B. C. CONVERSE.

Manufacture of Metal Tubing.

No. 204,136. Patented May 28, 1878.

Fig. 1.

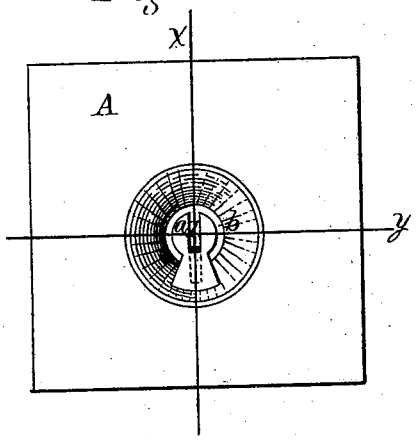


Fig. 2.

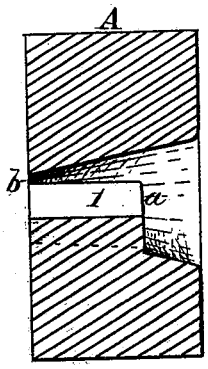


Fig. 3.

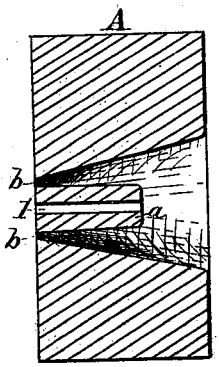


Fig. 5.

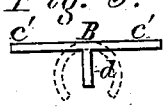


Fig. 6.

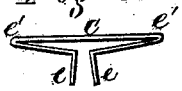


Fig. 7.

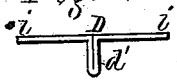


Fig. 8.

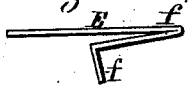


Fig. 4.

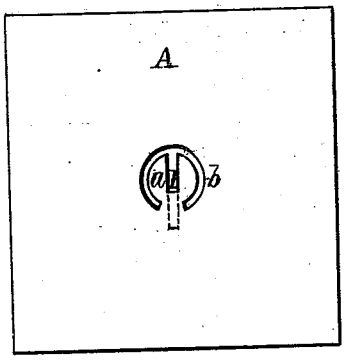
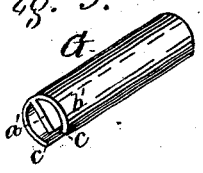


Fig. 10.

Fig. 9.



Witnesses

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UNITED STATES PATENT OFFICE.

BOLIVAR C. CONVERSE, OF SPRINGFIELD, OHIO.

IMPROVEMENT IN THE MANUFACTURE OF METAL TUBING.

Specification forming part of Letters Patent No. **204,136**, dated May 28, 1878; application filed August 13, 1877.

To all whom it may concern:

Be it known that I, BOLIVAR C. CONVERSE, of the city of Springfield, in the county of Clarke and State of Ohio, have invented a Die or Tool and Processes for Manufacturing a new article of Metal Tubing; and I hereby declare that the following is a specification of the same, in which the construction of the die, the process of manufacture, and the product are fully set forth.

My invention will be fully understood by reference to the drawings, in which—

Figure 1 is a view of the open or rear side of a die for drawing my tubing. Fig. 2 is a vertical cross-section of the same through line *x*. Fig. 3 is a horizontal cross-section of the same through line *y*. Fig. 4 is a view of the front or reverse side of the die A, through which the tubing is drawn; figs. 5 to 8, views illustrating different modes of forming the T-shaped strip or skelp. Fig. 9 shows a section of the finished tubing G, an opening being left between its edges *c c* its entire length. *a'* is the rib, and *b'* the body, of the same; and Fig. 10 is a cross-section of the tube G.

The finished sections shown in Figs. 9 and 10 are narrow-ribbed for special purposes. The slot 1 in the die may be made of any depth required, as shown by the dotted extension lines in Figs. 1 and 4.

The illustrations shown in Figs. 5, 6, 7, and 8 exhibit modifications of the "stock-strip," as it is called, and the manner of bending and doubling the same for the manufacture of the new article of open-rib tubing.

The dies A are constructed with the usual conical opening *b*, converging toward the front or exit side, the face of the opening being smooth and unbroken, and a core, *a*, supported on one side within the opening. This is provided with a deep forming groove or slot, 1, extending in depth partially or wholly through it for forming an inner rib, *a'*. (See Figs. 9 and 10.)

The web which supports the core is made thick or thin, according to the width required for the opening between the edges *c c* of the tube G. The groove 1 may extend in depth not only through the core *a*, but also through the web, and even into the body of the die, as seen in the dotted lines, Fig. 4, according to the width required for the rib *a'* and the purposes for which the tubing may be used. I do not, therefore, confine myself to any particular or proportional depth for the groove 1 in the die A in the fabrication of my tubing.

For small tubing for dash moldings, edgings, bindings, &c., for articles of leather manufacture requiring a narrow rib, the groove 1 need not extend deeper than cut in the die A, while in larger tubing for hand and stair rails it may extend to the depth shown in the dotted lines, Fig. 4.

In the manufacture of single-thickness tubing the strip B (shown in Fig. 5) is first rolled out in angle-rolls to the approximate size, and its edges trimmed to the proper width, and then introduced into the die by bending down the edges *c' c'*, as shown in the dotted lines, care being taken to direct the part *d* for forming the rib into the groove 1. The pieces shown in Figs. 6, 7, 8, made by bending a flat sheet of metal to form a strip having a T-shaped cross-section, are introduced in the same manner, the parts *e e d'* and *f* being drawn into the groove 1 to form the rib.

I claim as my invention—

1. The within-described mode of making a tube having a central internal rib, the same consisting in forming a skelp of a T-shaped cross-section, and then passing the same through a tapering die having a core, *a*, with a central slot, 1, as set forth.

2. The within-described die, consisting of the block A, having an opening tapering uniformly from one face to the other of the block, and a short cylindrical slotted core, *a*, supported by a web having parallel edges, and extending centrally from the contracted end of the opening, all as set forth.

3. As a new article of manufacture, a tube the edges of which are separated, and from which extends centrally toward the slot between said edges a rib, as set forth.

BOLIVAR C. CONVERSE. [L. S.]

Attest:
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