

(No Model.)

M. M. NICHOLLS.
TUBING.

No. 568,870.

Patented Oct. 6, 1896.

Fig. 1.

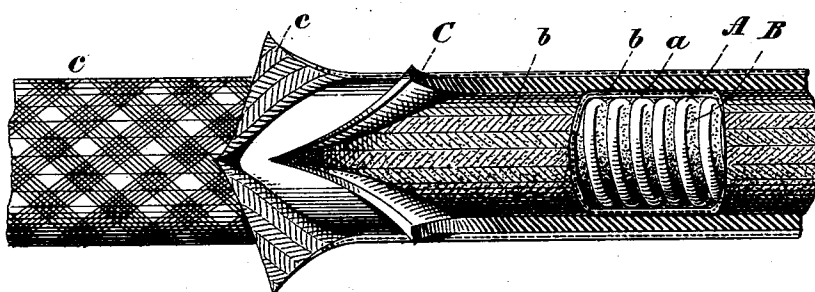


Fig. 2.

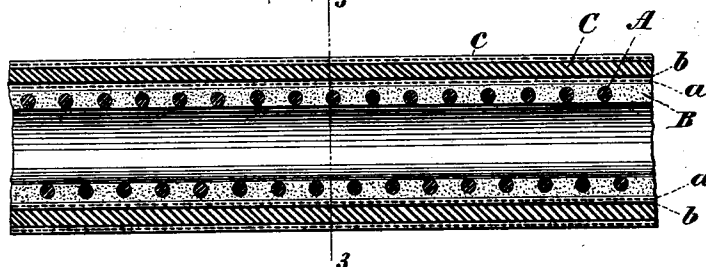
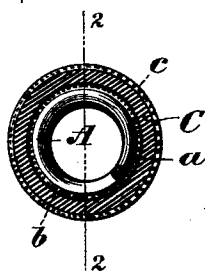


Fig. 3.



WITNESSES:

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TUBING.

SPECIFICATION forming part of Letters Patent No. 568,870, dated October 6, 1896.

Application filed April 28, 1896. Serial No. 589,375. (No model.)

To all whom it may concern:

Be it known that I, MARK M. NICHOLLS, a resident of the city, county, and State of New York, have invented certain new and useful
5 Improvements in Tubing, of which the following is a specification.

My invention relates to flexible tubing, and is particularly adapted for use as a means for conveying gas.

10 In tubing of this character heretofore made it has been customary to coat a coiled spring contained within the said tube with a layer or film of boiled linseed-oil and to interpose
15 a layer or film of the linseed-oil between the internal coiled spring and a layer of compound made up of glue and glycerin. The purpose of the layer or film of linseed-oil was to prevent gas from penetrating the walls of the tubing and to prevent the coiled spring
20 forming part of the tubing from rusting or corroding by contact with the moisture-laden gas passing through the tube. Great objection has been found in tubes of this character, because it was found that the linseed-oil
25 would dry and harden and in drying would draw the moisture from the layer of glue and glycerin, so that it would become hard, and an attempt to bend the tube would result in its being broken and rendered unfit for further use. These tubes dry and crack much
30 more rapidly when in stock than when in actual use, since the interior of the tubes are in open communication with the atmosphere when they are in stock, which of course is
35 not the case when the tubes are in use.

The object of my invention is to overcome the defects hereinbefore pointed out and to produce a flexible tubing which will not harden.

40 To this end my invention consists in a tubing constructed in the manner hereinafter described and claimed.

In the accompanying drawings, forming part hereof, Figure 1 is a fragmentary face
45 view of a portion of a tube embodying my invention. Fig. 2 is a longitudinal section on the line 3 3 of Fig. 3. Fig. 3 is a transverse section on the line 3 3 of Fig. 2.

The compound flexible tubing represented
50 in the drawings shows one form of my inven-

tion wherein an internal coiled spring A is coated with, or partly or wholly embedded in, a layer B of Venetian red and cotton-seed oil mixed in about equal proportions by weight, so as to form a composition of doughy-like
55 consistency. Surrounding this coiled spring is preferably arranged a textile body-sheath *a*, which may become saturated with and through which may pass a portion of the Venetian red and cotton-seed oil, so that it may
60 form a thin film *b* upon the outer face of the textile sheath *a*, as represented by the stippled surface in Fig. 1.

A layer C of suitable thickness, composed of glue and glycerin, incloses the textile
65 sheath *a* and the film *b*, thereon, and this layer of glue and glycerin may, if desired, be covered with an exterior textile covering *c*, or the compound may have a suitable pigment
70 incorporated therewith and itself form the outer covering.

In my improved tubing the layer of Venetian red and cotton-seed oil practically never becomes dry or hard and is impermeable to
75 either gas or moisture, so that it prevents the coiled spring A, coated with or embedded therein, from rusting or becoming corroded. At the same time there is nothing to draw the moisture from the layer of glue and glycerin; but on the other hand the film *b* of Venetian red and cotton-seed oil prevents the
80 textile sheath *a* and the layer of glue and glycerin from adhering together and retains the latter in a soft and pliable condition. Furthermore, by my invention I am enabled
85 to manufacture tubing and immediately place it on sale, thereby avoiding the delay of several days heretofore occasioned in drying the linseed-oil before the tubing could be placed
90 upon the market.

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

1. A tubing comprising in its structure a layer composed of Venetian red and cotton-
95 seed oil and a layer of glue and glycerin.

2. A tubing comprising in its structure an inner layer composed of Venetian red and cotton-seed oil, a layer of glue and glycerin
100 surrounding said first-named layer, and a tex-

tile body-sheath, substantially as and for the purposes specified.

3. A tubing comprising in its structure an inner layer composed of Venetian red and
5 cotton-seed oil, a coiled spring embedded therein, a textile body-sheath surrounding said layer of Venetian red and cotton-seed

oil, and a layer of glue and glycerin surrounding said textile body-sheath, substantially as and for the purposes specified.

MARK M. NICHOLLS.

Witnesses:

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