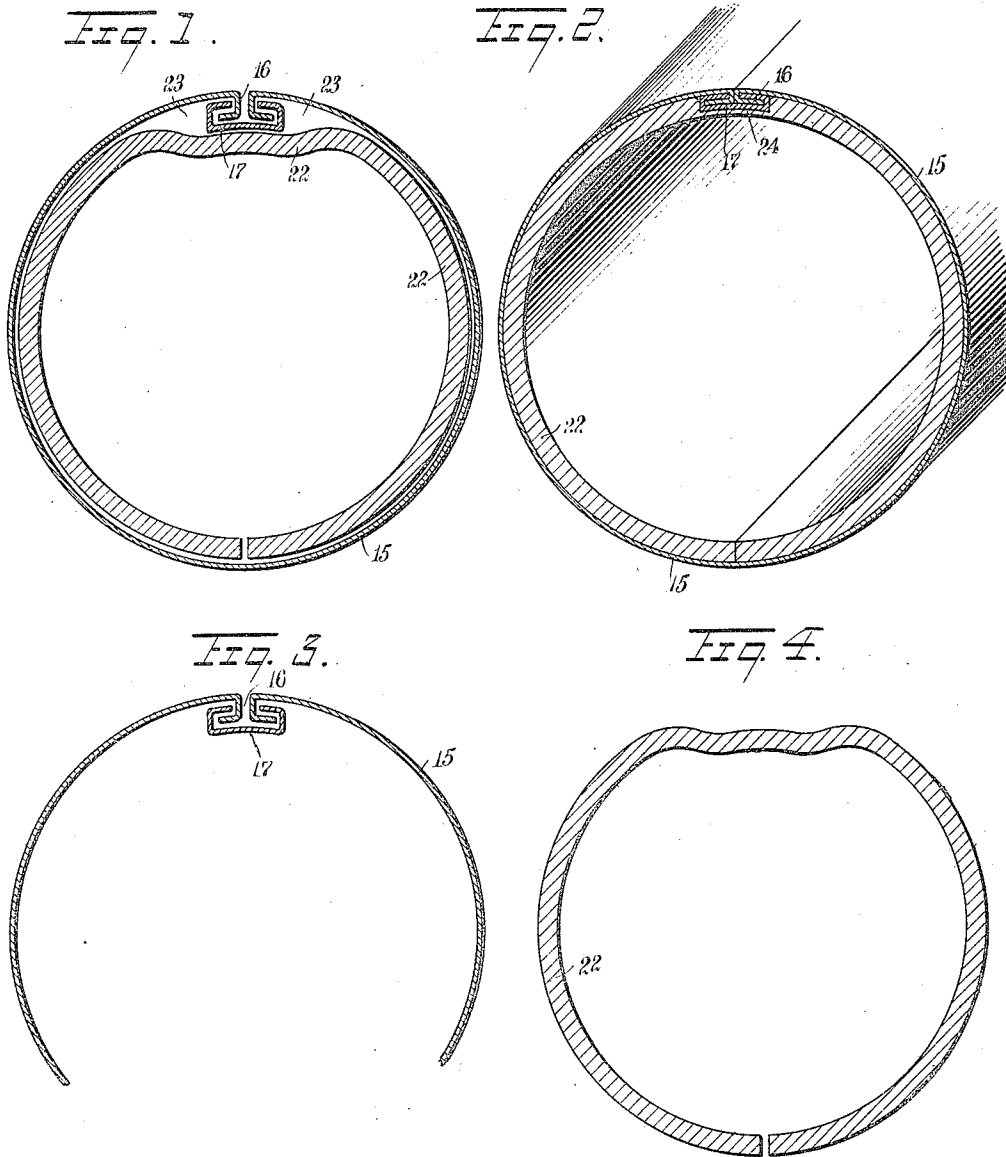


P. H. FRIEL.
 LOCK SEAM TUBE.
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WITNESSES:
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LOCK-SEAM TUBE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PATRICK H. FRIEL, a citizen of the United States, and a resident of Buffalo, in the county of Erie and State of New York, have invented a new and Improved Lock-Seam Tube, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide means for interlocking the various layers of metal wherefrom the completed tube is constructed, in a form wherein the joined ends of each layer are prevented from spreading by the body structure of the other layer; and to provide a tube constructed of a series of layers arranged to form a continuous wall having an even thickness.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a cross section of a tube constructed and arranged in conformity with this invention, showing the parts in their assembled but loose positions; Fig. 2 is a cross section of the same, the parts being pressed into locking relation; Fig. 3 is a cross section of the tube covering shown in position to be assembled; and Fig. 4 is a cross section of the body tube shaped to the form imparted to the same tube as shown in Fig. 1.

