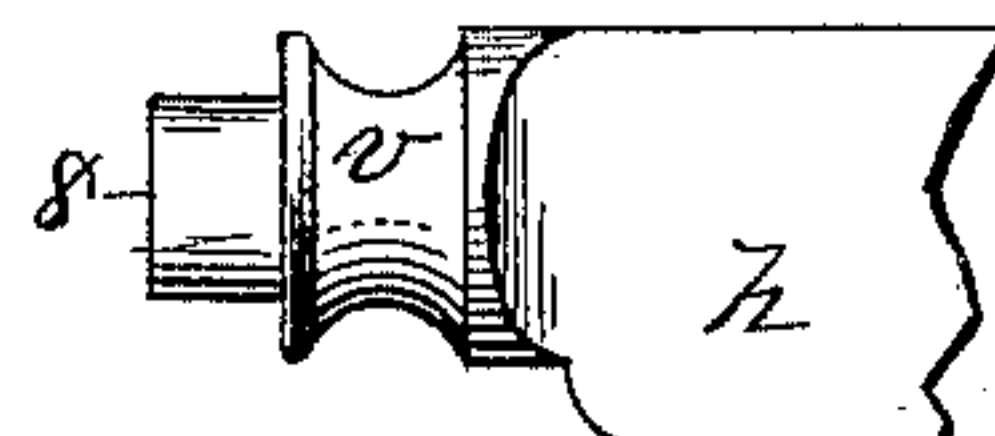


Witnesses:

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Fig. 7.



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MANUFACTURE OF HANDLES FOR CUTLERY.

SPECIFICATION forming part of Letters Patent No. 431,034, dated July 1, 1890.

Application filed October 31, 1889. Serial No. 328,841. (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 the Manufacture of Handles for Cutlery, of which the following is a specification.

This invention relates to hollow, seamless, metallic cutlery-handles, the object being to provide improved means for making such handles whereby the expense incurred by forging such handles as heretofore practiced, and a large percentage of the expense of finishing such forged handles, is obviated, all as hereinafter fully set forth.

In the drawings forming part of this specification, Figure 1 is a longitudinal section of a tube having one solidly-closed end, from which a cutlery-handle is made according to my invention. Fig. 2 is a like view to Fig. 1, showing said tube reduced to a tapered form. Fig. 3 is a vertical sectional view of tapering and reducing dies, showing the open end of the tube illustrated in Fig. 1 entered in one end of the chamber in said dies. Fig. 4 is a section on line *x x*, Fig. 3, of said tapering and reducing dies. Fig. 5 is a transverse section of ovaling-dies, the use of which is fully described below. Fig. 6 is a longitudinal section of the open end of the handle-tube shown in Fig. 2, showing in section therein a closing-plug, and a projection of said plug, showing the latter in end view. Fig. 7 is a side elevation of the bolster end of a knife-blade. Fig. 8 is a perspective view of one of a pair of forming-dies, the use of which is fully described below. Fig. 9 is a perspective view of the butt or solidly-closed end of a completely-formed handle.

It has been the practice heretofore in making hollow metallic handles for cutlery and other similar articles to bore a piece of round steel or other metal from one end toward the other, thereby making a tubular handle-blank, such as is shown in Fig. 1, having one solidly-closed end, and then imparting to said handle-blank a tapering form, as shown in Fig. 2, and oval in cross-section, by heating said blank in a forge and then drop-forging the same between dies substantially like the one shown in Fig. 3, and after having so forged said blank (a metallic plug being ordinarily

placed in the open end of said blank before dropping it, as aforesaid) the burrs produced thereon by forging are trimmed off, and the handle is then rough and smooth polished and finished preparatory to attaching it to the blade of a knife or other utensil.

The essential object of this invention is to provide improved means for producing a cutlery-handle from the tubular metallic blank 2, (illustrated in Fig. 1,) without forging the same, as above described, and by one or two simple operations, whereby said blank is reduced to a complete handle form, having in consequence of said improved method of reduction to such form a bright, finished surface, which obviates the necessity of rough and finish polishing, which must be practiced upon a forged handle made as above described, and which improved method of forming said handles results in the production of one that possesses greatly-increased strength above a forged handle. The said tubular handle-blank is made, as aforesaid, preferably from soft steel, and said metal, when possessing the requisite conditions of ductility, permits of reducing the said handle-blank by a single operation to a tapering form from one end to the other, as shown in Fig. 2, and at the same time and by the same operation imparting to said handle-blank an oval form in cross-section by inserting the open end of said handle-blank 2 into one end of a die-chamber, as shown in Fig. 3, and forcing said handle-blank therein by pressure, thus compelling said blank to assume the form of the finished handle 3, shown in Fig. 5, the dies *a* in said figure, of suitable metallic formation, having a die-chamber therein of the requisite longitudinally-tapering conformation and of oval shape in cross-section. If the metal from which said handle-blank is made be a trifle harder than that above mentioned, the handle is made therefrom by first forcing said blank 2 into dies *b*, Fig. 3, in which is formed a die-chamber *c* of longitudinally-tapering form, thereby producing the cylindrical tapering partially-formed handle 4, (illustrated in Fig. 2,) and then forcing said tapered blank into the chamber of the dies *a*, Fig. 5, and bringing it to an oval form in cross-section. After the said handle-blank shall have been reduced to the tapering and

