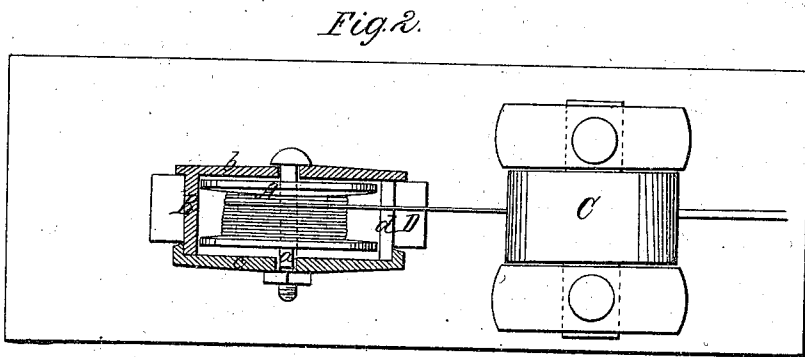
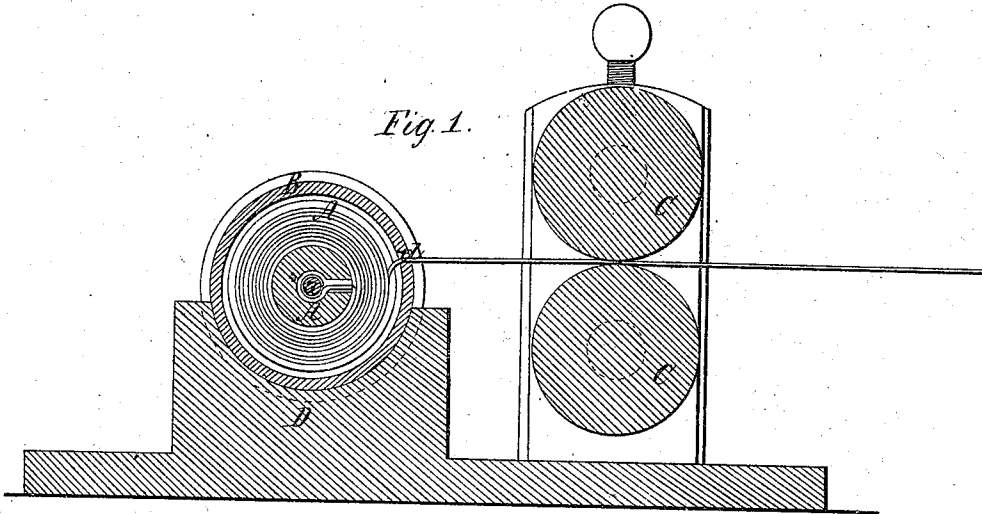


J. WRIGHT.

REDUCING AND ROLLING STEEL AND IRON WIRE, &c.

No. 30,782.

Patented Nov. 27, 1860.



Witnesses;
J. W. Combs
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Attorneys

UNITED STATES PATENT OFFICE.

JOHN WRIGHT, OF SHEFFIELD, ENGLAND.

ROLLING STEEL AND IRON WIRE.

Specification of Letters Patent No. 30,782, dated November 27, 1860.

To all whom it may concern:

Be it known that I, JOHN WRIGHT, of New George street, Sheffield, in the county of York, England, spring manufacturer, have invented Improvements in Reducing and Rolling Steel and Iron Wire and other Forms of those Metals in Long Lengths; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the sheet of drawings hereunto annexed and to the letters and figures marked thereon.

My invention of improvement in reducing and rolling steel and iron wire consists in winding the wire to be reduced on an iron bobbin or reel which is then placed in a box of the same metal and the whole placed in a furnace and heated to the required degree; after heating, the box and wire together are placed in close proximity to the rolls by which the wire is to be reduced. The end of the wire is conducted from the reel to the rolls and being entered between them their motion draws in the heated wire and the whole length is passed through and rolled flat as for watch springs or crinoline steel. Instead of flattening the wire it may be rolled of other desired forms. By this means I am enabled to reduce long lengths of wire with great facility as the whole length keeps hot very long after it is removed from the furnace. I form the box with a spout or channel at which the wire is drawn out. This spout is placed in line with the direction of the passage of the wire to the rolls and is so formed as to offer no obstruction to its passage, while at same time by enveloping the wire at its exit, keeps it hot till it reaches the rolls. The bobbin or reel is mounted on a spindle within the box so as to rotate easily in order to give off the wire as it is drawn by the rolls without subjecting the wire to undue strain and otherwise to afford the necessary freedom for unwinding the heated wire. This apparatus is also applicable for rolling iron and steel in broad strips or sheets it being made of suitable proportions for the purpose.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

Figure 1, in the drawing exhibits a vertical section of a box containing a bobbin or reel of wire properly arranged with regard

to a pair of rolls by which the wire is to be reduced. Fig. 2, exhibits a plan view of the same with the box in section.

Similar letters of reference indicate corresponding parts in both figures.

A, is the bobbin or reel of cast iron of a size according to the greatest length and size of wire to be heated thereon. This bobbin is fitted to turn on an axle *a*, which passes through the heads *b*, *c*, of the box B, of which *c*, is movable for the introduction of the bobbin. The box B, is of cast-iron of cylindrical form and should be of considerable thickness in order that it may retain the heat a considerable length of time. The said box is provided with a suitable throat *d*, for the exit of the wire, and from this throat there may extend a spout directed toward the rolls C, C, for the purpose of protecting the wire from the chilling influence of the atmosphere on its way from the bobbin and box to the rolls. The movable head C, of the box may be secured in place by a nut fixed to a screw on the axle *a*, or by other means.

The rolls C, C, are of the kind commonly used for rolling and flattening wire. Near the rolls there is arranged a suitable stand D, on which to place the box B, when heated with the wire inclosed for the purpose of being drawn off and reduced by the rolls in the operation of rolling. The box and bobbin may contain round wire to be reduced to a flat state or metal other than of a round form to be flattened or reduced. In operating with this bobbin and box, I first remove the head *c*, and take the bobbin from the box and wind the wire or length of metal on the bobbin in coils in as close proximity as possible to each other, like thread on a spool, either by hand or by a special machine for the purpose leaving the end of the wire protruding from the throat *d*. I next place the bobbin in the box insert the axle through it and put on and secure the movable head and then place the box with the bobbin and wire inclosed in a furnace, and when the whole has been heated to the required degree, I remove the box from the furnace and place it on the stand D. I then lead the end of the wire from the throat *d*, to the rolls which, when set in motion, draw it through and reduce it uniformly as required the heat of the wire being retained as nearly as practicable in a uniform degree during the time of rolling or reducing the whole length.

The box and reel may be variously constructed and arranged. A very convenient construction and arrangement consists in placing the box and bobbin vertical with the
5 movable head upward and making the bobbin with journals on its ends the lower journal to fit a bearing in the bottom of the box and the upper one to fit a bearing in the
movable head or cover thereof.

10 What I claim as my invention and desire to secure by Letters Patent, is—

The employment substantially as herein described in the heating and rolling of wire or other long lengths of steel and iron of a box or chamber B, and a bobbin or reel A, 15 combined substantially as herein set forth.

In testimony whereof I have subscribed my name.

JOHN WRIGHT.

Witnesses:

ALBERT DAY,
ARTHUR W. BLACKBURN.