J. C. MILLIGAN.

Sheet Metal Tube.

No. 168,100. Patented Sept. 28, 1875.

Fig: 1.

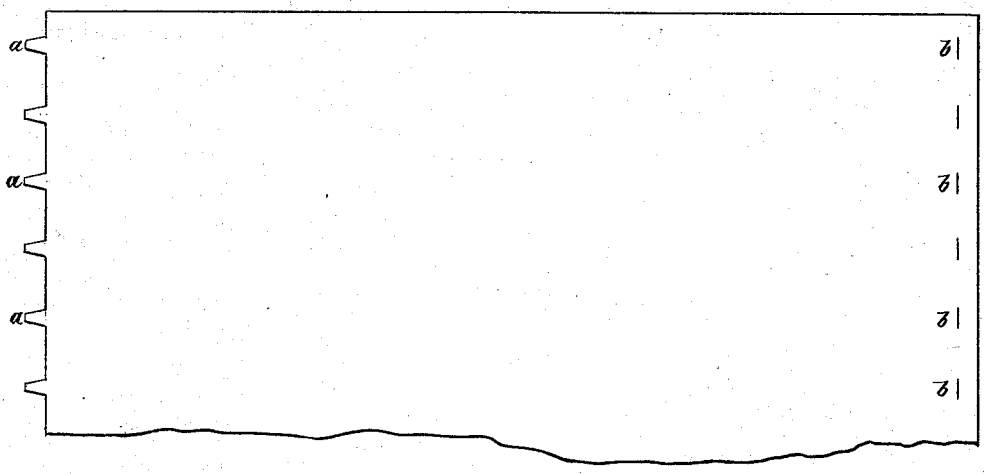


Fig: 2.

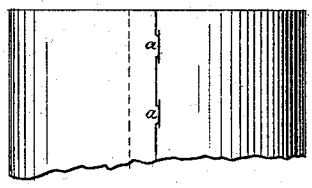
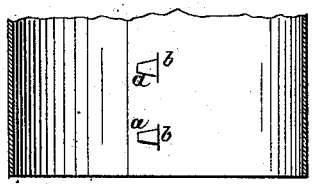


Fig: 3.



Witnesses:

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per Prescott & Bell Attys

UNITED STATES PATENT OFFICE.

JOHN C. MILLIGAN, OF SOUTH ORANGE, NEW JERSEY.

IMPROVEMENT IN SHEET-METAL TUBES.

Specification forming part of Letters Patent No. **168,100**, dated September 28, 1875; application filed July 8, 1875.

To all whom it may concern:

Be it known that I, JOHN C. MILLIGAN, of South Orange, in the State of New Jersey, have invented a new and useful Improvement in Sheet-Metal Tubes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, and to the figures and letters of reference marked thereon, and in which—

Figure I is a view of a sheet of metal prepared according to my invention, before being formed into a pipe or tube. Fig. II is an outside view of the completed tube, showing the longitudinal seam. Fig. III is a vertical section of the completed tube, showing the longitudinal seam.

My invention relates to an improved method of forming the longitudinal seam in sheet-metal tubes, dispensing with any fastening device other than that provided by the metal of which the tube is formed, thereby enabling me to make a tube which can be produced very cheaply, and which can be shipped after being bent into tubular form, each bent sheet being complete in itself, and ready to be formed into finished tubes.

The peculiar advantage to be derived from this mode of shipping them in tubular form arises from the fact that one may be placed within the other, thus economizing great space, as also saving the use of any machinery for bending them into the tubular form on arrival at their destination.

These sheets are formed into finished tubes whenever it is desired simply by bending, no bolts or rivets being required, the devices for forming the longitudinal seam being always a part of the sheet.

Referring to the accompanying drawing, Fig. I shows a sheet ready to be bent into a pipe or tube, the tongues *a a a* being formed and left projecting from one edge, and the slits *b b b* being formed near the other edge. A slit is always formed directly opposite a tongue, and the slits *b b* are so formed that the tongues *a a* will just pass through them.

When it is desired to form the flat sheet into a pipe, it is bent in any convenient manner, and the tongues *a a* are passed through the slits *b b* from the outside to the inside, after which they are bent backward and closely pressed upon the portion of the sheet in which are the slits *b b b*. The longitudinal seam is thus formed by a number of hooks, as it were, the tongues *a a* forming the hooks after they have been passed through the slits *b b b*. When the tongues are bent backward, after having been passed through the slits *b b b*, they effectually unite the two margins of the sheet, and the longitudinal seam thus formed, though not a perfectly-tight joint, will be as close as the ordinary riveted seam, and possess the advantage of being formed entirely by the configuration given to the two margins of the sheet, and without any device which is not a part of the sheet.

Figs. II and III show the sheet after being formed into a tube, and do not require any special explanation.

The size of the tongues *a a a* must depend upon the thickness of the sheet metal used and the size of the tube, no special size or form being required.

The slits *b b b* will be so proportioned as just to allow the tongues *a a a* to pass through them.

I claim as my invention and desire to secure by Letters Patent—

As a new article of manufacture, a sheet-metal tube the longitudinal seam of which is formed by a series of tongues projecting from one edge of the sheet, which pass through slits near the opposite edge of the sheet, and are bent backward upon the surface of the inner lap of the tube so formed, substantially as herein described and set forth.

JOHN C. MILLIGAN.

Witnesses:
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