No. 626,348. Patented June 6, 1899.

J. J. SOMMER.

MANUFACTURE OF SILVER LINED GOLD TUBING.

(Application filed Feb. 11, 1899.)

(No Model.)

Fig. 1.

Fig. 2.

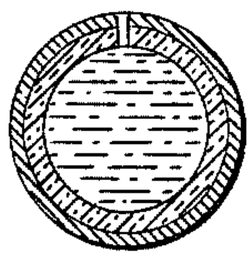
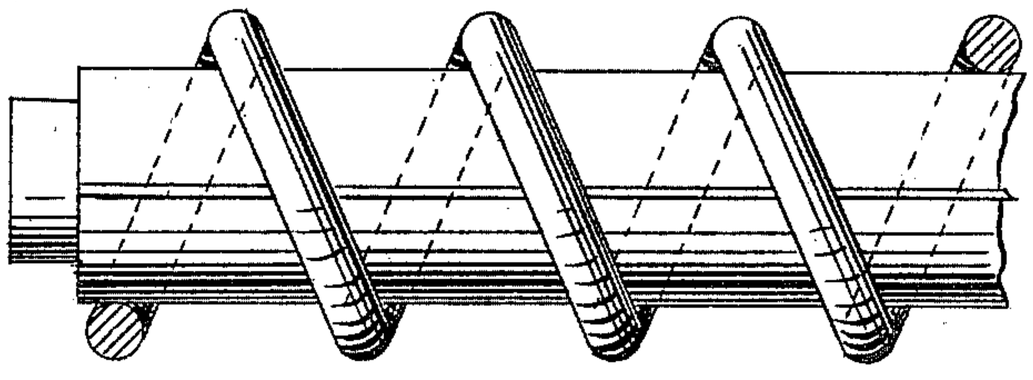


Fig. 3.



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MANUFACTURE OF SILVER-LINED GOLD TUBING.

SPECIFICATION forming part of Letters Patent No. 626,348, dated June 6, 1899.

Application filed February 11, 1899. Serial No. 705,353. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. SOMMER, a citizen of the United States, residing in New York, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in the Manufacture of Silver-Lined Gold Tubing, of which the following is a specification sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My improvements relate to the manufacture of silver-lined gold tubing from sheets of the two metals. This has heretofore been attempted in various ways, but without practical success, the results being unsatisfactory from a commercial point of view.

As a result of investigation and experiment I have been enabled to successfully accomplish the manufacture of silver-lined gold tubing adaptable to various requirements in the arts and presenting a uniform external surface of gold by treating and manipulating the combined metals substantially as hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a cross-section of the metal strip on an enlarged scale. Fig. 2 is a cross-section, upon an enlarged scale, of my improved tube. Fig. 3 is an elevation of a section of tubing, illustrating the application of the binding-wire.

In carrying out my improved manufacture of silver-lined gold tubing I take a suitable strip of the combined metals rolled or united in the usual way and bend it longitudinally into a cylindrical or other desired form, the gold showing externally and the silver forming the internal lining of the tube. I now fill the tube thus partially formed with a semi-fluid flux of borax, confining the same in the tube. I next insert between the opposed edges of the sheet of metal a comparatively thin strip or ribbon of gold solder of less carat than the gold forming the surface of the tube, pressing the solder into place between the opposed edges.

The gold solder to be used is a composition that will insure its melting at a lower degree of temperature than that sufficient to melt the silver composing the lining of the tube and at a less degree of temperature than that sufficient to melt the grade of carat of gold used for the external portion of the tube. Ordinarily a comparatively high grade of gold carat is desirable for the external surface of the tube.

The strip of solder having been inserted so that it is flush externally with the outer surface of the tube, I now insert the tube in convolutions of iron wire of an internal diameter exactly the same as the external diameter of the tube. The convolutions of this binding-wire are of a number and pitch proportionate to the size and diameter of the tubing to be formed. For instance, if the tubing is, say, one-eighth of an inch in diameter, the convolutions may be approximately three-sixteenths of an inch apart, and so on for various shapes and sizes of tubing. The tubing thus prepared is then subjected to a comparatively gentle uniform heat by any of the several well-known methods resorted to in the art, the encircling wire binder not only supporting the tube and confining the strip of solder externally, but also distributing and diffusing the heat, so that the latter is practically applied in like degree of temperature throughout the whole length of the tube, while the internal semifluid flux insures the flow of solder. By this means I am, as before intimated, enabled to accomplish the uniting of the opposed edges of the tubing by aid of a comparatively low degree of heat and without any danger of the solder or the internal lining of silver overflowing or protruding through the edges. The result is, apparently and practically, a seamless tube of sufficient durability and strength to meet all the requirements of use in the manufacture of jewelry, &c. I have found it especially effective and desirable in the manufacture of chain bracelets and similar articles which are made hollow, although I do not confine myself to the application or use of my improved tubing to the manufacture of jewelry, since it is obviously applicable to various arts.

I have herein shown the tubing of cylindrical form, although it is obvious that any shape or form in cross-section may be made in like manner.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. As an article of manufacture a silver-

lined gold tube formed by bending a strip of the combined metals into the desired form, introducing a liquid or semiliquid flux into the tubing thus formed, inserting a gold solder between the opposed edges of the tube, inserting the tube in closely-fitting convolutions of iron and subjecting the whole to a heat sufficient to melt the gold solder, but insufficient to melt either the gold or silver of which the rest of the tube is composed, substantially in the manner and for the purpose described.

2. The method herein set forth of manufacturing silver-lined gold tubing consisting in bending a strip of the combined metal into suitable form, introducing into the tube thus formed a liquid or semiliquid flux, inserting between the opposed edges of the metal a gold solder which melts at a lower degree of temperature than the metal composing the rest of the tube, encircling the tubing in close-fitting convolutions of iron, and subjecting the whole to a temperature sufficient to melt the strip of solder but insufficient to melt the silver and gold forming the rest of the tube, substantially as herein set forth.

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