No. 720,579. PATENTED FEB. 17, 1903.

E. T. GREENFIELD.

ART OF CONSTRUCTING SCREW THREADED PIPES, TUBES, OR RODS.

APPLICATION FILED APR. 14, 1902.

NO MODEL.

Fig. 1.

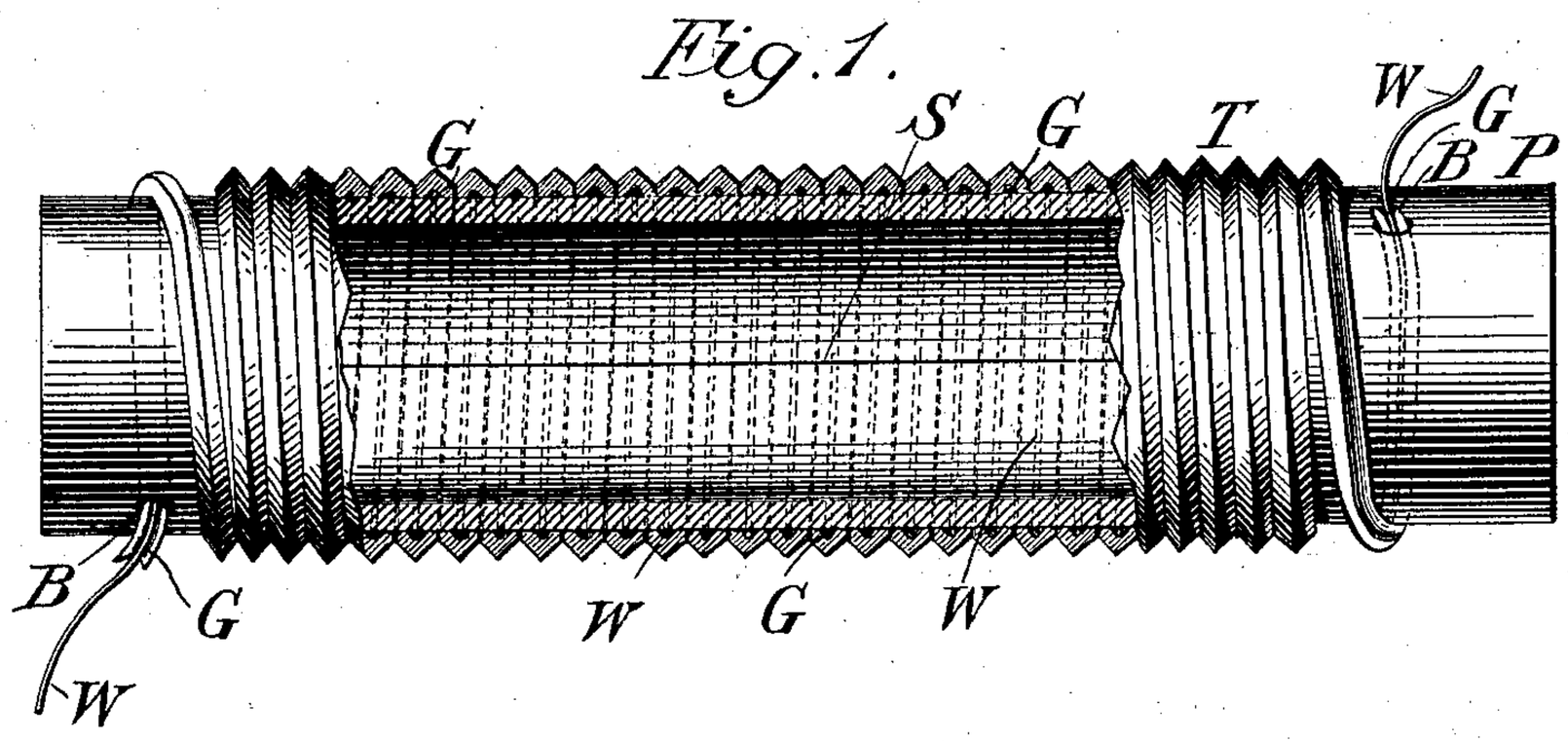


Fig. 2.