The particular employment for which the present invention is designed is the manufacture of tubing for bedstead construction. It is often necessary to employ a body tubing constructed from some of the cheaper metals, such as soft rolled steel, iron, etc., the solid brass tubing being too expensive for popular use. Where the same economical metals have been used the exposed surfaces have been bronzed or metallic coated. In some instances the coating has been applied by electro-plating. The coated metals have necessarily been largely alloyed with copper, and consequently the luster imparted subsequently by buffing has been of a duller character than the trade demands. This lack of luster in the coated tubes has given rise to the employment of a sheet metal covering of the character herein shown and described. In this particular art, also, it has become necessary to discontinue the use of the seamless tube, because of the greater economy of the seam tube structure.

The cost of the brass employed in the manufacture of tubes of the character shown is largely in excess of the other materials forming part of the said tube. The cover 15 is provided with inwardly curled or hooked ends 16, 16. The hooks 16, 16 are formed as small as the structure permits, in order that the material of which the cover is constructed may be saved. The hooks 16, 16 are infolded by a channel clip 17. The clip 17 is constructed from sheet steel, and in the form substantially as shown in the drawings. The clip 17 is elongated to the length of the tube, and prior to the body layer 22 being placed within the cover 15, the said clip is adjusted in position. When the cover 15 and channel clip 17 are thus adjusted, the body layer 22 is placed in position. In the form of construction illustrated in the drawings, the body layer 22 is disposed relative to the channel clip 17 so that the parted edge of the body layer is located in a position removed from the clip 17 or the hook ends 16, 16 of the cover 15. This construction is particularly adapted for the formation of tubing where the strain and stress is to be principally considered, for the reason that this form of tubing is by me considered as having great structural strength.

The tube is formed by being drawn through contracting dies generally disposed on a draw bench provided with appliances for hauling the tube through said dies. The dies employed by me have in the eye thereof a dead die roller, over which passes the section of the tubing wherein is located the channel clip 17 and hooks 16, 16. The compression imparted to these members results in the jamming of the interlocked parts in firm and rigid holding relation. The effect of the contraction of the tube is to draw the longitudinal shoulders of the hooks 16, 16 together, forming in the outer surface of the completed tube a fine and not prominent line or crease. The effect of the contraction of the body layer 22, when the tube is thus die drawn, is to force the folded metal of the hook 16 and the channel clip 17 into the metal of the body layer 22. The body layer 22 is formed from material sufficiently thick to receive the said folded layers. A further effect of the contraction is to draw the body layer 22 to a smaller diameter, forcing the edges of the said body layer together to form a complete tube, the inner surface

whereof is cylindrical. When the tube thus constructed is drawn through the die, it has assumed the form shown in Fig. 2 of the drawings, where it will be noticed, the lock on the inner side of the tube formed by the hooks 16 and clip 17, is completely closed, and the combined layers of metal constituting the lock is forced within the thickness of the body layer 22. It will be further observed that the lock thus formed is exceedingly strong, due to the fact that the clip 17 is maintained from spreading by the body layer 22, which, in turn, is prevented from spreading by the cover 15. The cover 15 cannot expand without being released from the clip 17. When it is desired to form a screw thread in the tube thus constructed, it will be found possible, as care is exercised to form perfect cylindrical surfaces for the completed tube.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A lock seam tube, comprising a cover portion having hook-shaped longitudinal connecting edges extended within said tube and said edges being extended each from the other; a channel clip independently formed and infolding the said hook-shaped edges; and a channeled tubular body layer holding the said clip within the channel thereof.

2. A lock seam tube, comprising a cover portion having hook-shaped longitudinal connecting edges extended within said tube and said edges being extended each from the other; a channel clip independently formed and infolding the said hook-shaped edges; and a tubular body layer having butted longitudinal edges removed from said clip, said body layer having a deep longitudinally disposed channel to receive said clip and having a thinned section adjacent said clip to form an even cylindrical inner surface for said tube.

3. A lock seam tube, embodying a cover portion having inturned hook-shaped longitudinal connecting edges; a connecting clip having inturned longitudinal hook-shaped edges to infold the hook-shaped edges of said cover; and a tubular body layer having an outwardly arranged longitudinally disposed groove to receive and hold said clip, said tubular body layer having an evenly curved inner complete cylindrical surface.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

PATRICK H. FRIEL.

Witnesses:

JAMES J. CLEARY,
JOHN J. SULLIVAN.