

(No Model.)

F. M. CHAMBERS.
DIE FOR MAKING SPOON OR FORK BLANKS.

No. 540,046.

Patented May 28, 1895.

Fig. 5

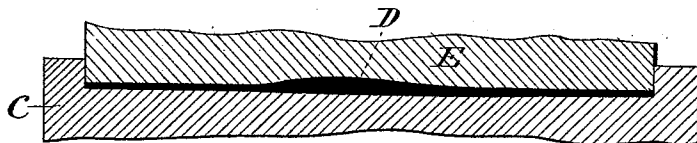


Fig. 1

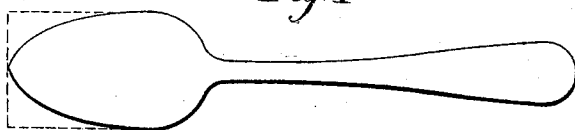


Fig. 2

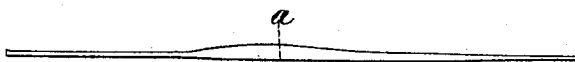


Fig. 3

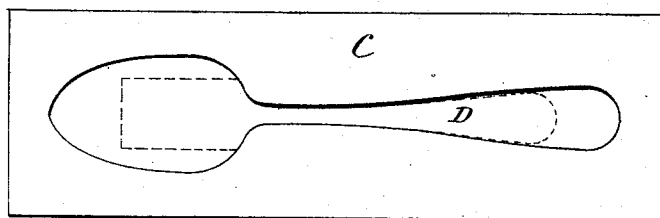


Fig. 4

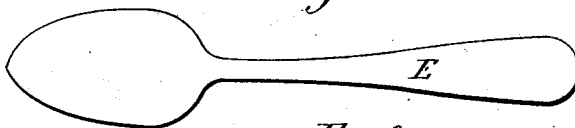
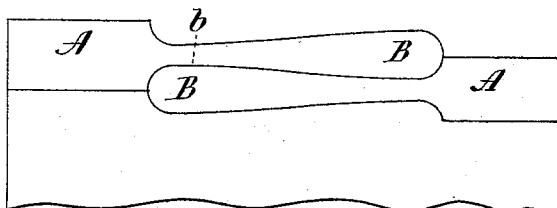


Fig. 6



Witnesses
J. H. Shumway
Lillian D. Kelley

Frederick M. Chambers
Inventor
By atty
Earle Seymour

UNITED STATES PATENT OFFICE.

FREDERICK M. CHAMBERS, OF WALLINGFORD, CONNECTICUT.

DIE FOR MAKING SPOON OR FORK BLANKS.

SPECIFICATION forming part of Letters Patent No. 540,046, dated May 28, 1895.

Application filed May 18, 1892. Serial No. 433,438. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK M. CHAMBERS, of Wallingford, in the county of New Haven and State of Connecticut, have invented a new Improvement in Dies for the Manufacture of Blanks for Spoons or Forks; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a face view of the finished blank; Fig. 2, an edge view of the same; Fig. 3, a face view of the die; Fig. 4, a face view of the punch; Fig. 5, a vertical longitudinal section cutting centrally through the punch and die; Fig. 6, a diagram illustrating the method of cutting blanks preparatory for the operation of the dies.

This invention relates to an improvement in dies for the formation of blanks for the manufacture of spoons and forks.

In the more general method of manufacturing spoons and forks, blanks are cut from sheet-metal which is of a thickness equal to the greatest thickness required for the spoon or fork, and the blanks are cut by the method known as the Rollin White method, such as shown and described in a patent granted to White, December 24, 1867, No. 72,706, and so as to avoid the waste of metal. In this method a strip of metal is taken, of a width somewhat greater than the length of one cut blank. The blanks consist of a body-portion A, and a handle-portion B. (See Fig. 6.) The body A, is considerably smaller in area than the bowl of the spoon, or prong portion of the fork, and the handle part B, is considerably shorter than the finished handle of the spoon or fork. The outline of these blanks from the body to the tip of the handle is of corresponding shape, so that cut from opposite edges of the plate the bodies will be formed from the edge, the handle projecting inward, and the line of the cut such that while the shape of the handle portion approximates that of the finished spoon, the cuts are made without waste of metal. Blanks thus formed are of a thickness corresponding to the thickest portion of the

