

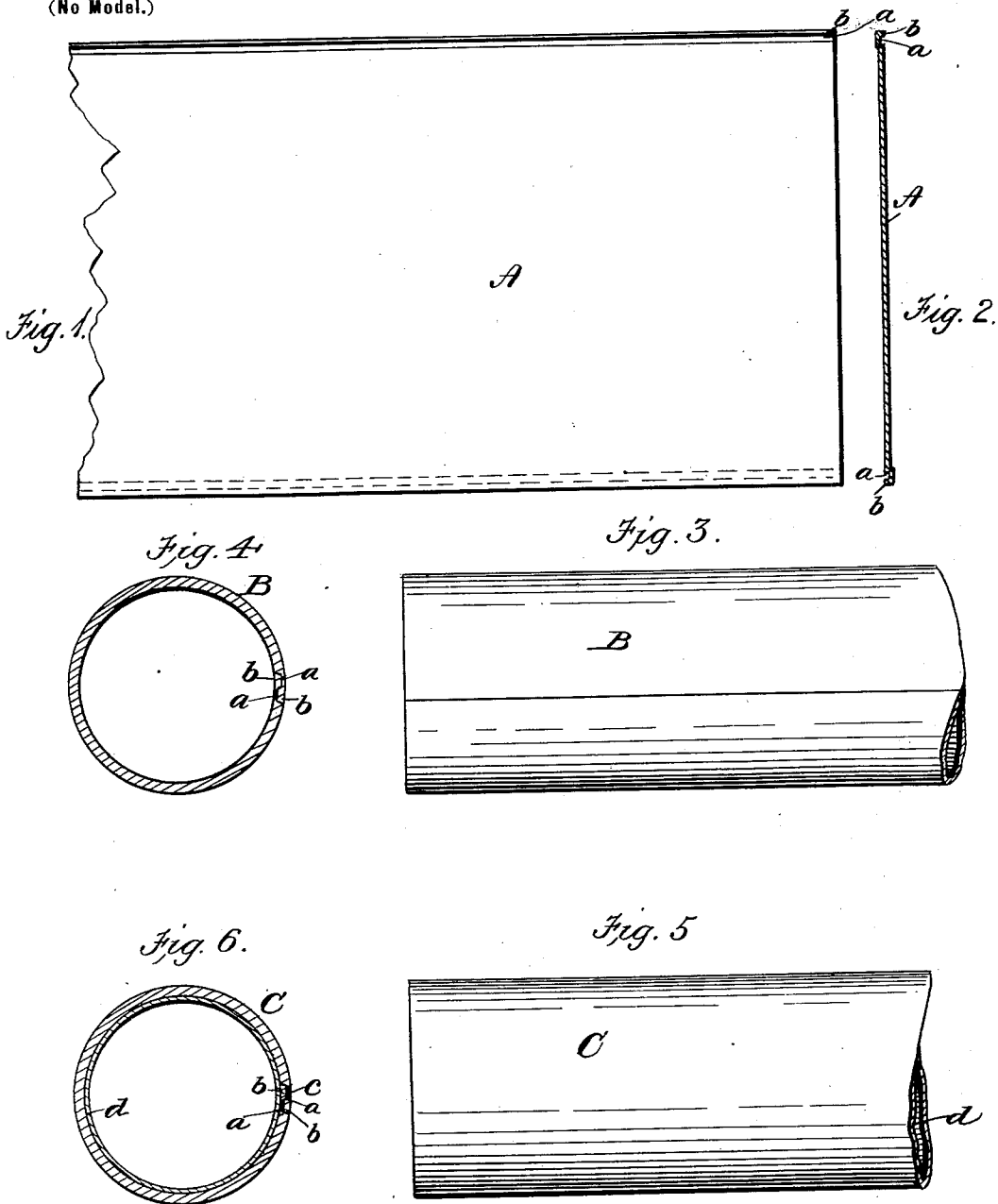
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Patented Aug. 7, 1900.

T. MIDGLEY.
METALLIC TUBING.

(Application filed Jan. 12, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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METALLIC TUBING.

SPECIFICATION forming part of Letters Patent No. 655,304, dated August 7, 1900.

Application filed January 12, 1900. Serial No. 1,225. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MIDGLEY, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Metallic Tubing; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to metallic tubing used for conducting fluids or constructing the frames of bicycles, tricycles, or other vehicles, has for its object lightness and strength and economy in the manufacture, and consists in certain improvements which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a plan of a blank used for the manufacture of my tubing; Fig. 2, a transverse section of the same; Fig. 3, a side elevation of a part of a section of tubing before the joint or seam has been metalically joined; Fig. 4, a transverse section of the same; Fig. 5, a side elevation of a part of a section of completed tubing, and Fig. 6 a transverse section of the same.

Reference being had to the drawings and the letters thereon, A indicates a blank of sheet-steel from which the tubing is made and is of a width in excess of the circumference of the tubing equal to the lap of the seam and of the length of the tubing to be made. On each edge of the blank A, which has been rolled to the gage desired, is a longitudinal groove *a*, and adjacent thereto is a rib *b*, thinner than the width of the groove as shown in Figs. 1 and 2, the grooves and ribs being formed on opposite sides of the blank, so that when the blank is formed into tubing B upon a proper mandrel the groove and the rib on one edge overlap and interlock with the groove and the rib on the opposite edge, as shown in Fig. 2. The joint or seam formed by the overlapping and interlocked members *a b* are pressed down closely into each other by a die or roller and part of the metal in the edges of the blank displaced, transferred into, and the

rib enlarged to fill the groove, as shown in Figs. 2 and 6, to form a joint or seam of the same gage or thickness as the remaining portion of the body of the tubing, thus preventing separation of the joint when the tubing is dipped in a bath of molten metal for metalically joining the members and insuring lightness and uniformity of gage.

After the joint or seam of the tubing has been formed by overlapping, interlocking, and pressing the seam formed by the members *a b* the tubing is immersed in a bath of molten soft metal, preferably brass, and the adjacent faces of the members forming the joint or seam are metalically joined together at *c* by soldering or brazing and the tubing coated internally and externally with the metal of the bath. The exterior surface may then be removed by a suitable abrading-machine, giving a finish thereto to receive a suitable coating of enamel, or the outer surface of brass may be allowed to remain to protect the tubing against corrosion, while the coating *d* on the inner surface protects the interior of the tubing C. The joint or seam thus formed is neat, invisible in the completed tubing, and is sufficiently strong to resist wear and strain brought to bear upon the tubing in the various uses to which it may be subjected.

Having thus fully described my invention, what I claim is—

1. The method of making metallic tubing herein described, which consists in forming a blank with opposite grooves and ribs on the edges thereof, said ribs being thinner than the width of said grooves, bending the blank into the form of a tube with the members overlapped and interlocked, pressing said interlocked members into a seam or joint and thereby enlarging said ribs and filling said grooves, and then joining the members of the seam with soft metal.

2. The method of making metallic tubing herein described, which consists in forming a blank with opposite continuous and longitudinally-extending grooves and ribs on the edges thereof, said ribs being thinner than the width of said grooves, bending the blank into the form of a tube with the members on

the edges overlapped and interlocked, pressing said members into a seam or joint of the same gage as the tube and thereby enlarging said ribs and filling said grooves, and then
5 immersing the tube in a bath of molten metal and joining the members of the seam and coating the surfaces of the tubing.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS MIDGLEY.

Witnesses:

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