(No Model.)

E. C. LOMBARD.

METHOD OF MAKING KNIVES OR KINDRED ARTICLES OF CUTLERY.

No. 515,835. Patented Mar. 6, 1894.

Fig. 1

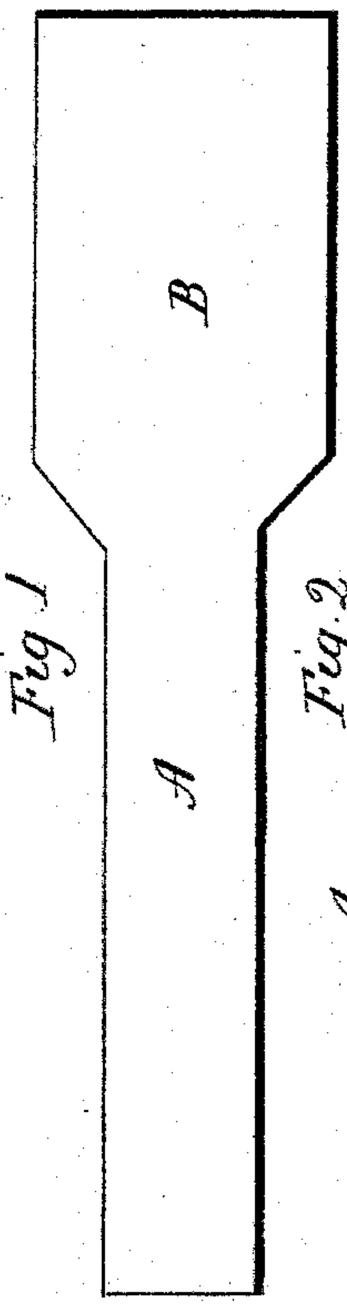


Fig. 2

Fig. 3

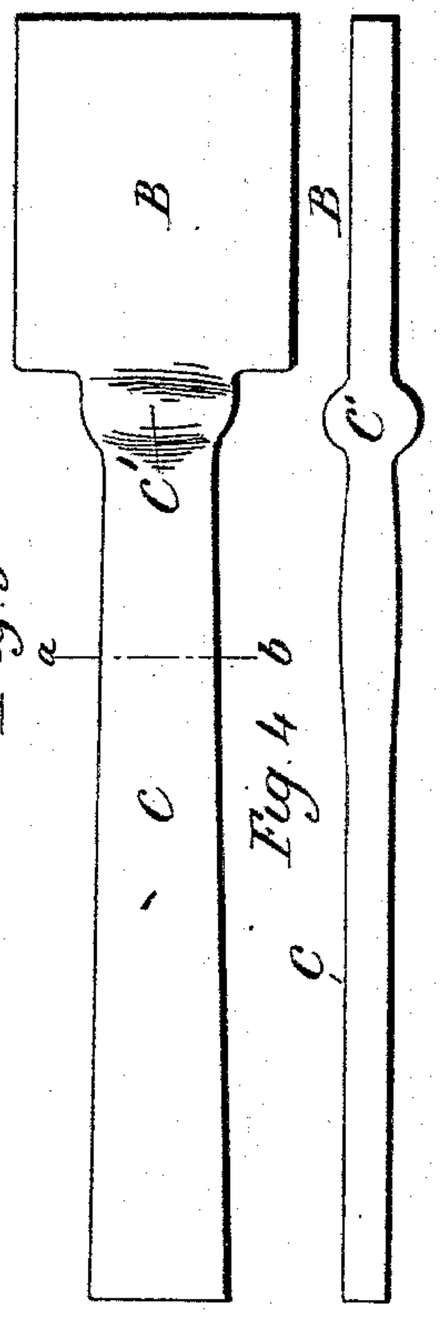


Fig. 4

Fig. 3ª

Fig. 5ª

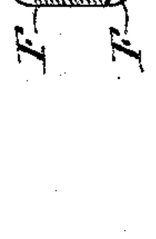


Fig. 6ª

Fig. 5

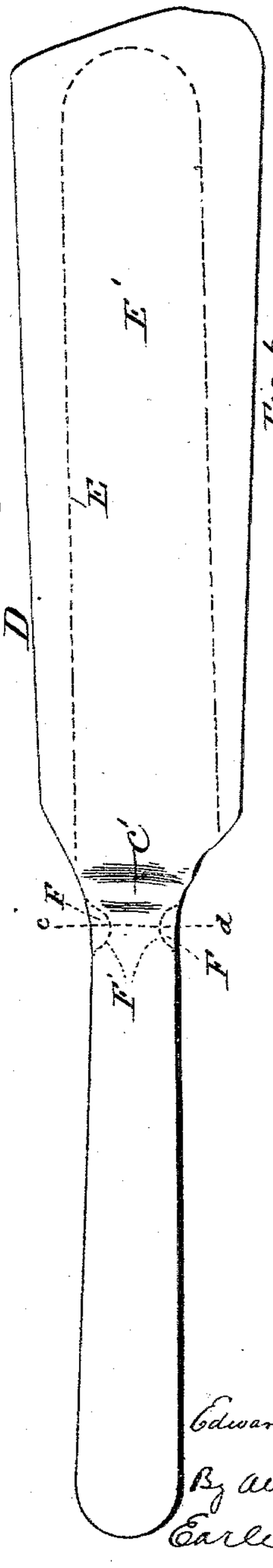
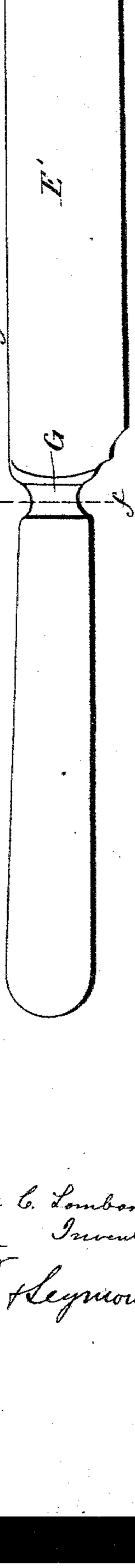


Fig. 6



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EDWARD C. LOMBARD, OF MERIDEN, CONNECTICUT, ASSIGNOR TO C. ROGERS & BROS., OF SAME PLACE.

METHOD OF MAKING KNIVES OR KINDRED ARTICLES OF CUTLERY.

SPECIFICATION forming part of Letters Patent No. 515,835, dated March 6, 1894.

Application filed May 15, 1893. Serial No. 474,283. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. LOMBARD, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Methods of Making Knives or Kindred Articles of Cutlery; 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 plan view of such a blank as I use in carrying out my improved method; Fig. 2, an edge view thereof; Figs. 3 and 4, respectively plan and edge views of the blank after its handle-portion has been subjected to edgewise pressure to form the rudimentary handle and bolster; Fig. 3ª, a view of the rudimentary handle in transverse section on the line *a—b* of Fig. 3; Fig. 5, a plan view showing the blank after it has been rolled out and graded, by full lines, and by broken lines the same blank after it has been trimmed in suitable dies to develop the blade of the knife and to further develop the bolster; Fig. 5ª, a view in transverse section on the line *c—d* of Fig. 5; Fig. 6, a plan view of the knife completed ready for finishing, and Fig. 6ª, a view in transverse section on the line *e—f* of Fig. 6, showing by comparison with Fig. 5ª the development of the bolster.

My invention relates to an improved method of making that class of knives and kindred articles of cutlery which are formed from a single piece of metal, the object being to produce a high class article at a comparatively low cost.

