

(No Model.)

E. NELSON.

METHOD OF MAKING SEAMLESS PLATED WIRE.

No. 542,422.

Patented July 9, 1895.

Fig. 1.

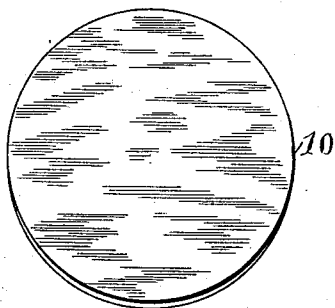


Fig. 2.

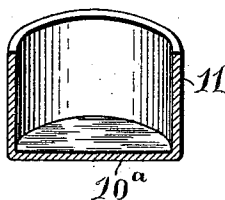


Fig. 3.

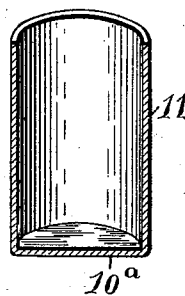


Fig. 4.

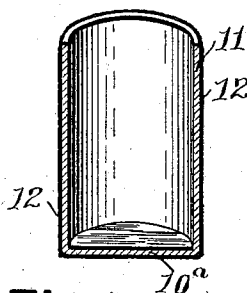


Fig. 5.

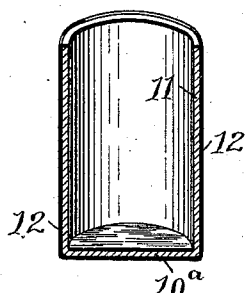


Fig. 6.

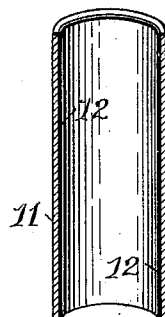


Fig. 7.

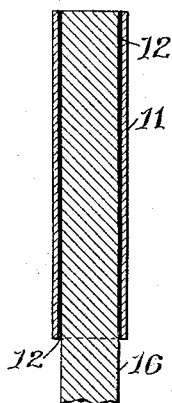
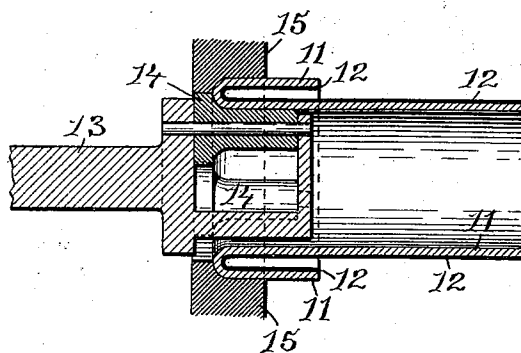


Fig. 8.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD NELSON, OF PROVIDENCE, RHODE ISLAND.

METHOD OF MAKING SEAMLESS PLATED WIRE.

SPECIFICATION forming part of Letters Patent No. 542,422, dated July 9, 1895.

Application filed April 3, 1895. Serial No. 544,279. (No specimens.)

To all whom it may concern:

Be it known that I, EDWARD NELSON, of the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in the Method of Making Seamless Plated Wire, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in the manufacture of seamless, solid, or tubular wire, in which the outer surface is made of a seamless tube of precious metal adapted for use in jewelry.

The invention consists in the peculiar and novel method, more fully set forth hereinafter, by which a tube is drawn from a disk of stock-plate, covered with a softer metal or composition of metals, and is then reversed so that the softer metal is on the inside of the tube and is secured to a solid or tubular core from which the seamless wire is drawn out, as will be more fully set forth hereinafter.

Figure 1 is a perspective view of a disk of sheet metal. Fig. 2 is a sectional view of a cup. Fig. 3 represents in sectional view an elongated cup; Fig. 4, a cup covered on the exterior surface with solder; Fig. 5, the same cup with the solder smoothed down, and Fig. 6 the reversed tube. Fig. 7 is a sectional view of the tube drawn over a core or a mandrel, and Fig. 8 a roller-head by which the tube may be spun over so as to reverse the same.

Similar numbers of reference designate corresponding parts throughout.

In manufacturing seamless wire by my improved process the disk 10 is cut from a sheet of precious metal, or, as is most usually the case, from a sheet of stock-plate—that is, a sheet of inferior metal plated with a sheet of precious metal. The disk 10 is now placed into a press having a male and female die. The male die forces the disk through the cylindrical hole of the female die and thus produces the cup shown in Fig. 2, in which the closed end 10^a is the central portion of the disk 10, and the walls 11 are formed from the outer annular portion of the disk 10. When stock-plate is used the sheet of precious metal forms now the interior surface of the cup. The cup is now subjected to the action of a similar

die-press and is elongated, as shown in Fig. 3, the walls 11 of which are drawn out. This cup is now thoroughly cleaned on the outside by acid. It is then covered with flux and is placed into a bath of fluid solder, or metal fusible at a much lower temperature than the metal of the cup.

The solder 12 may be placed on the outside of the cup, as shown in Fig. 4, in a bath, or in any other manner, pains being taken that the whole exterior surface is covered with the solder. The solder-covered cup is now drawn through a suitable die to even up the outer layer of solder, as is shown in Fig. 5. In the cup so prepared the precious metal forms the inner surface and the solder the outer surface of the cup. These relative positions I now reverse and this reversal may be done in various ways, to wit: The cup may be placed inverted over a cylindrical perforated die with the closed end 10^a resting on the die and a male die used to draw the whole through the hole in the die. A mandrel may be used to force the metal of the cup through the perforation of the die, or the core to which the shell is to be secured may be forced with the metal of the cup through the die, or the spinning-head shown in Fig. 8 may be used to turn over the tube so as to place the solder-covered surface into the inside of the shell. The spinning-head consists in the mandrel 13, adapted to be secured in the revolving head of a lathe and provided usually with three rollers 14 revolving within the stationary head 15. By this device the metal forming the wall of the tube is turned outward and made to follow the walls of the head 15. The turned-over tube, when this device is used, is larger in diameter than the original tube, while the tube turned over in a die-press is smaller than the original tube.

The tube, either after it has been turned over or while it is being turned over in the die-press, is drawn over the core, which has been thoroughly cleaned by acid and covered with flux or the mandrel 16. If on the core, the tube and core are drawn down together in the usual manner into wire, and when drawn on a mandrel the tube is drawn out lengthwise until it has the desired length, when it may be used and drawn down to any size of hollow wire required.

The disk 10 may be made of any metal or composition of metals desired which, when drawn into the cup form, may be covered on the outside with solder and when turned over
5 may be drawn out into seamless tubular wire.

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

10 The method herein described for making seamless plated - wire, the same consisting in forming a disk or plated sheet-metal into a cup, the plated surface being on the inside, elongating the cup into a tube closed at one end, cleaning the outside of the tube with acid,

covering the same with flux, covering the 15 outer surface with liquid solder, drawing the solder-covered tube through a die to even the solder, turning the tube so as to bring the solder-covered surface on the inside, drawing the tube over the cleaned and flux-covered 20 core and the so-formed ingot into wire, as described.

In witness whereof I have hereunto set my hand.

EDWARD NELSON.

Witnesses:

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M. F. BLIGH.