(No Model.)

J. THORNTON.

APPARATUS FOR HARDENING AND TEMPERING WIRE.

No. 323,087. Patented July 28, 1885.

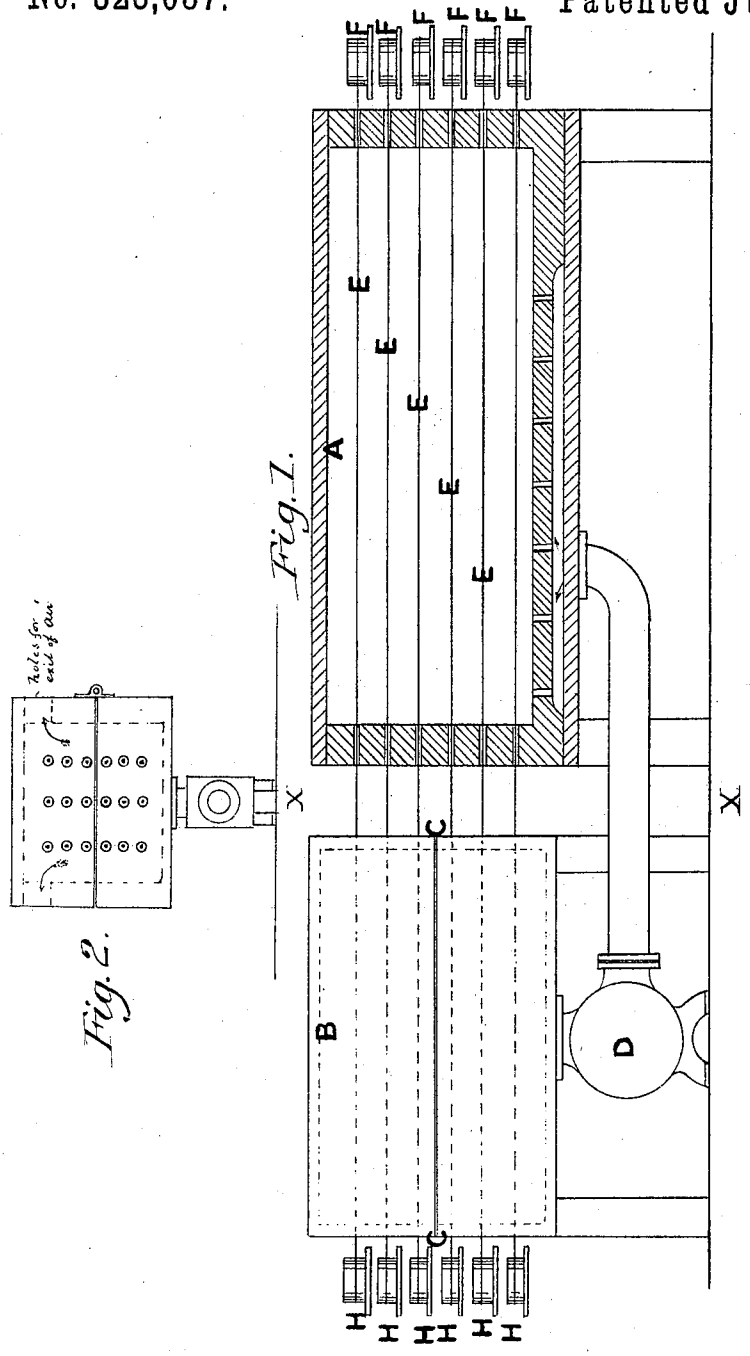


Fig. 1.

Fig. 2.

Witness.
John L. Walsh Patent Agent
Halifax. England.
Abraham Reed.
Halifax. England

Inventor
John Thornton

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN THORNTON, OF CLECKHEATON, COUNTY OF YORK, ENGLAND.

APPARATUS FOR HARDENING AND TEMPERING WIRE.

SPECIFICATION forming part of Letters Patent No. 323,087, dated July 28, 1885.

Application filed August 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN THORNTON, a subject of the Queen of Great Britain, and a resident of Cleckheaton, in the county of York, England, have invented a new and useful Improvement in Apparatus for Hardening and Tempering Steel Wire for Cards and other Purposes, of which the following is a specification.

The object of my invention is to produce a cheap, simple, and easily-operated mechanical device for hardening and tempering steel wire (without coating the same) with refuse from oil, lead, or other tempering ingredients. I attain this object by the arrangement shown and described.

Figure 1 is a side elevation of my invention. Fig. 2 is a sectional view on line *x x*, Fig. 1.

A is the furnace or oven for heating the wire E, which passes from winches F to winches H. In this furnace any substance—such as coal, coke, oil, gas, or other fuel—may be burned to produce the required heat. The wire passes through the heated furnace or oven to a box or vessel, B, hinged at C. In this box or vessel it is submitted to a blast of air, cold or partially cold, or refrigerated; but cold air, I find, does sufficiently well. This air is produced by a fan, such as D, which is also connected to the furnace for producing the required heat. The hardness or temper of the steel is regulated by regulating the strength of the blast by the ordinary valve of the fan.

Having thus described my invention, I desire to claim—

In an apparatus for hardening and tempering steel, the furnace A, in combination with the vessel B and fan D, constructed as described, and for the purpose set forth.

JOHN THORNTON.

Witnesses:

JOHN E. WALSH,
Patent Agent, Halifax.

ABRAHAM REED,
Clerk, Halifax.