C. H. MORGAN.

Wire-Annealing Apparatus.

No. 213,522. Patented Mar. 25, 1879.

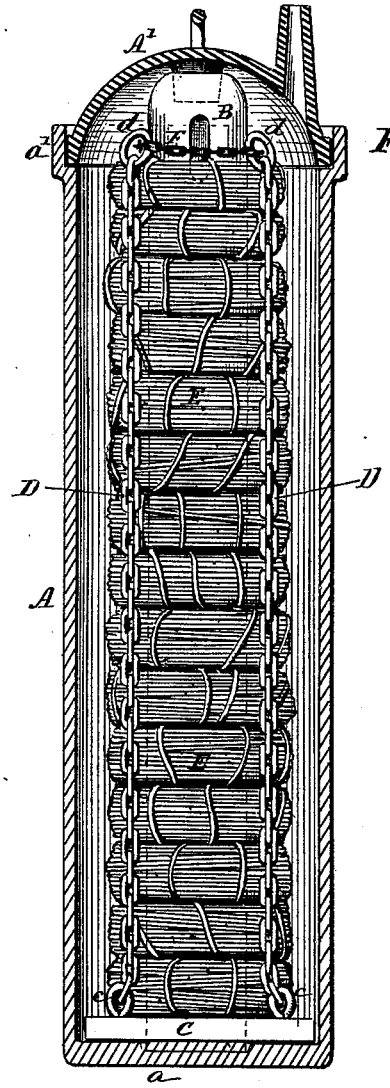

Fig. 1

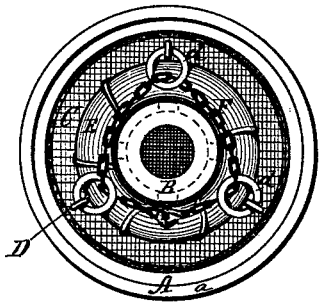

Fig. 2

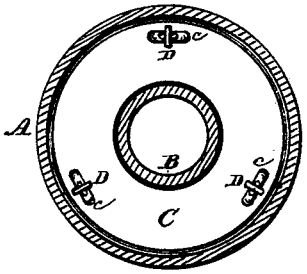

Fig. 3

Witnesses

D. Harrington

S. R. Barton

Inventor

Chas. H. Morgan

By Chas. H. Burleigh

Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES H. MORGAN, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN WIRE-ANNEALING APPARATUS.

Specification forming part of Letters Patent No. **213,522**, dated March 25, 1879; application filed October 9, 1878.

To all whom it may concern:

Be it known that I, CHARLES H. MORGAN, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Annealing Wire; and I declare the following to be a description of my said invention, sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 represents a vertical section of an annealing-pot, showing the coils of wire in position for annealing, and illustrating the nature of my invention. Fig. 2 represents a plan view of the same with the cover removed; and Fig. 3 represents a horizontal section near the lower end.

Annealing-pots, as ordinarily used for annealing wire, consist simply of a plain cylindrical cast-iron receptacle, into which the coils of wire are placed one upon another until the pot is filled. It frequently occurs that during the process of annealing, one side of the pot, with its charge of wire, becomes heated to a much higher degree than the other portions, and the pile of wire settling over and pressing against the side causes the metal of the pot to bulge outward or crack, while the wire becomes overheated or burned where it comes in contact with the side of the pot, or its strands become fused or welded together by excessive heat, thus causing injury, annoyance, and expense.

The ordinary method of withdrawing the charge from the annealing-pot is to draw out the rolls of wire, one or two at a time, by means of tongs or hand-hooks. This is a slow and laborious process.

The object of my invention is to obviate the above objections, and to provide apparatus for annealing wire with greater facility. To this end my invention consists in the improved devices hereinafter described and claimed, when employed in apparatus for annealing wire, substantially as set forth.

In the drawings, A denotes the annealing-pot, of substantially ordinary construction, and having cover A′, for closing the top or mouth. B indicates a central hollow column or core, supported by suitable lugs, grooves, or centering attachments at its upper and lower ends, whereby it is held in an upright central position between the bottom *a* and cover A′ of the pot, without being rigidly connected to either.

C indicates an annular plate device, arranged to move freely in the space between the shell A and core B. Said plate is provided with eyes or loops *c*, (three or more,) from which chains D extend to the height of the annealing-cylinder A, the ends of the chains D terminating with rings *d*, as shown. Rods or long links may be used in place of chains D, if desired; but chains are deemed preferable. The top ends of the chains are connected about the core B and above the charge of wire E by means of a small chain, F, passed through the rings *d*, and its ends hooked together at one side.

The operation is substantially as follows: The plate C is placed in the bottom of the cylinder A, with the rings *d* of the chains D secured outside of the top rim *a′* by hooked weights or otherwise. The core B being in central position, the rolls of wire E are passed over said core and dropped into cylinder A until it is filled. The ends of the chain are then brought together, and secured by the tie-chain F; the cover A′ is placed in position, and luted in the ordinary manner, and the pot is then ready for heating. During the firing the wire is retained at the central part of the pot, the chains D and core B preventing it from coming in contact with any portion of the shell A, so that the wire will not become burned or fused, whether the shell or cylinder is evenly heated or otherwise.

When the annealing is completed the cover A′ is taken off; the core B is then removed from the center of the pot A, and the charge of wire withdrawn bodily by attaching a hoisting-crane to the rings *d* of chains D, and thus raising the plate C, with the wire supported thereon, from the cylinder A.

The wire may be dumped from the plate C when swung to the desired position by lowering the crane and releasing therefrom one or more of the chains D. Then by again raising on the crane the plate C is overturned by preponderance of weight toward the side where the chain is released.

Having described my improvements in an-

nealing wire, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In an apparatus for annealing wire, having a central core or column, a separate annular plate or wire-supporting device, having connected thereto a series of links or chains extending to the upper part of the annealing-cylinder and arranged for connection with a crane or hoisting device, whereby the plate or wire-supporting device, with the entire charge of wire, can be withdrawn, separately from the core, from the annealing-cylinder at a single operation, substantially as set forth.

2. An annealing apparatus having a central core or column, a separate wire-supporting device, movable between the core or column and cylinder, and provided with links or connections, whereby said supporting device can be separately raised for discharging the wire from the cylinder, substantially as set forth.

3. The combination, with the annealing pot or cylinder, of the hollow removable core or column, supported centrally therein by means of grooves, lugs, or centering devices at the upper and lower ends, whereby said core or column is retained in an upright and central position without permanent attachment, substantially as specified.

4. An annealing pot or cylinder provided with a separate central core or column, a plate or wire-supporting device, movable between the core or column and cylinder, and having secured thereto a series of links or chains, and a device or connection for holding them in an upright position against the wire coils, substantially as specified.

Witness my hand this 3d day of October, A. D. 1878.

CHAS. H. MORGAN.

Witnesses:

CHAS. H. BURLEIGH,

S. R. BARTON.