

(No Model.)

H. C. HART.  
DIE FOR SWAGING SPOON BLANKS.

No. 478,860.

Patented July 12, 1892.

FIG. 1.

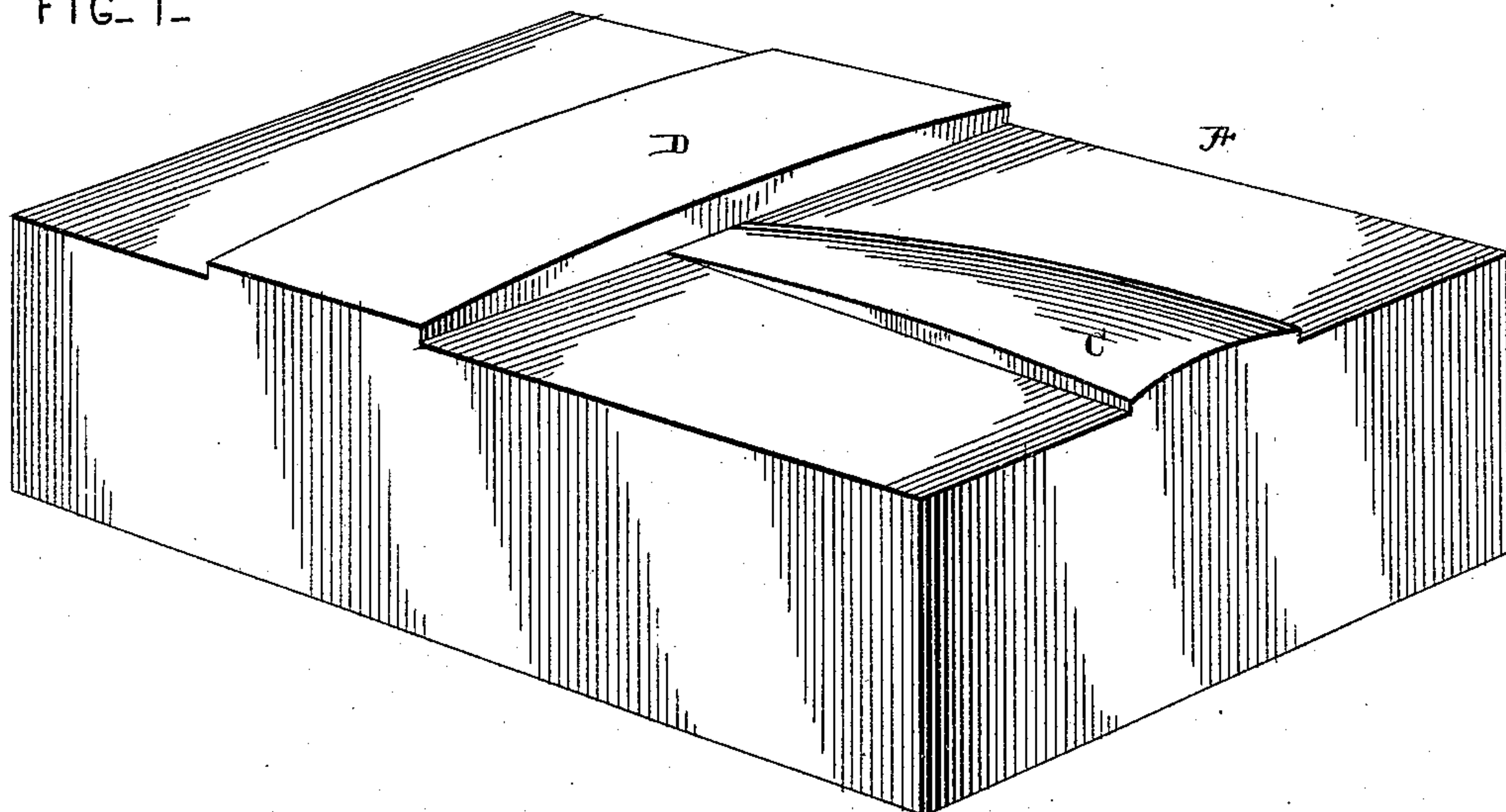
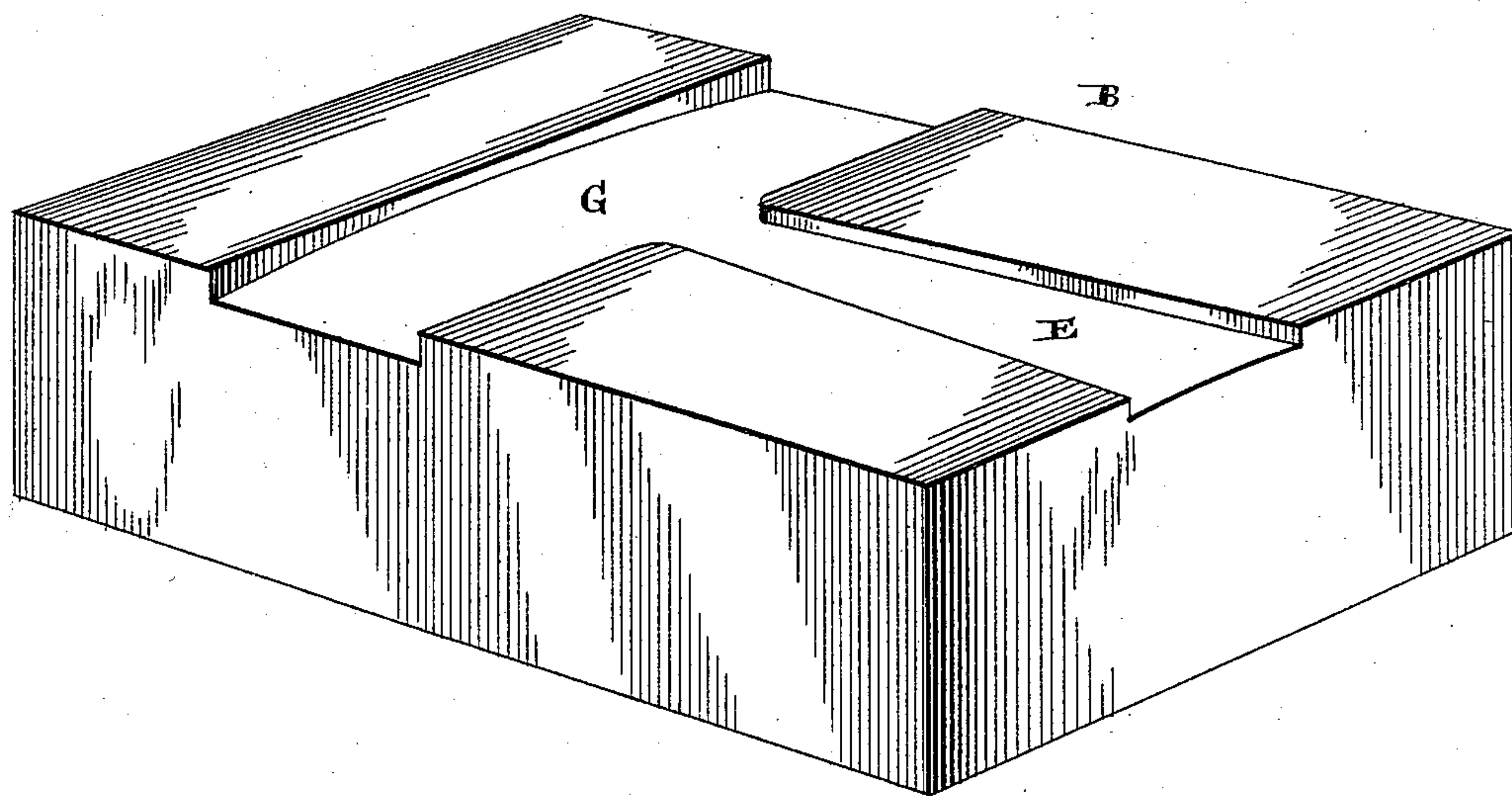