With these ends in view, my invention consists in a method of making knives and kindred articles of cutlery comprising certain steps as will be hereinafter described and pointed out in the claims.

In carrying out my invention, as applied to the manufacture of knives, I first form a blank containing a handle-portion A, and a blade-portion B, from wrought or sheet-metal of uniform thickness, as shown by Figs. 1 and 2 of the drawings. The metal may be iron, steel, German-silver, or any other metal or composition of metal that it may be desired to employ. I then subject the handle-portion of this blank to edgewise pressure throughout its length, in suitable dies, which thicken it up and round its edges, and thus develop it, as shown in Figs. 3, 3ª, and 4, in which C, represents the rudimentary handle of the knife. I also develop the handle-portion A, of the blank in such a manner as to form a rudimentary bolster C′, located close to the inner end of the blade-portion B, of the blank, and clearly shown in Figs. 3 and 4 of the drawings. By preference this rudimentary bolster is developed at the same time the handle-portion A, of the blank is subjected to edgewise pressure throughout its length to develop the rudimentary knife-handle C. The dies for developing the handle-portion of the blank to form the rudimentary handle C, and the rudimentary bolster C′, will be shaped so as to dispose the metal in the manner best adapted to the subsequent development of the knife. Thus the inner portion of the rudimentary handle will be made rather thicker than its outer portion. This edgewise treatment of the handle portion of the blank, may be done without heating the same. I am thus enabled not only to save the expense of hot forging, but also the expense of finishing the metal after hot forging, which causes it to scale. I also avoid the expense of running and maintaining the apparatus required for hot-forging, which more-over is always expensive work, and requires skilled labor. I do not, however, wish to exclude myself from using hot-forging if I choose, though as before said, it is not essential to the prosecution of my invention.

