

J. M. CLARK.

MANUFACTURE OF ORNAMENTAL TUBING.

No. 174,117.

Patented Feb. 29, 1876.

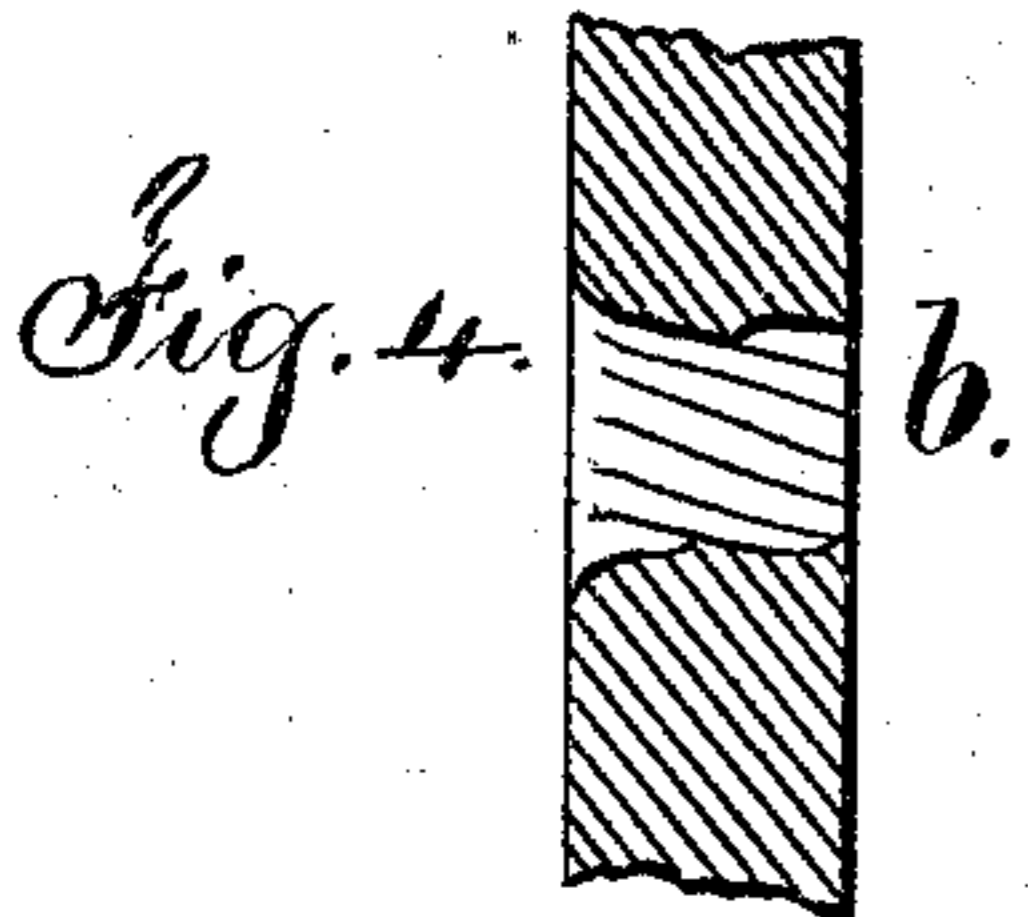
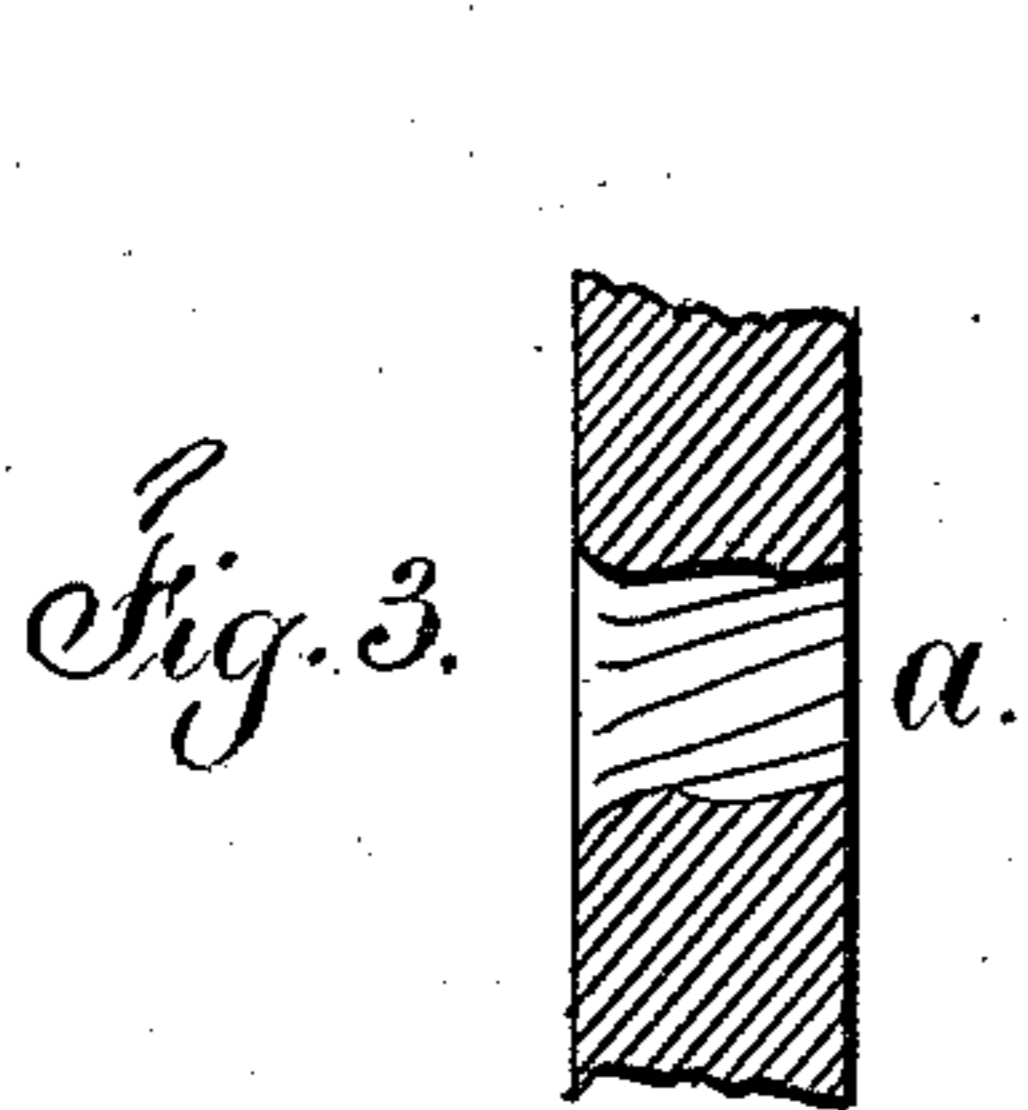


