(No Model.)

I. F. PECK.

METHOD OF MAKING SEAMLESS PLATED WIRE.

No. 449,428. Patented Mar. 31, 1891.

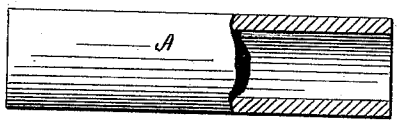


Fig. 1.

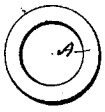


Fig. 2.

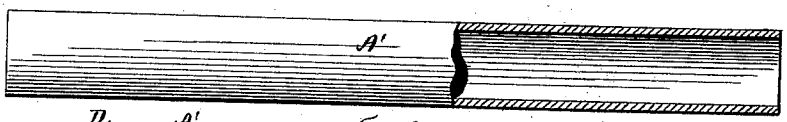


Fig. 6.



Fig. 3.

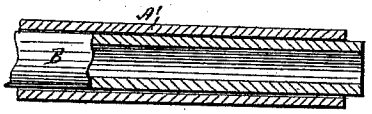


Fig. 5

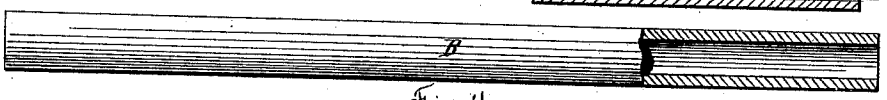


Fig. 4.

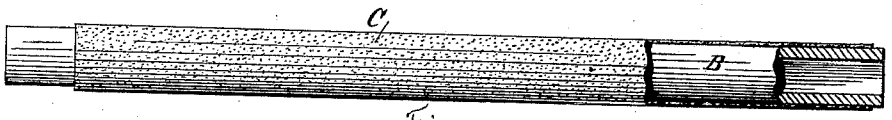


Fig. 7.

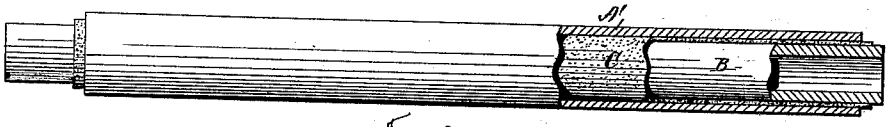


Fig. 8.

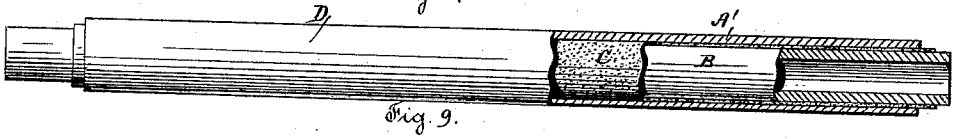


Fig. 9.



Fig. 10.



Fig. 11.

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UNITED STATES PATENT OFFICE.

IRA F. PECK, OF PROVIDENCE, RHODE ISLAND.

METHOD OF MAKING SEAMLESS PLATED WIRE.

SPECIFICATION forming part of Letters Patent No. 449,428, dated March 31, 1891.

Application filed November 20, 1890. Serial No. 372,082. (No model.)

To all whom it may concern:

Be it known that I, IRA F. PECK, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in the Method of Manufacturing Seamless Plated Wire, of which the following is a specification.

Heretofore in the manufacture of seamless plated wire it has been customary to employ a plating of sheet metal drawn up in a die to tubular form and applied to the exterior of the base-metal core by the process of sweating or by solder; but I have determined by experiment that the plating can be more economically made from a cast-metal tube, which can be united to the base-metal core by either of the above-mentioned processes; and my invention consists in first casting a hollow shell of the exterior plating metal, then drawing the plating-metal tube so formed to an extended length upon a mandrel, then removing the same from the mandrel and inserting a base-metal core into the cavity of the plating-tube with either a fluxing material or solder, then drawing the plating-tube to a smaller diameter upon the core to bring the surfaces in close contact with each other and to expel the air, then heating the ingot-bar so formed to secure the proper attachment of the plating-tube to the base-metal core, and then drawing the cooled bar to an extended length to form a plated seamless wire of the proper size.