FIG. 2.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

HUBERT C. HART, OF UNIONVILLE, CONNECTICUT.

## DIE FOR SWAGING SPOON-BLANKS.

SPECIFICATION forming part of Letters Patent No. 478,860, dated July 12, 1892.

Application filed November 11, 1891. Serial No. 411,632. (No model.)

*To all whom it may concern:*

Be it known that I, HUBERT C. HART, of Unionville, in the county of Hartford and State of Connecticut, have invented certain  
5 new and useful Improvements in Blank-Swaging Dies; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make  
10 and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in blank-swaging dies; and it consists in certain novel features of construction, which will  
15 be fully described hereinafter, and particularly pointed out in the claims.

The primary object of my invention is to provide a T-shaped die for swaging blanks  
20 for spoons and forks, which comprises a male and a female member, the blank being placed in the groove of the female member and subjected to pressure or hammering from the male member, which is placed in the grooves  
25 of the female member upon the said blank, and in this manner swaged, so as to spread the metal of the blank both lengthwise and crosswise.

Another object of my invention is to make  
30 the grooves in the female member flat and the projection upon the male member convex, so that the blank after being swaged is concaved, or the bottom of the grooves in the female member may also be made convex, so  
35 that the blank is concaved upon both sides after being swaged, or to make the grooves in the female member flat, and the engaging-face of the projection of the male member concave, so that the blank is spread and made  
40 convex, or both the grooves and the projection made concave, so that both sides of the blank will be made convex after being swaged.

The purpose and object of making the blank concave or convex is to facilitate the spreading  
45 of the blank when it is passed through rolls to make a spoon or fork.

