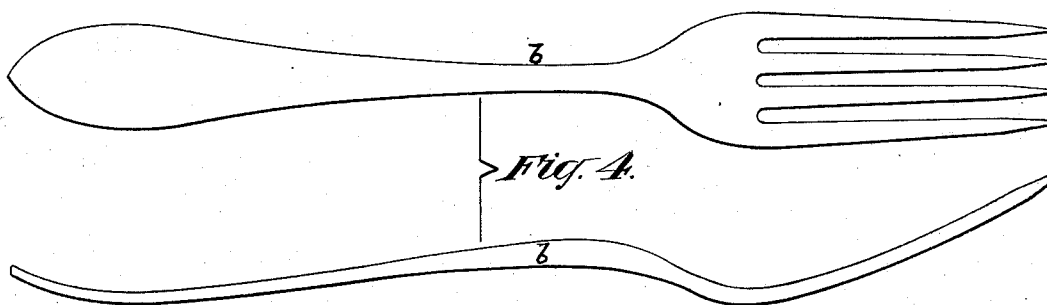
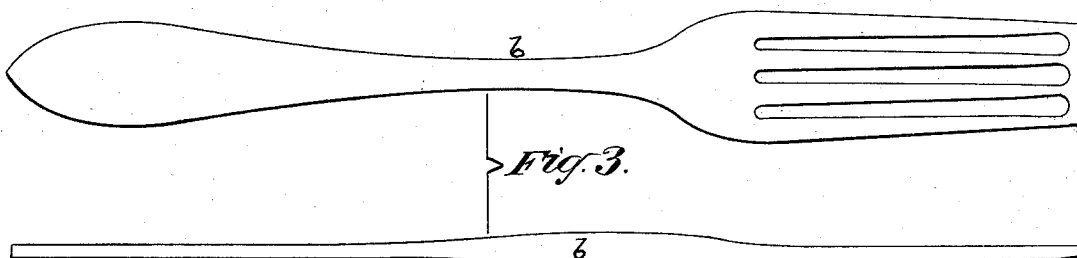
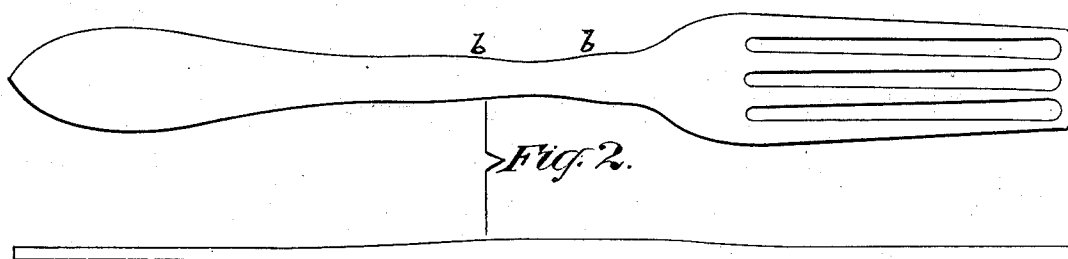
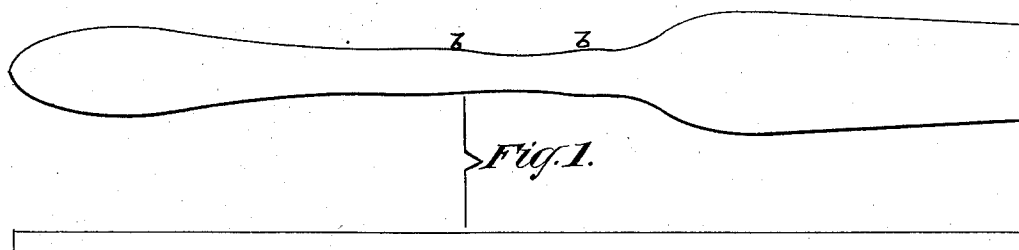


Le ROY S. WHITE.
MANUFACTURE OF SPOONS.

No. 178,218.

Patented May 30, 1876.



Witnesses.

John Becker.
Fred. Haynes

Le Roy S. White
by his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

REISSUED

LE ROY S. WHITE, OF WATERBURY, CONNECTICUT, ASSIGNOR TO BROWN
& BROTHERS, OF SAME PLACE.