Figure 1 is a side view and partial section of the original cast ingot. Fig. 2 represents an end view of the same. Fig. 3 represents a side view and partial section of the plating-tube when extended in length by drawing when upon a mandrel. Fig. 4 represents a side view and partial section of a hollow base-metal core adapted for making plated hollow wire. Fig. 5 represents a longitudinal section showing the base-metal core inserted into the cast plating-tube. Fig. 6 represents a longitudinal section showing the plating-tube when drawn in a die to close the same upon the core preparatory to sweating the parts together. Fig. 7 represents a side view and partial section showing the hollow base-metal core provided with a covering-sheet of solder. Fig. 8 represents a side view and partial section showing the base-metal core with its covering of solder inserted into the cavity of the plating-tube preparatory to drawing the said tube to a smaller diameter to bring the surfaces in close contact preparatory to heating. Fig. 9 represents a side view and partial section showing the combined plating-tube, solder, and core when slightly drawn to form an extended hollow bar. Fig. 10 represents a side view and partial section showing the bar when drawn to a smaller diameter to form a hollow wire. Fig. 11 represents a side view of a still smaller wire made by the continued reducing of the wire shown in Fig. 8.

In the accompanying drawings, A, Figs. 1 and 2, represents a hollow cast ingot of the plating metal, and A′, Fig. 3, represents the hollow ingot A after the same has been placed upon a mandrel and extended in length by being drawn through a draw-plate or by swaging, thus smoothing the exterior and interior surfaces, and B in Fig. 4 represents a tube of base metal, which is to form the core of the wire when the said wire is to be made hollow; but in case it is desired to manufacture solid plated wire, then the core B is to be formed of a solid bar.

The base-metal tube or bar B, which is to form the core, may be coated with a suitable fluxing material, and the cavity of the plating-tube be also coated therewith, and the base-metal core then inserted into the plating-tube, as shown in Fig. 5. The combined plating-tube and core is then to be passed through a draw-plate, thus compressing the plating-tube upon the core, so as to cause an intimate contact between the surfaces for expelling the air between the plating and the core, which, if not expelled, might tend to prevent a perfect union of the metal. The drawn ingot-bar D is then to be subjected to the action of heat, which will serve to sweat the contact-surfaces of the base-metal core and the plating-tube together, so that a perfect union will be formed throughout the length of the ingot-bar. The bar so formed is then to be drawn into wire, as usual; but instead of sweating the surfaces of the core and plating-tube to each other the core can be covered with a thin sheet of solder C, as shown in Fig. 7, and then inserted into the cavity of the plating-tube A′, as shown in Fig. 8. The combined plating-tube and solder-

enveloped core is then to be passed through a draw-plate, thus compressing the plating-tube upon the core and expelling the air (see Fig. 9) preparatory to heating the ingot-bar to join the contact-surfaces to each other by the fusing of the solder, and after the ingot-bar having its contact-surfaces so joined to each other has cooled the bar can be drawn down in size to form the seamless plated wire required.

I claim as my invention—

1. The method of preparing an ingot-bar for the manufacture of seamless plated wire, which consists in casting a hollow shell of the plating metal, then drawing the plating-metal tube so formed to an extended length upon a mandrel, then removing the same from the mandrel and inserting the base-metal core into the cavity of the plating-tube with either fluxing material or solder, then drawing the plating-tube to a smaller diameter upon the core, and then heating the ingot-bar so formed to cause the union of the metal surfaces, as set forth.

2. The method of manufacturing seamless plated wire, which consists in casting a hollow shell of the plating metal, then drawing the plating-metal tube so formed to an extended length upon a mandrel, then removing the same from the mandrel and inserting the base-metal core into the cavity of the plating-tube with either fluxing material or solder, then drawing the plating-tube to a smaller diameter upon the core, then heating the ingot-bar so formed to cause the union of the metal surfaces, and then further drawing the cooled bar to form a seamless plated wire of the required size, as set forth.

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