spoon, which is in the handle near the bowl or prongs, as at *a*, Fig. 2, the blanks thus cut being of equal thickness throughout. Then these blanks are rolled to reduce them in thickness and extend them lengthwise, until the requisite thickness throughout is attained. The blanks are cut so as to give considerable surplus metal after such rolling operation has been performed, and the surplus metal is around the edges, the blank thus rolled being of considerably greater area than the final blank required for the complete spoon. The blanks thus rolled are then trimmed to the requisite shape. This is done by a punch and open die, of a shape corresponding to the outline of the blank for the spoon required, such shape being seen in Fig. 1. The surplus metal thus trimmed goes to waste.

The object of my invention is to avoid the operation of trimming the blank, and thereby save the metal which has heretofore gone to waste, and the invention consists in the construction of dies as hereinafter described for the formation of the blank for the spoon or fork.

In illustrating the invention I show it as for the manufacture of spoons or forks.

C, represents the female die, and is constructed with a cavity D, which in outline corresponds to the shape of the finished blank, Fig. 1, and as seen in Fig. 3, this cavity is of a depth greater than the thickness of the cut blank to be operated upon.

E represents the companion or male die, which in outline, see Fig. 4, corresponds with great exactness to the outline of the cavity D, in the female die C, and so that the male die E, may enter the cavity in the female die C, as seen in Fig. 5. The bottom of the cavity in the die C and the face of the male die E, are shaped corresponding to the two faces of the finished blank.

In cutting out the blanks to be operated upon, the width across the narrow part of the handle-portion as at *b*, Fig. 6, is preferably made the same as the corresponding part of the die C, and the blank throughout is of a thickness corresponding to the thickest portion of the handle, which is, as before stated in the shank *a*. Except at this point *a*, the blanks are less in area than the cavity in the

die, and so that one of the cut blanks may be dropped into the cavity in the die C, as indicated in broken lines Fig. 3. The amount of metal in the blank thus cut and placed in the die, is just sufficient for the completed blank. The blank being placed in the cavity in the die, the male die is forced into the cavity in the other die upon the blank by pressure or blow, and so as to operate upon the blank to reduce the metal in thickness, and spread it laterally, until the metal of the cut blank thus operated upon, completely and perfectly fills the space between the faces of the two parts or dies, which gives to the blank the precise shape required for the complete fork or spoon, and without subsequent trimming. This single operation of swaging or striking of the cut blank takes the place of the usual rolling of the blank, and of the trimming, thus, not only greatly simplifying the process of manufacture, but avoiding the surplus metal which is necessarily required when the blanks are to be rolled and trimmed.

It will be understood that the shape of the cut blanks may be varied according to circumstances, or shape required for the finished blank, and it will also be understood that the dies will be correspondingly varied so as to produce the form of spoon or fork blank required.

The illustrations thus far represent the blanks as for spoons. The only difference between the blank for a spoon and the blank for a fork is in the shape of the bowl or prong portion.

In Fig. 1 broken lines indicate the shape required for the fork, and it will be understood that the dies are to be made of corresponding shape, so that the fork blank will

be produced without trimming or waste, in like manner as described for the formation of the spoon blank.

The subsequent operations on the spoon blank and upon the fork blank are substantially the same as those at present employed, that is, the shaping and ornamentation of the handle and the shaping of the bowl of the spoon, or the shaping and cutting out of the prongs for the fork.

I claim—

The herein described male and female dies for the manufacture, by pressing or swaging, of the blanks used in the production of spoons and forks, the said female die having in its face a cavity corresponding in outline to the outline of the finished blank required and deeper than the thickest portion of the same, and the male die corresponding in outline to the outline of the said cavity to adapt it to enter the same, and the bottom of the cavity in the female die and the face of the male die corresponding in conformation to the respective surfaces of the finished blank, which is subsequently operated upon by suitable shaping instrumentalities to convert it into a spoon or fork, substantially as set forth, and whereby the initial blanks, subjected to the action of the said male and female dies, are spread laterally and longitudinally so as to fill the female die, and also properly differentiated in thickness from end to end.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FREDERICK M. CHAMBERS.

Witnesses:

JOHN E. EARLE,

LILLIAN D. KELSEY.