oval forms above described, it is placed between two dies having therein a chamber *e*, substantially such as is shown in Fig. 8, in the part of a die 5 there shown, whereby the closed or butt end of the handle-blank is pressed cold to the form shown in Fig. 9, wherein is illustrated the butt-end of a handle 6; or, if preferred, the butt-end of said handle may be ground off to suitably round off the corners thereof and bring it to a suitable form corresponding to that of the handle from the butt toward its smaller end.

By forcing, as aforesaid, the handle-blank 2 into tapering and ovaling dies having a smooth polished surface, the exterior surface of said blank is brought to a bright and polished condition, and the metal constituting the handle so made is more or less condensed and hardened to such a degree as renders it stiff and strong.

After the handle 6 shall have been made, as aforesaid, a suitable plug 7, Fig. 6, is provided therefor and is inserted in its open end, or the plug which is to close said open end may be made on the bolster end of the knife-blade *h*, Fig. 7, and consists of the portion 8 of the bolster *v*, said plug-shaped portion 8 being adapted to fit closely into the open end of said handle and be brazed or otherwise permanently attached thereto, thus securing the blade *h* and the handle rigidly together.

The plug 7, illustrated in Fig. 6, is, as there shown, smaller at its outer end, leaving an annular chamber *x* between the inner side of the end of the handle and said plug, said annular chamber receiving and providing for the proper distribution of the brazing-solder, whereby the plug and handle are united.

In practice when the plug 7 is employed for closing the end of the handle, as aforesaid, the part 8 of the bolster of the blade *h* is made of reduced size, and the end of said plug is suitably bored or chambered to receive the said reduced plug part 8, and the parts are rigidly united by brazing, as aforesaid.

The above-described reducing operations are performed on the handle-blank 2 while the latter is in a cold state, no heating thereof being required, whereby the surface of the pieces is scaled or in any way defaced, and hence the production of handles having said bright finished surface.

What I claim as my invention is—

1. The improvement in the art of making hollow metallic handles, which consists in boring a cylindrical bar of metal from one end nearly to the other, thus forming a tube about the length of the handle to be made therefrom, said tube having a solid closed

end, then introducing the open end of said tube into a die-chamber of tapering form and forcing said tube thereinto, thereby contracting its open end and imparting thereto a tapering form, and then securing a plug in the open end thereof, substantially as set forth.

2. The improvement in the art of making hollow metallic handles, which consists in boring a cylindrical bar of metal from one end nearly to the other, thus forming a tube about the length of the handle to be made therefrom, said tube having a solid closed end, then introducing the open end of said tube into a die-chamber of tapering form and oval in cross-section and forcing said tube thereinto, thereby contracting its open end and imparting thereto a form oval in cross-section and having a gradually-increasing diameter from its open to its closed end, and then securing a plug in the open end thereof, substantially as set forth.

3. The improvement in the art of making hollow metallic handles, which consists in boring a cylindrical bar of metal from one end nearly to the other, thus forming a tube about the length of the handle to be made therefrom, said tube having a solid closed end, then introducing the open end of said tube into a die-chamber of tapering form and forcing said tube thereinto, thereby contracting its open end and imparting thereto a tapering form, and then forcing said tapered tube into a die-chamber oval in cross-section, thereby imparting a like form to said tube, substantially as set forth.

4. The improvement in the art of making hollow metallic handles, which consists in boring a cylindrical bar of metal from one end nearly to the other, thus forming a tube about the length of the handle to be made therefrom, said tube having a solid closed end, then introducing the open end of said tube into a die-chamber of tapering form and oval in cross-section and forcing said tube thereinto, thereby contracting its open end and imparting thereto a form oval in cross-section and having a gradually-increasing diameter from its open to its closed end, then securing a plug in the open end thereof, and finally subjecting the tube to lateral pressure to give proper form to its closed end, substantially as set forth.

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

WM. H. CHAPIN.

Witnesses:

GEO. W. STIEG,
DAVID M. ARNDT.