June 3, 1930. H. S. GILLETT 1,761,034

TUBE

Filed Dec. 1, 1927

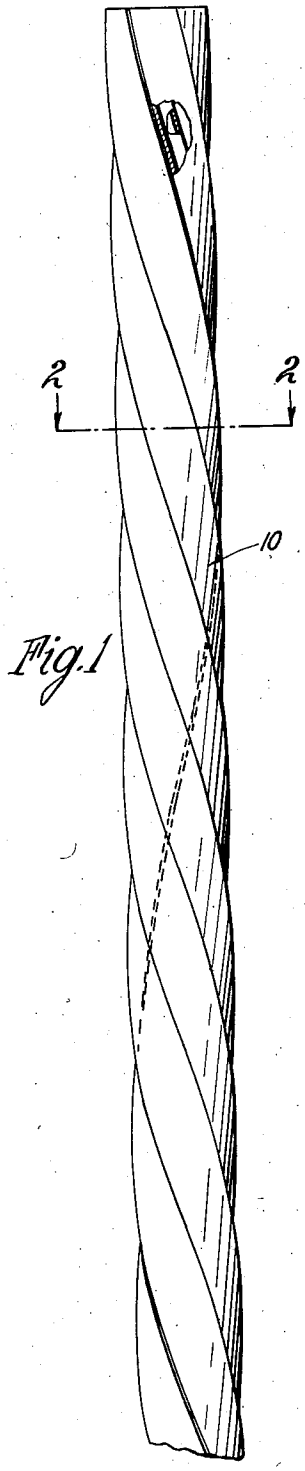


Fig. 1

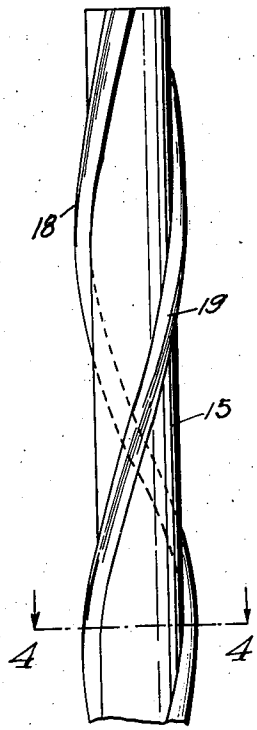


Fig. 3

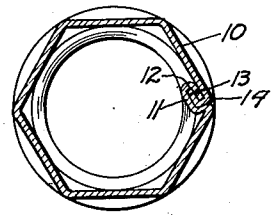


Fig. 2

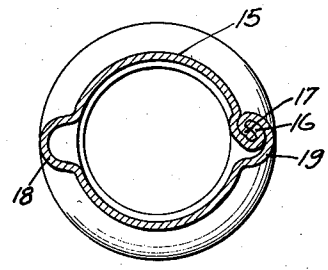


Fig. 4

Inventor
Harry S. Gillett
by Henry Mech
Attorney

Patented June 3, 1930 1,761,034

UNITED STATES PATENT OFFICE

HARRY S. GILLETT, OF CHICAGO, ILLINOIS; IDA LOUISE GILLETT, EXECUTRIX OF SAID HARRY S. GILLETT, DECEASED, ASSIGNOR TO EDWIN J. ELTING, OF CHICAGO, ILLINOIS

TUBE

Application filed December 1, 1927. Serial No. 237,000.

The invention relates to tubing particularly to the kind in which the seam is formed as a lock joint and to the method of producing the same.

It is an object of the invention to provide a lock joint tube which is twisted in order to enhance the ornamental appearance thereof.

It is a further object of the invention to provide a lock joint tube which is reinforced by twisting said tube, so that the walls of said tube are strengthened.