After the blank has been subjected to edgewise pressure to develop the rudimentary handle C, and the rudimentary bolster C′, it is passed between rolls, whereby its blade-portion B, is greatly extended and graded in thickness according to the thickness of the blade of the knife to be produced. The form of the blade-portion B, of the knife after it has been rolled out, as set forth, is substantially shown by the full line D of Fig. 5 of the drawings. Of course the outline of the blade-portion after it has been rolled will vary more or less, as one blank will not roll just like another. Preferably when the knife is

rolled, it is rolled from end to end or in any other suitable manner, so as not only to roll out and extend its blade-portion B, but also to grade and further develop its rudimentary handle C, and its rudimentary bolster C′. I expect in rolling the partly developed blank to flatten the sides of the inner end of the rudimentary handle somewhat, as shown in Fig. 5 of the drawings. The rolled blank is then subjected to the action of dies, whereby its blade-portion is cut on the broken line E of Fig. 5 and the rudimentary blade E′ developed. The rudimentary handle is also cut away at opposite points in its upper and lower edges, just in rear of its rudimentary bolster C′, indicated by the broken lines F F, seen in Fig. 5 of the drawings, to form the notches F′ F′.

The trimming of the knife to develop the blade E′, and to form the notches F′ F′, may be done at one and the same operation, or not, as found expedient. The notching of the inner end of the rudimentary handle is for the purpose of further developing the bolster of the completed knife. Fig. 5ª of the drawings shows a transverse section through the inner end of the handle of the knife after it has been notched, as set forth. The knife is then again subjected to the action of dies, which develop its bolster, as shown by Figs. 6 and 6ª of the drawings, which represent the bolster G of the knife in substantially its final form. By preference the outer end of the handle will be rounded, as shown in Figs. 5 and 6 of the drawings. This may be done at any convenient time during the development of the knife.

By reference in particular to Fig. 5 of the drawings, it will be seen that by my process very little metal is cut off and wasted when the blank is trimmed to produce the right outline in the knife. It is well known that in the manufacture of knives as ordinarily constructed, very much more metal than this is cut off and thrown into the scrap heap. I would further add that hot forging being dispensed with, my invention may be carried on with comparatively unskilled labor, and that the knives produced in the rough, require less expensive operations to be performed upon them to finish them for the market.

If desired the rolling, grading and trimming of the blank may be done simultaneously in rolls having cutting edges or knives, instead of first rolling and grading, and then trimming by a separate operation.

The manufacture of kindred articles of cutlery follow the same steps, and do not need detailing as the method followed in the production of knives is illustrative of them all. I am aware, however, that it is not broadly new to subject the handle-portions of cutlery blanks to edgewise pressure for the purpose of thickening and rounding them at the point which will ultimately form the inner portion of the handle.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A method of making knives and kindred articles of cutlery, comprising the formation of a blank having a handle-portion and a short blade-portion, the said portions being well defined from each other, and the handle-portion approximating to the form of the handle to be produced, then subjecting the handle-portion of the blank to edgewise pressure throughout its length to develop it by thickening it and rounding its edges and to form a rudimentary bolster, and then rolling and trimming the blank to complete the development of the article, substantially as described.

2. A method of making knives and kindred articles of cutlery, comprising the formation of a blank having a handle-portion and a short blade-portion, then subjecting the handle-portion of the blank to edgewise pressure to develop it by thickening it and rounding its edges and to form a rudimentary bolster, then rolling and grading the blank to lengthen and extend its blade-portion, and trimming the rolled and graded portion to the form required, and notching the handle-portion close to the rudimentary bolster to develop the same, and subjecting the rudimentary article so formed to the action of dies for further shaping it, substantially as set forth.

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

EDWARD C. LOMBARD.

Witnesses:
GILBERT ROGERS,
CHARLES P. RICE.