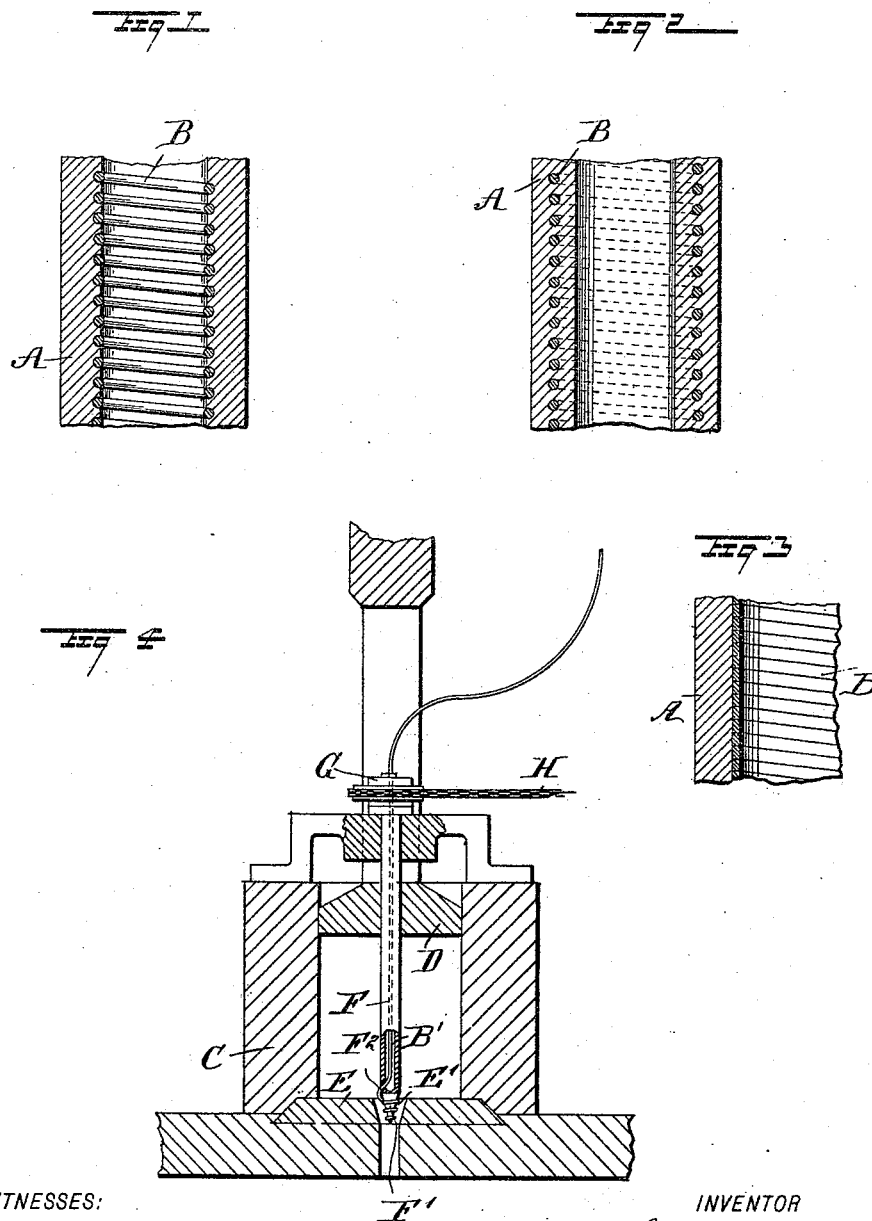


(No Model.)

G. W. FOX.
MANUFACTURE OF PIPES.

No. 525,197.

Patented Aug. 28, 1894.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE WAKEFIELD FOX, OF MANCHESTER, ENGLAND.

MANUFACTURE OF PIPES.

SPECIFICATION forming part of Letters Patent No. 525,197, dated August 28, 1894.