Fig. 2.

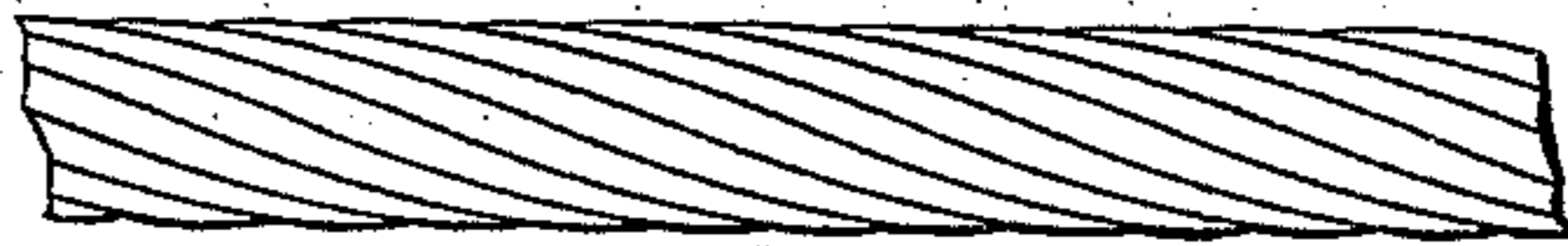


Fig. 1.