IMPROVEMENT IN THE MANUFACTURE OF SPOONS.

Specification forming part of Letters Patent No. **178,218**, dated May 30, 1876; application filed
May 4, 1876.

To all whom it may concern :

Be it known that I, LE ROY S. WHITE, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in the Manufacture of Table-Forks and Spoons; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to the manufacture of forks and spoons from German silver and other ductile metals or alloys, in which the entire article, including its handle, is made from the same piece of metal. In the ordinary process of manufacturing such articles it is customary to first cut or punch out the fork or spoon blank from a sheet of metal which has been rolled to the required thickness of the thickest part of the shank in a transverse direction to the face of the article, and subsequently to reduce or taper off the blank from the shank toward the two ends, to give the necessary diminished thickness at the handle and bowl or pronged portion of the spoon or fork. Said blank is then further shaped and finished without materially changing either the thickness or width of the shank at its junction with the bowl or prong and handle portions of the article, the width of the shank being as left by the blank when first cut out from the sheet, and its thickness being unaltered by the subsequent rolling of the blank to reduce its ends. Although this produces greater relative thickness at the shank, where the greatest strain comes in use, the best and strongest forks and spoons heretofore made, and more especially the forks, are very liable in use to be bent in that part which, notwithstanding its greater thickness, is practically weaker than any other part. To give a still greater relative thickness to the shank by the ordinary process of manufacture, which would have to be done by making the blank from thicker plate, and reducing it more by rolling toward the ends would only imperfectly remedy the above-described defect.

My invention, while it admits of giving an extra thickness to the shank, does not necessarily involve any increased thickness of the

sheet out of which the blank is cut; nor is it dependent upon any relative thickness of the shank in a transverse direction; but it consists in condensing, hardening, and stiffening the metal in the shank by pressure applied to the blank on opposite edges of the shank in a direction transverse to the plane of the sheet, and to the direction of the pressure produced in the rolling of the latter. This condensation gives to the metal in the shank a quality resembling a spring temper, whereby it is not only enabled to better resist any pressure applied in a direction to bend it, and thus is not so easily bent, but, if it should yield in some degree to such pressure, it will return, by its elasticity, to its normal shape or condition.

To practically carry out this construction, the fork or spoon blank, instead of being cut or struck out of the width required for it at its shank when finished, is formed or stamped out with a swell, or otherwise has an extra quantity of metal given it at such part. Then the ends of the blank are rolled off, as before, and subsequently the shank of the blank subjected (edgewise in a direction transversely to its face) to the blow of a drop or hammer, to condense and temper the metal in the shank, making it of a spring-like temper, or giving it increased density and stiffness at such part. This action of the drop or hammer may also serve to give an increased thickness to the shank in a transverse direction to the face of the article, so that the fork or spoon may be made from even a thinner metal sheet than usual, thereby reducing end-rolling of the blank, yet producing a much stiffer article at the shank.

In view of the preceding minute description of the invention it will only be necessary to briefly refer to the drawing which illustrates it.

Figure 1 represents a face and edge view of a fork-blank as it is first stamped or cut out from the sheet, the same being formed with a swell or increased width at its shank *b*. Fig. 2 represents a face and edge view of said blank after the same has been end-rolled on its face and back in opposite directions from the shank. Fig. 3 represents face and edge views of the same after the shank *b* has been condensed or compacted and hardened by lateral pressure

in a drop-press transversely to the plane of the sheet from which the blank was struck, and in a direction transversely to the pressure produced in the rolling of the sheet, the fork or spoon blank being turned up edgewise as regards the exposure of its shank to the action of the press. Fig. 4 represents face and edge views of the finished fork, which, while it does not necessarily differ in form from other forks, has its shank *b* condensed or hardened into a spring-like temper by the process or method of manufacture hereinbefore described.

What I claim as my invention is—

The improvement in the art of manufactur-

ing forks and spoons, consisting in cutting out the blank with a lateral swell in the shank, or with the shank of a width greater than is required for the finished article, and subsequently condensing or hardening the metal in the shank by pressure applied in a direction transverse to the plane of the blank, and to the direction of the pressure produced in the rolling of the latter, and of the sheet from which it has been cut, substantially as and for the purpose herein described.

LE ROY S. WHITE.

Witnesses:

G. H. CLOMS.

HIRAM VAN DUSEN.