Application filed September 21, 1893. Serial No. 486,092. (No specimens.) Patented in England June 16, 1893, No. 11,868.

To all whom it may concern:

Be it known that I, GEORGE WAKEFIELD FOX, a subject of the Queen of Great Britain, residing in Rusholme, Manchester, England, have invented certain new and useful Improvements in the Manufacture of Pipes, of which the following is a full, clear, and exact description, and for which I have obtained Letters Patent in Great Britain, No. 11,868, dated June 16, 1893.

The object of the invention is to provide certain new and useful improvements in the manufacture of lead or other pipes, whereby a pipe is produced capable of withstanding a heavy pressure of the fluids passing through the pipe. For this purpose I employ a method consisting in passing the molten metal through a die and around the end of a core or mandrel and simultaneously feeding a wire into the metal at the die.

The invention also consists of a machine for carrying the above method into effect, all as hereinafter more fully described and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the pipe showing the coil embedded at the inner surface of the pipe. Fig. 2 is a similar view of the same, showing the coil embedded in the wall of the pipe. Fig. 3 is a like view of the improvement showing the coil as forming an interior lining for the pipe; and Fig. 4 is a sectional side elevation of the machine for forming the pipe.

As illustrated in Fig. 1, the pipe A, made of lead or other suitable material, is provided with a coil of round, flat or other wire B, embedded at the inner surface of the said pipe so as to slightly project into the opening or hollow of the pipe, as shown. As illustrated in Fig. 2, the coil of wire B is completely embedded in the wall of the pipe A, so that the wire does not project either on the outer face nor on the inner surface, and in Fig. 3, the wire is shown to form a complete inner lining for the pipe A. It will be understood that in each case the convolutions of the wire coil are

firmly united with the metal, and that the coil is located interiorly of the metal, that is, the wire does not project from the outer surface of the pipe, and the said outer surface is smooth. In order to form this pipe, I employ a machine of the construction shown in Fig. 4, in which the cylinder C is adapted to receive the material for forming the pipe in a semi-fluid or plastic condition. In this cylinder C reciprocates a plunger D for pressing the material into the conical aperture E' of the die E forming the bottom for the cylinder C. Into this conical aperture E' projects the core F' of the mandrel F, arranged centrally in the cylinder C and passing through the plunger D, as plainly illustrated in Fig. 3. The outer end of this mandrel F carries a sprocket wheel G, over which passes a sprocket chain H, connected with suitable machinery for imparting a rotary motion to the said sprocket wheel G and the mandrel F. Gearing or other means may be employed to rotate the mandrel F. The latter is made hollow with the exception of the core F', and the lower end is provided with an aperture F² through which passes the wire B' fed in and through the hollow mandrel F to form the coil of wire B around the core F' in the aperture E' at the time the pipe is formed by the plunger pressing the material in and through the aperture E' of the die E. The aperture F² is located in close proximity to the aperture E' and, by varying the location of this aperture relative to the aperture E', the wire will be fed either on the inner surface of the pipe A or in the sides thereof, as illustrated in Figs. 1 and 2. It will be seen that a pipe formed in this manner is very strong and durable and capable of resisting heavy pressure.

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

1. The herein-described method of manufacturing pipes, which consists in forming the metal into a tubular shape and simultaneously feeding a wire into the metal, and coiling the wire while it is being fed, substantially as described.

2. In a machine for manufacturing pipes, the combination, with the means for forming

the pipe body, of a revolving mandrel provided with means for feeding the wire into the metal and simultaneously coiling the said wire, substantially as described.

- 5 3. A machine for manufacturing lead and other pipes, comprising a cylinder having a reciprocating plunger, an apertured die through which the material is forced by the plunger, a core extending into the aperture

of the die, and a hollow revolving mandrel carrying the said core and adapted to feed a wire into the metal at the die, substantially as shown and described.

GEORGE WAKEFIELD FOX.

Witnesses:

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A. R. THOMPSON.