

J. J. Eagleton.

Annealing Wire.

N^o 14,908.

Patented May 20, 1856.

Fig. 3.

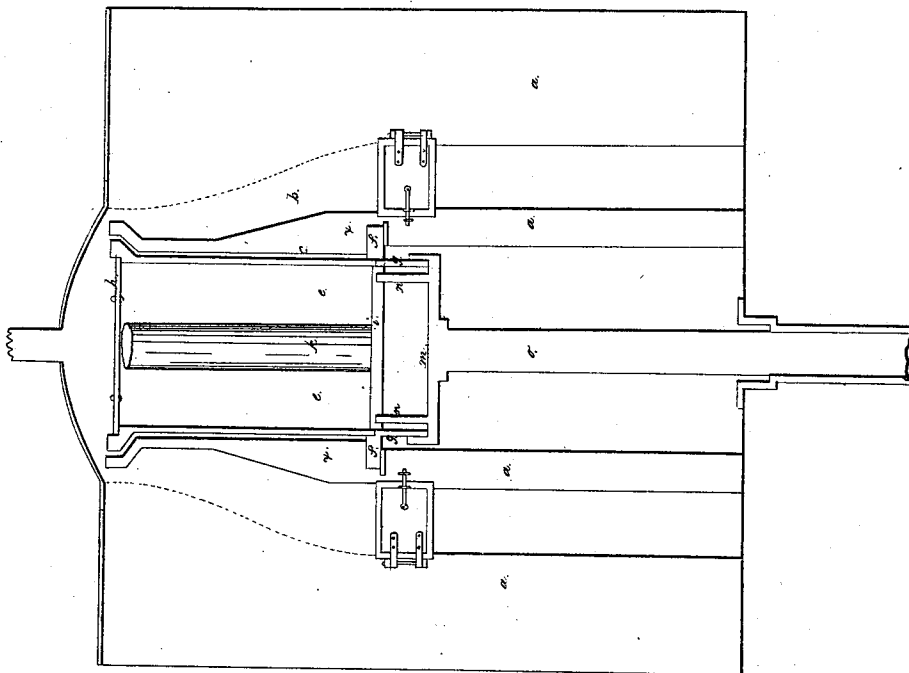
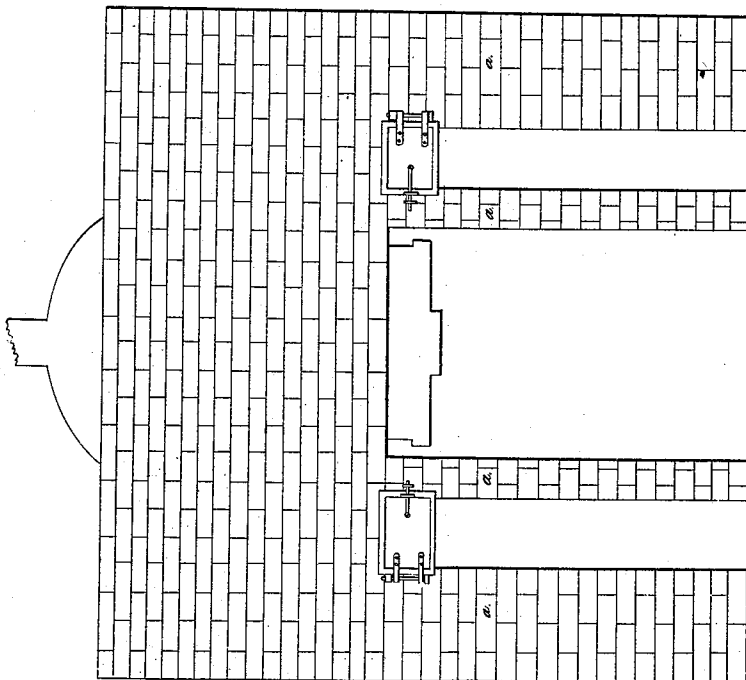


Fig. 4.



UNITED STATES PATENT OFFICE.

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ANNEALING-FURNACE.

Specification forming part of Letters Patent No. 14,908, dated May 20, 1856; Reissued June 24, 1856, No. 373.