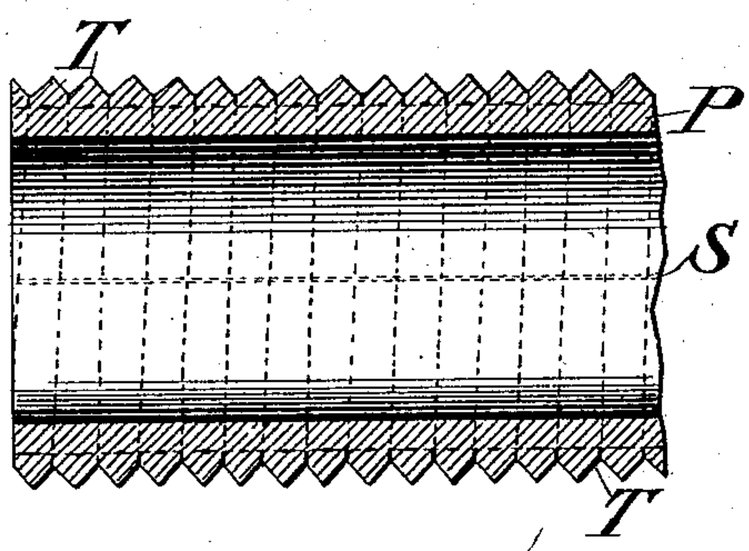
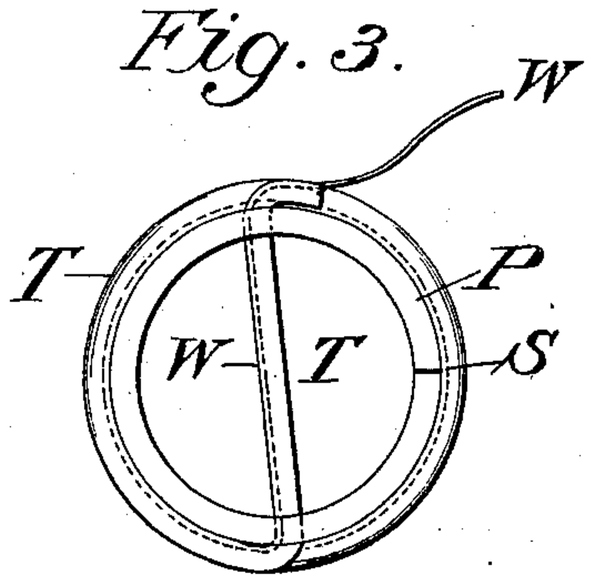


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWIN T. GREENFIELD, OF MONTICELLO, NEW YORK.

ART OF CONSTRUCTING SCREW-THREADED PIPES, TUBES, OR RODS.

SPECIFICATION forming part of Letters Patent No. 720,579, dated February 17, 1903.

Application filed April 14, 1902. Serial No. 102,849. (No model.)

To all whom it may concern:

Be it known that I, EDWIN T. GREENFIELD, a citizen of the United States, residing at Monticello, in the county of Sullivan and State of New York, have made a new and useful Invention in the Art of Constructing Screw-Threaded Pipes, Tubes, or Rods, of which the following is a specification.

My invention has for its object to effect the construction of a screw-threaded pipe, tube, or rod by uniting a thread integrally to the outer surface of a plain metal pipe, tube, or rod by brazing and in such manner that the fiber or grain of the thread lies or is located in the direction of the length thereof.

For a full and clear understanding of the invention, such as will enable those skilled in the art to practice the methods hereinafter claimed, reference is had to the accompanying drawings and to the following specification, the especial points of novelty being particularly pointed out in the claims at the end thereof.

Figure 1 is a side elevational view of a short section of pipe or tube, illustrating the practice of my novel method of brazing a thread upon the exterior surface thereof, the central portion being broken away and shown in section for the purpose of more fully illustrating the invention. Fig. 2 is a short sectional view of a completed screw-threaded tube having the screw-threads secured thereto by my novel process. Fig. 3 is an end view as seen looking at Fig. 1 from right to left.