Other and equally important objects will become apparent from a perusal of the invention which comprises the means set forth in the specification, particularly pointed out in the claims forming a part thereof, and illustrated in the accompanying drawing, in which:

Fig. 1 is an elevational view of a tube constructed in accordance with my invention,

Fig. 2 is a section on the line 2—2 of Fig. 1,

Fig. 3 is a fragmentary elevational view of a slightly modified tube,

Fig. 4 is a section on the line 4—4 of Fig. 3.

Referring to the several views of the drawing, 10, generally designates a tube which in the present instance is hexagonal in cross section prior to the twisting operation which as shown has already been applied thereto. The tube is formed at its meeting edges with a lock joint and is particularly shown in Fig. 2.

Edge 11 of the tube is bent upon itself to provide a pocket 12 to receive the free extremity 13 of the edge 14 of the tube so that the free edges of the tube are connected by a lock joint preventing disengagement of the edges in a direction at right angles to the axis of the tube.

Attention is called to the fact that while this engagement of the edges 11 and 14 is effectively prevented by reason of the lock joint, yet the edge 14 is free to slide on the edge 11 or vice versa, when such sliding movement is necessary or desirable.

In order to provide a twisted tube, one end of the tube 10 is clamped in a head or chuck to be securely held against rotation. To the other end a torque is applied in any convenient or expedient manner and this torque is exerted until the tube is sufficiently twisted so that the corners of the hexagonal cross section change from lines parallel to the axis to lines that follow a spiral course along the perimeter of the tube. In this twisting operation there occurs a shortening of the tube and this shortening is made possible by reason of the fact that the edges 11 and 14 slide on each other, thus facilitating the twisting process. The tube, in addition to its enhanced ornamental appearance is simultaneously reinforced, whereby it is enabled to withstand stresses or strains which might be set up during use of the tube for the specific purpose to which it is assigned.

Hitherto twisted tubes have only been known to be made by subjecting the tube to the action of surface rollers which impart to the surface of the tube indentations and ridges in simulation of a twisted tube. But an actual twisting operation, as far as it is known, has never been attempted because tubes with a welded seam could not be twisted by reason of the fact that it would cause an uneven distortion of the tube wall, so that the appearance of winding lines had to be created by an indentation or formation without, however, causing the longitudinal lines at the periphery of the tube to lose their parallelity to the central axis of the tube. In the present invention the main distinction is predicated on the fact that the generatrices subsequent to the twisting operation lose their parallelity with the central axis of the tube and have a winding course in the form of a spiral equidistant from the axis throughout their length.

In Figs. 3 and 4 a tube 15 is shown which has a circular cross section and the edges 16 and 17 are interlocked in the same manner as described for the preceding embodiment of the invention, affording a sliding movement between said edges under a twisting operation. The tube 15 is provided at diametrically opposite points with beads 18 and 19 which are provided purely for ornamental reasons. After a twisting operation has been carried out with the tube 15, every generatrix of the round tube is changed from its parallel relation to the central axis to a winding or spiral

line equidistant throughout its length from the axis. This is evident from the beads 18 and 19, which as shown in Fig. 3 appear as spiral beads winding on the tube and the number of convolutions is determined by the duration of the torque applied to the free end of the tube while the other end is held securely against rotation.

While the drawing shows preferred embodiments of the invention, they are shown by way of example and not by way of limitation. It, therefore, is not my intention of limiting the invention to the details as shown, nor to the sequence of steps of the method employed, but wish to include all changes and alterations constituting departures within the scope of the invention as defined in the appended claims.

I claim:

1. The method of twisting a tube, including the steps of interlocking the longitudinal edges so as to permit sliding of the edges on one another but preventing lateral movement, and subjecting one end of said tube to a torque.

2. The method of twisting a tube, including the steps of arranging the longitudinal edges to slide on one another but preventing lateral movement and subjecting one end of said tube to a torque.

3. A tube having its longitudinal edges secured by a lock joint forming a concealed seam within the periphery of the tube and extending spirally around the tube, said joint permitting longitudinal movement but preventing relative lateral movement of the tube edges.

In witness whereof I affix my signature.

HARRY S. GILLETT.