In the drawings, Figure 1 is a perspective view of the male member of the die. Fig. 2 is a similar view of the female member of the  
50 die.

A indicates the male member of the die, and

B the female member thereof. The male member A of the die is provided with a tapering or angular projection C, which is thickest at its center and gradually decreases inward until  
55 it substantially vanishes at the junction of its inner end with the cross projection D of the said member. The object of making this projection C gradually diminish in thickness from its center to its inner end is to leave the  
60 blank almost unswaged or entirely unswaged at this point, thus making it thick, as this is the correct shape it is desired to give the blank after being swaged—that is to say, it is desired to have the spoon or fork thickest  
65 at the junction of the handle and the forked or bowl portion, and this is accomplished by having this angular portion C gradually decrease in thickness from its center to its inner end. The cross projection C extends across  
70 the male member A at the inner end of the projection C, and this cross projection D is made convex, as shown.

Made in the female member B of the die is an angular groove E, which extends to the  
75 outer edge of the member, as shown, has an open outer end, and is made of a shape corresponding to the shape of the projection C, except the depth thereof does not decrease toward its inner end or increase to correspond  
80 with the decreasing thickness of the projection C. As here shown the groove E is made convex in cross-section, though this may be left flat, if preferred. A cross-groove G extends across the inner end of this groove E,  
85 into which the inner end of the groove E enters, as shown. This groove G is also made convex, as here shown, though this groove, too, may be left flat, if desired. In this manner I produce a die having a male member pro-  
90 vided with substantially a T-shaped projection and a female member provided with a T-shaped groove to correspond with the T-shaped projection upon the male member. The blank to be swaged and out of which the  
95 spoon or fork is to be made is cut considerably narrower than is desired and placed in the female member, and then the metal thereof is swaged until the handle portion fits the annular groove E, thus lengthening and widening  
100 the said blank and spreading the bowl portion of the blank to any desired extent.



When the blank is to be converted into a spoon after being swaged convex or concave, it is passed between rolls and lengthened and widened thereby. This lengthening, widening, or spreading of the metal is greatly facilitated by making the blank either concave or convex, as before described. By cutting the blank narrower and shorter than is desired and then swaging it, as described, a great deal of waste metal is saved over the old process of rolling the metal and then cutting the blank therefrom.

By making the die either convex or concave, as described, the metal is spread easier and with less hammering than would be required to accomplish the same end if the grooves and projections of the said male and female members of the die were made flat; yet I do not desire to limit myself to making the grooves and projections either concave or convex, as the object of saving metal by spreading and lengthening the same by swaging, as described, would be accomplished by making the said grooves and projections flat and subjecting them to greater pressure or hammering in a T-shaped die, substantially as herein described.

The above object could be accomplished by two separate operations—that is to say, by subjecting the handle portion to a swaging action in one die and then the bowl or fork portion of the blank to a swaging operation in another die—and I do not, therefore, desire to limit myself to the idea of spreading both by a single die.

Having thus described my invention, I claim—

1. A fork or spoon blank swaging and shaping die, comprising a male member having a longitudinal projection which tapers toward its inner end and a transverse projection at the tapered end of the said longitudinal projection and a female die having a longitudinal groove which tapers toward its inner end to receive the longitudinal projection of the male member and a transverse groove at and communicating with the tapered end of the longitudinal groove, whereby a blank is shaped and swaged at the same time, substantially as set forth.

2. A die for shaping and swaging spoon and

fork blanks, comprising a male member having a longitudinal projection and a transverse projection at the inner end of the longitudinal projection and a female die having a longitudinal groove and a transverse groove to receive the projections of the male member, the longitudinal groove and projection being reduced in depth at their inner ends to leave the blank thickest at that point, substantially as and for the purpose described.

3. A die for swaging and widening spoon and fork blanks, comprising a female member having a longitudinal and a transverse groove communicating with the inner end of the longitudinal groove and a male member having a longitudinal and a transverse projection at the inner end of the longitudinal groove, one of the members having the longitudinal groove or projection made rounding in cross-section and the transverse groove made rounding in longitudinal section, whereby the blank is correspondingly rounded, for the purpose specified.

4. A die for swaging blanks, comprising a male and a female member, each having, respectively, substantially a T-shaped groove and projection, the ends of the cross-groove and projection thereof extending to the edges of the said members and the outer and inner ends of the longitudinal groove and projection extending, respectively, into the cross-groove and to the edge of the said cross projection, substantially as shown.

5. A fork or spoon blank swaging and shaping die, comprising a male member having a longitudinal projection which tapers at and toward its inner end and made rounding in cross-section and a transverse projection at the inner tapered end of the longitudinal projection, which transverse projection is rounding in longitudinal section, and a female member having a longitudinal and a transverse groove to receive the projections of the male member, substantially as specified.

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

HUBERT C. HART.

Witnesses:

H. A. COWLES,  
GEORGE E. TAFT.