

W. DICKS.
TUBING.

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1,045,957.

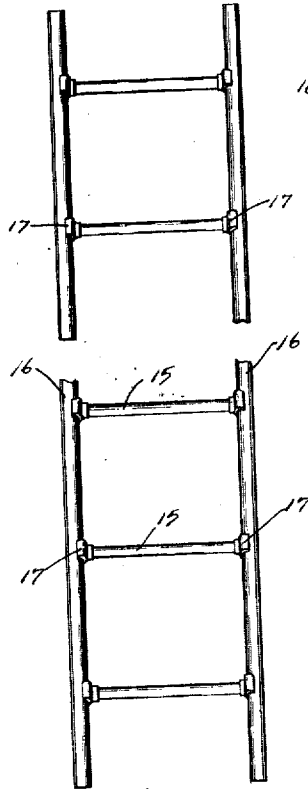


Fig. 6.

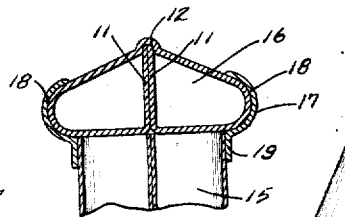


Fig. 8.

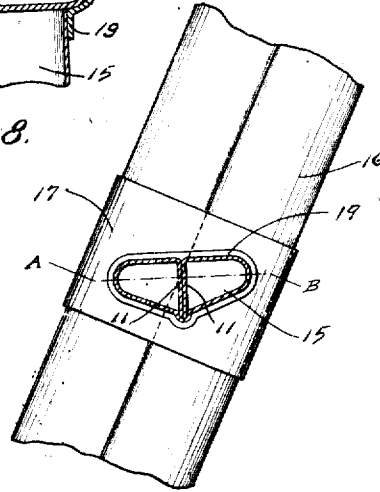


Fig. 7.

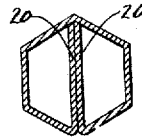


Fig. 2.

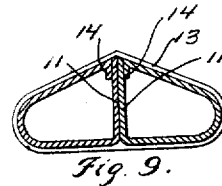


Fig. 9.

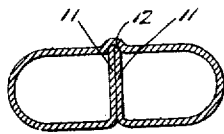


Fig. 1.

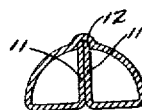


Fig. 3.

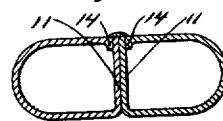


Fig. 10.

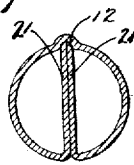


Fig. 4.

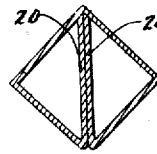


Fig. 5.

WITNESSES:

Walter H. Kelley
Bessie E. Dempsey

INVENTOR.

William Dicks

BY *Wm. Ellis*

ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM DICKS, OF BUFFALO, NEW YORK.

TUBING.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM DICKS, a citizen of the United States of America, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Tubing, of which the following is a full, clear, and exact description.

The objects of my invention are to provide a tubing which shall be light and strong and cheap to manufacture and which shall be applicable to ladders, bedsteads, poles, posts, or the like.

Reference is to be had to the accompanying drawings, forming part of this specification, in which like characters of reference indicate like parts throughout the several views, of which:

Figure 1 is a sectional view of an oblong form of tubing. Fig. 2 is a sectional view of a hexagonal form of tubing. Fig. 3 is a sectional view of a semi-circular form of tubing. Fig. 4 is a sectional view of a circular form of tubing. Fig. 5 is a sectional view of a square form of tubing. Fig. 6 is a front elevation of a ladder formed from my tubing. Fig. 7 is an enlarged fragmental side elevation of Fig. 8 and shows the side rails and the steps made from the preferred form of my tubing. Fig. 8 is a sectional view of one of the side rails and is taken on line A--B of Fig. 7. Fig. 9 is a sectional view of a form of tube similar to that shown in Figs. 6 to 8 but of slightly modified construction. Fig. 10 is a sectional view of an oblong form of tubing similar to the form shown in Fig. 1 but of a slightly modified construction.

My tubing is preferably made of sheet metal, which is drawn through suitable dies and thus formed into shape.

In most of the forms of my tube when it is being drawn each edge of the material is formed with a right-angled flange 11. This flange is made substantially equal in width to the over-all thickness of the finished tube. The material is now bent upon itself from each edge and equidistant from the center thereof, so that the flanges 11 are brought next to each other and in such a position that they extend centrally across the tube and provide a rigid stiffening rib.

In tubes of polygon sections which have an even number of sides, the edges of the flanges 20 will be held in position by one

corner of the tube, as shown in Figs. 2 and 5 and thus prevent their movement side-wise. But in sections which have flat, tapering or curved sides, some means must be employed for preventing the flanges from becoming displaced. To accomplish this, I preferably provide a longitudinally extending groove 12 which is formed in the sheet of material and when the sheet of material is drawn into shape, the flanges 11 will engage the groove. In a similar way the edges of the flanges 21 (Fig. 4) are engaged by the groove 12 in tubes substantially cylindrical in form.

In Fig. 9 I have shown a tube of the preferred form, which is made up of two separate pieces of material secured or held together by any suitable means. In this figure, I have shown band 13 surrounding the tubing. These bands may be placed at intervals along the length of the tubing and thus firmly hold the two halves together.

In Fig. 10 I have shown a tube, in form similar to that shown in Fig. 1, but like Fig. 9, it is made up of two pieces of material. I have here shown the parts of the tube secured together by being welded, brazed or soldered at the joint.

When I make my tubing in two parts, as shown in Figs. 9 and 10, I preferably form an inwardly turned flange 14 at the upper edge of each part and when the tubing is finished these flanges 14 bear against the flanges 11.

In Figs. 6 to 8, where I have shown a ladder formed of my tubing, the steps 15 are held in place against the side rails 16 by means of clamping members 17. Each of these members 17 have flanges 18 which conform to the shape of the side rails 16 and fit over the same. Through each member 17 and disposed at a proper angle is punched an aperture which is provided with a flange 19 and which is made to fit the shape of the steps 15. When assembled the flange 18 of the clamping members 17 are placed around the side rails 16 and securely fastened thereto by being clamped in place.

Obviously, some detailed modification may be made in my tubing as herein shown and described and many other shapes not shown may be made without departing from the spirit of my invention and I do not wish to be limited to the exact embodiment herein shown and described.

Having thus described my invention, what I claim is:

1. As a new article of manufacture, tubing formed from a single sheet of metal and provided with central intumed flanges which contact on their inner sides, and means formed in the outer wall of said tubing for receiving the ends of said flanges and engaging them on their outer sides and end edges, whereby the said flanges are locked in their central position so that they act as stiffening ribs.

2. As a new article of manufacture, tubing formed from a single sheet of metal and provided with central intumed flanges which contact on their inner sides, and a groove formed in the outer wall of said tubing which receives the ends of said flanges and engages them on their outer sides and end edges, whereby the said

flanges are locked in their central position so that they act as stiffening ribs.

3. As a new article of manufacture, tubing formed from a single sheet of metal bent downwardly, inwardly and upwardly so that the end portions of said sheet form central flanges which contact on their inner sides and means formed at the center of said sheet for receiving the ends of said flanges and engaging them on their outer sides and end edges, whereby the said flanges are locked in their central position so that they act as stiffening ribs.

In testimony whereof, I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM DICKS.

Witnesses:

J. WM. ELLIS.

WALTER H. KELLEY.