To all whom it may concern:

Be it known that I, J. J. EAGLETON, of the city, county, and State of New York, have invented certain new and useful Improvements in Furnaces for Annealing Wire and other Analogous Purposes; and I have hereinafter described and ascertained the nature and purpose thereof, reference being had to the accompanying drawing, in which—

Figure 1, is a side elevation of the furnace. Fig. 2, is a vertical section thereof.

The method heretofore pursued for annealing wire has been to surround an iron cylinder with brickwork at some distance therefrom and between the two make a fire for heating said cylinder. Into this cylinder wire in coils was packed and then the open top was closed by a cover, it being necessary to exclude the air during the process.

When the wire was annealed the cover was removed and the wire lifted out by hooks, and the furnace recharged. This process had many defects, first the workmen were exposed to great heat and in throwing in the coils of wire to fill the cylinder they were often bent out of form and required rewinding to make them marketable again. Hooking up the heated soft wire its form was injured and short bends made in it.

Besides the time required to discharge and fill a cylinder was very considerable and the loss of heat was great, particularly as it was necessary to lower the heat before opening the cylinder in order to allow the workmen

to approach it. My invention is designed to obviate all these defects and is constructed as follows: I build a furnace of brick work or other masonry, leaving an annular chamber for the furnace. This is

elevated a proper height on piers *a a* Figs. 1 and 2. Within the interior wall of this annular chamber *b* there is a space *c* in which an iron cylinder is placed, lettered *e* Fig. 2, which is somewhat smaller than the space

so as to allow for its expansion and contraction as clearly shown in the figure. The lower end of cylinder *e* rests on an annular flanch *f* there being a rabbet therein to make the joint and form the flanch *f*. A cylindrical projection is made downward, lettered *g* of the same interior diameter as the cylinder *e* above the cover of the cylinder *h* is luted on. A disk *i* of cast iron is made

nearly to fit the interior circumference of the cylinder *e* and at the center of this I

attach a small cylinder *k*. The disk *i* is supported at a certain elevation above a cup formed casting *m* on supports *n* as seen in the figure so that when the cup *m* is brought up and shunts over the projection *g* the plate *i* will be within the cylinder and a double bottom be thus formed. The cup *m* is supported on a pillar *o* by which it is raised and lowered with any known mechanical power or device applicable to the purpose and with which mechanics are familiar. To operate this device thus constructed fires are made and kept up continuously in the furnaces *b* the cup and its accessories are lowered and a disk *i* which has been carefully packed with coils of wire cut to the size of the cylinder *e* is wheeled in onto its place on the cup by being placed on a truck for that purpose. The cup is then elevated and the wire carried up into the cylinder *e* till the cup shuts onto flanch *g* where it can be luted if necessary. In this state of the apparatus the wire is properly heated and annealed, the inner brick work *x* of the fire chamber *b* serving to shield the cylinder from the intense heat of the fire and prevent its warping. When the process is completed without reducing the fire or opening the top the cup *m* is lowered and the wire charge with it, the truck is brought into place and the wire hauled off to cool while at the same time another charge on a similar disk *i* is brought upon the cup charged with cold wire coils and is at once raised into the furnace which retains its full heat and thus the process goes continuously on. By thus charging the furnace the wire is packed smoothly which is not the case by the old method and it remains undisturbed till it is cool enough to be handled without bending or injury. It is at all times supported in its cylindrical form, a matter of great importance to the trade, and is more equably expeditiously and economically annealed than by any other process now known, thus filling and discharging the furnace in bulk being for the first time essayed by me.

It is obvious that the disk *i* could be used by having the bottom solid of cylinder *e* and immovable and opening the top and raising the wire out. This would not be so perfect a method but would be better than the present and would obviously interfere with my invention of filling annealing furnaces in

bulk and discharging in the same way without reducing the fires, by which I am enabled to anneal a much larger quantity in a given time and with less labor than heretofore.

Having thus fully described my improvements and their application what I claim therein as new and for which I desire to secure Letters Patent is—

Charging and discharging an annealing 10 furnace in bulk by the means herein described and substantially in the manner and for the purposes specified.

J. JOSEPH EAGLETON.

Witnesses:

R. WENT,

J. C. GREENOUGH.

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