Referring now to the drawings in detail, in all of which like letters of reference represent like parts wherever used, P represents an iron or Bessemer-steel skelp or tube drawn in the usual way, with a seam or slit S at one side, and placed, before being subjected to my process, in a pickling-bath, preferably of dilute sulfuric acid, for removing all extraneous matter.

T represents a metal thread which is made, preferably, of wire and of the conformation shown by drawing it through a die in such manner as to give to its outer surface the angular or screw-threaded inclinations, as shown, at the same time forming within the inner face a groove G of sufficient depth to receive a brazing-wire W, said wire being placed within the groove. The ends of the two are then passed through two openings B at opposite sides of the skelp P, (see Figs. 1 and 3,) and the two are then wound around the outer surface thereof, with the lateral edges of the thread T resting snugly against each other, being careful to put sufficient tension upon the two, so as to cause them to effectually bind or inclose the wire W within the groove G and between the thread T and the outer surface of the skelp P, finally securing the completed end of the thread T and wire W in a second pair of openings B at the opposite end of the completed tube. The thread T and its inclosed wire W are thus tightly wound upon the skelp P at any desired pitch and to any desired length. As the two wires are being thus wound upon the outer surface of the tube or skelp P they are passed through or subjected to a liquid flux, such as borax in solution, so that this flux in sufficient quantity adheres to them and the skelp for effecting the proper union of the combined metals when heated. The completed article is then placed in a furnace, where it is heated to a white heat or to such a temperature as will cause the brazing-wire W to fuse and thoroughly unite the inner faces of the screw-thread T to the pipe or skelp P and the lateral faces of said screw-threads to each other when allowed to cool, there being sufficient brazing material, as I have found in practice, to also effectually braze together the edges of the pipe or skelp P at the seam or slit S. The completed pipe or tube is illustrated in Fig. 2. These screw-threaded pipes or tubes may be made in any preferred length and after they are completed in the manner disclosed may be used in such lengths or may be cut up into short or sectional lengths and used by the trade. Such pipes or tubes have an especial utility in connection with interior or house conduits for electric wires, where it is found necessary often to vary the length of the tubes in accordance with the demands of the building where they are to be used.

I am aware that it is not broadly new with me to braze two metal surfaces together by confining the brazing material and the flux in a pocket in one of the pieces of metal or to braze the meeting edges of a sheet-metal tube by confining the brazing material and

the flux in a tube which holds them closely adjacent to the slitted edge of the tube. My claims are directed, broadly, to a method or process of constructing a screw-threaded metal pipe, tube, or rod in which the threads are secured to the surface thereof by brazing material which is confined in a groove in the strip and between said strip and the surface of the pipe, tube, or rod to which it is to be secured, the same having been subjected to a flux and then heated until the brazing material firmly unites the threads of the pipe, tube, or rod.

I make no claim hereinafter to a screw-threaded pipe or tube as an article of manufacture in which the screw-threads are secured integrally to the exterior surface thereof and to each other by the process of brazing, as this feature constitutes the subject-matter of a separate application filed by me in the United States Patent Office of even date herewith and bearing Serial No. 102,850.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The described method or process of making a screw-threaded pipe, tube, or rod, consisting in winding a metal thread around the pipe, tube, or rod with the lateral edges thereof resting snugly against each other and simultaneously confining a mass of brazing metal and a flux between the two; then heating the entire mass until the brazing metal fuses and finally allowing the mass to cool.

2. The described method or process of making a screw-threaded pipe, tube, or rod, consisting in winding a grooved wire which is to constitute the thread and a wire or strip of brazing metal with a flux located in the groove around a pipe, tube, or rod, and securely uniting the ends of the combined wires to the pipe, tube, or rod and then heating the entire mass until the brazing metal fuses and finally allowing the same to cool.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN T. GREENFIELD.

Witnesses:
C. J. KINTNER,
M. F. KEATING.