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F. ROEMER

2,132,189

FLEXIBLE METAL TUBE

Filed June 9, 1937

Fig. 1

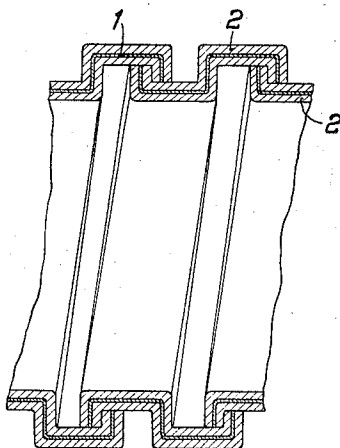


Fig. 2

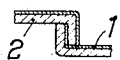


Fig. 3

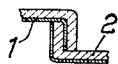
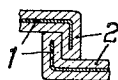


Fig. 4



Inventor:
F. Roemer

By: *Glascoff, Downing & Seibold*
Attys.

UNITED STATES PATENT OFFICE

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FLEXIBLE METAL TUBE

Friedrich Roemer, Ebenhausen, near Munich, Germany, assignor to Metallschlauch-Fabrik Pforzheim vorm. Hch. Witzemann Gesellschaft mit beschränkter Haftung, Pforzheim, Baden, Germany

Application June 9, 1937, Serial No. 147,321
In Germany May 9, 1934

2 Claims. (Cl. 138—51)

This invention relates to flexible metal tubing of spirally wound, profiled metal strip. Such tubing ordinarily incorporates a special packing thread.

5 An object of the present invention is to provide new and improved flexible metal tubing in which packing thread is eliminated. To this end, and in accordance with the invention, the entire width of the profiled metal strip is covered, either
10 on one side only or on both sides, with elastic material such as rubber.

Typical embodiments of the invention are illustrated on the accompanying drawing.

15 Fig. 1 represents a fragmentary, longitudinal section of a flexible metal tube in which the metal strip is covered on both sides.

Fig. 2 shows, in section, another form of construction, in which the metal strip is covered only on the inside.

20 Fig. 3 shows, in section, another form, in which the metal strip is covered only on the outside.

Fig. 4 shows, in section, still another form, in which the metal strip is covered on both sides and the covering extends about the peripheral
25 edges of the flanges of the strip.

In all the illustrated forms, reference 1 denotes the profiled metal strip and 2 an elastic protective or insulating layer or covering of rubber or the like.

30 In the example illustrated by Fig. 1 a protective or insulating layer 2 is arranged on each side of the metal strip 1, so that the joint between each pair of interlocking flanges of the two adjacent strip windings is sealed by an outer and an inner elastic layer and therefore by a
35 double layer.

In the form of the invention illustrated by Fig. 2 the elastic layer 2 is disposed only on the inner side of the metal strip 1 and therefore
40 only on the inner side of the flexible tube. The joint between each pair of interlocking flanges of the two adjacent strip windings is sealed by a single elastic layer.

45 Fig. 3 shows a form in which the elastic layer is located on the outer side of the metal strip 1 and therefore on the outer side of the flexible

tube. Here, also, the joint between each pair of interlocking flanges of the two adjacent strip windings is sealed by a single elastic layer.

In the construction shown by Fig. 4, the metal strip 1 is covered on both sides and the covering 2 extends about the peripheral edges of the flanges on the strip. To prevent the windings of the metal strip from disengaging and the tube from being thereby opened, care is taken that the metal flanges of the strip overlap to a sufficient extent as clearly illustrated in the figure.

It will be apparent that in every case a sealed joint between the windings of the metal strip is obtained, either by a double layer or single layer, without the necessity for any special intermediate layer in the form of a packing thread or the like.

As the covering consists of rubber or the like it prevents the transmission of electric current from the interior of the tubing to the outside, and when the fullest possible prevention of contact is desired the coating is preferably provided on the outside of the metal strip, or on both sides. The side or sides provided with the covering are protected against premature wear, oxidation or rusting and so on. Moreover, when the flexible metal tubing is employed in connection with domestic appliances, such as vacuum cleaners, the outside covering protects polished furniture being damaged when the tubing is being moved about or manipulated.

I claim:—

1. Flexible metal tubing of spirally wound metal strip having loosely interlocked flanges forming a joint between two adjacent windings, and a layer of elastic material extending over the whole width of at least one surface of said strip and forming a complete covering for the corresponding surface of the tube, the portion of said layer lying between said flanges forming a seal therefor.

2. Flexible metal tubing as claimed in claim 1 characterized in that layers of said elastic material extend over both surfaces of the metal strip and the edges thereof.

FRIEDRICH ROEMER.