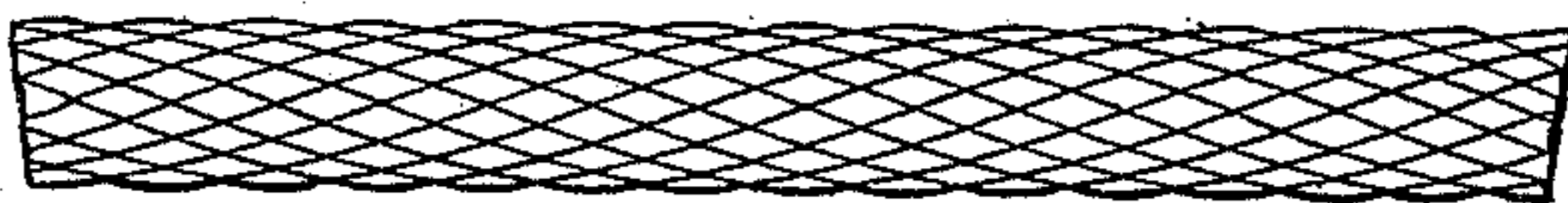
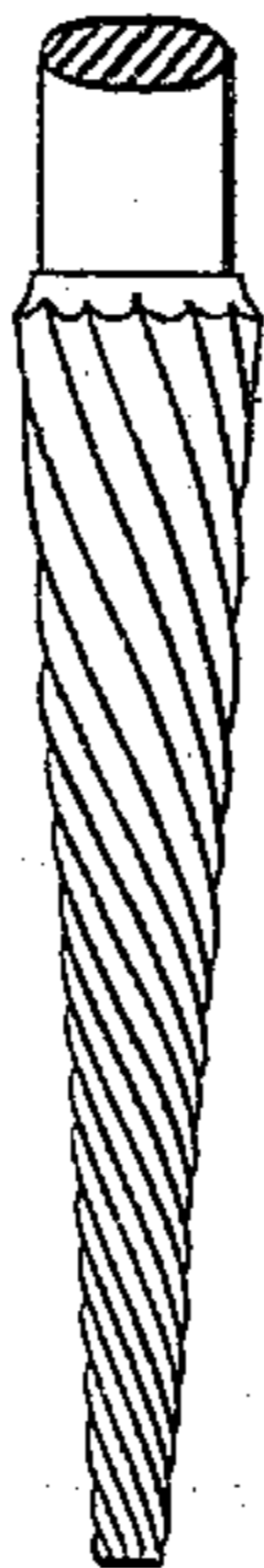


Fig. 5.



Witnesses

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attg.

UNITED STATES PATENT OFFICE.

JAMES M. CLARK, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN THE MANUFACTURE OF ORNAMENTAL TUBING.

Specification forming part of Letters Patent No. **174,117**, dated February 29, 1876; application filed February 3, 1876.

To all whom it may concern:

Be it known that I, JAMES M. CLARK, of Jersey City, in the county of Hudson and State of New Jersey, have invented an Improvement in the Manufacture of Ornamental Tubing, of which the following is a specification:

Ornamental tubing for pencil-cases has been made with grooves and ribs similar to a three, four, or more threaded screw, and this ornamentation has been done by a draw-plate die properly shaped, and a spiral or twist mandrel upon which the tube has been placed.

Tubes and pencil-cases have been ornamented by an engraved figure put upon the same by an engraving-engine, such figure being composed of ranges of diamond forms in relief. This operation is tedious and expensive for labor, and can only be done upon a case that is sufficiently thick; hence with gold and silver such cases are costly.

By my improvement I am enabled to employ very thin sheet metal, and render the tube stiffer than a plain tube, and at the same time to ornament the tube in a much less time than by engraving, without loss of material, and to produce a series of quadrangular or diamond-shaped figures in relief, that are very handsome.

In the drawing, Figure 1 represents the tube in a finished condition. Fig. 2 represents the tube after the first operation. Fig. 3 is a section of the draw-plate die for performing the first operation, and Fig. 4 is a similar view of the draw-plate die for performing the second or finishing operation.

The dies *a* and *b* are of the proper size for making the ornamentations upon the tube. One die, *a*, is provided with ribs and grooves upon its inner tapering surface that incline to the axis in one direction, and the other die, *b*, is made with ribs and grooves upon its inner tapering surface, inclining in the opposite direction. These grooves are preferably made by a tapering punch, such as shown in Fig. 5, which punch is pressed into the die while the latter is in a soft condition. The die is also to be filed up, and the edges properly rounded. The punch for the second die is similar, but

the angle of the inclination of the grooves is the reverse.

The thin sheet-metal tube is inserted through this die *a* upon the draw bench, and pulled through such die. Either the tube or the die must be allowed to revolve in consequence of the screw form of the grooves. This operation imparts to the tube the form shown in Fig. 2, and it is to be understood that a tube in the form shown in Fig. 2 has before been made, and I do not claim the same.

The tube is to be run through the second draw-plate die *b*, in which the grooves stand at the opposite angle, the result of which is that the first ribs are crossed by a second set of grooves that divide such ribs into quadrangular or diamond-shaped projections, producing a figure somewhat similar to the figure known as the "barley-corn" in engine-engraved work, but the figure is bent in the thin sheet metal instead of being engraved. The bending operation will be most perfect after the tube has been passed through the first die as a third operation, and then again through the second dies, as a fourth operation, or else two other dies similar to the first and second, but slightly smaller, may be employed for the third and fourth operations.

The grooves and ribs may be rounding sectionally, or with angular faces, according to the shape of the barley-corn projections to be formed.

I claim as my invention—

1. The method herein specified, of ornamenting tubing, by drawing the same successively through two dies grooved spirally in opposite directions, substantially as set forth.

2. The ornamental tubing with the quadrangular or barley-corn projections, bent in the thin metal of such tubing, as a new article of manufacture.

Signed by me this 1st day February, A. D. 1876.

JAS. M. CLARK.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.