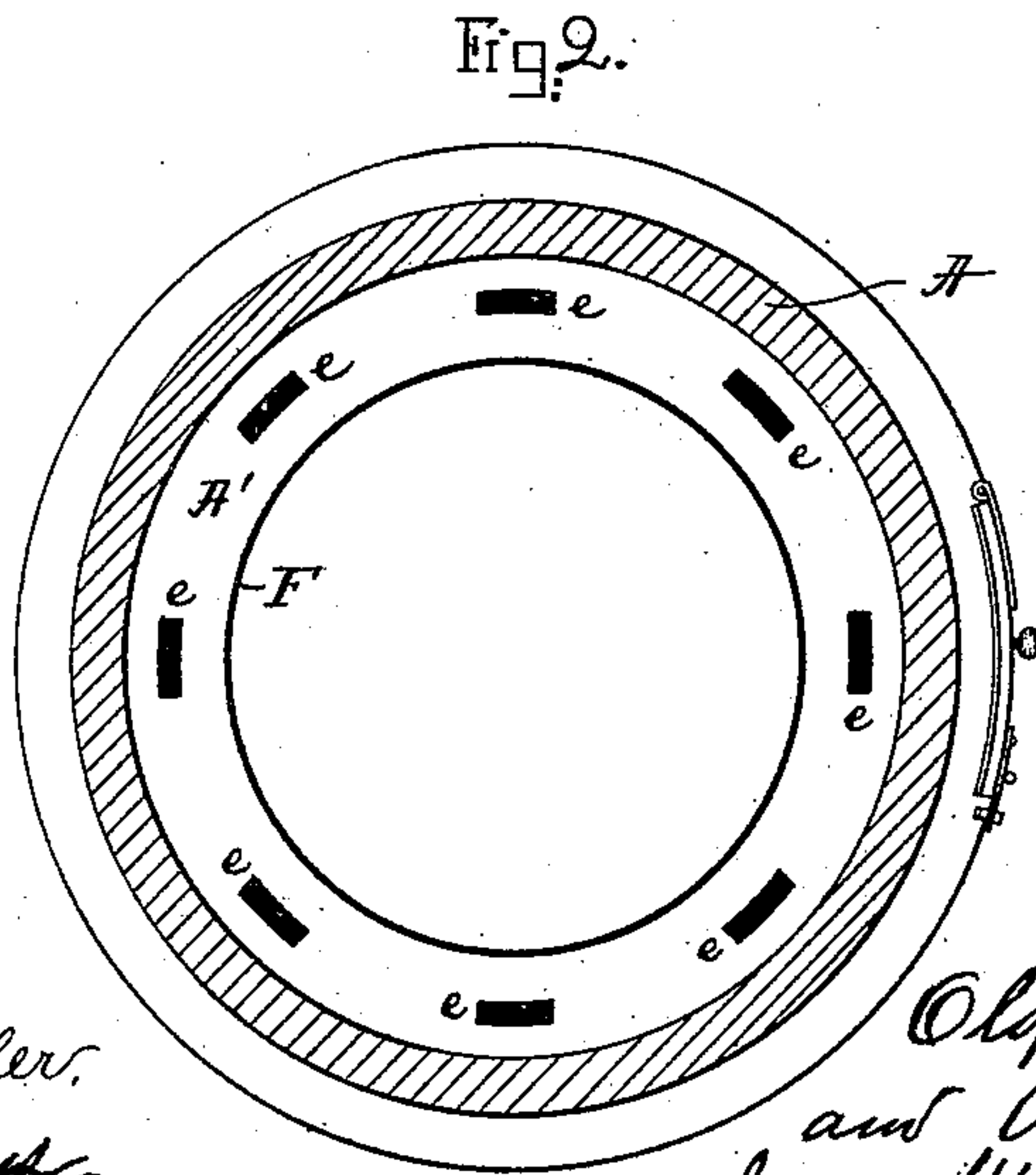
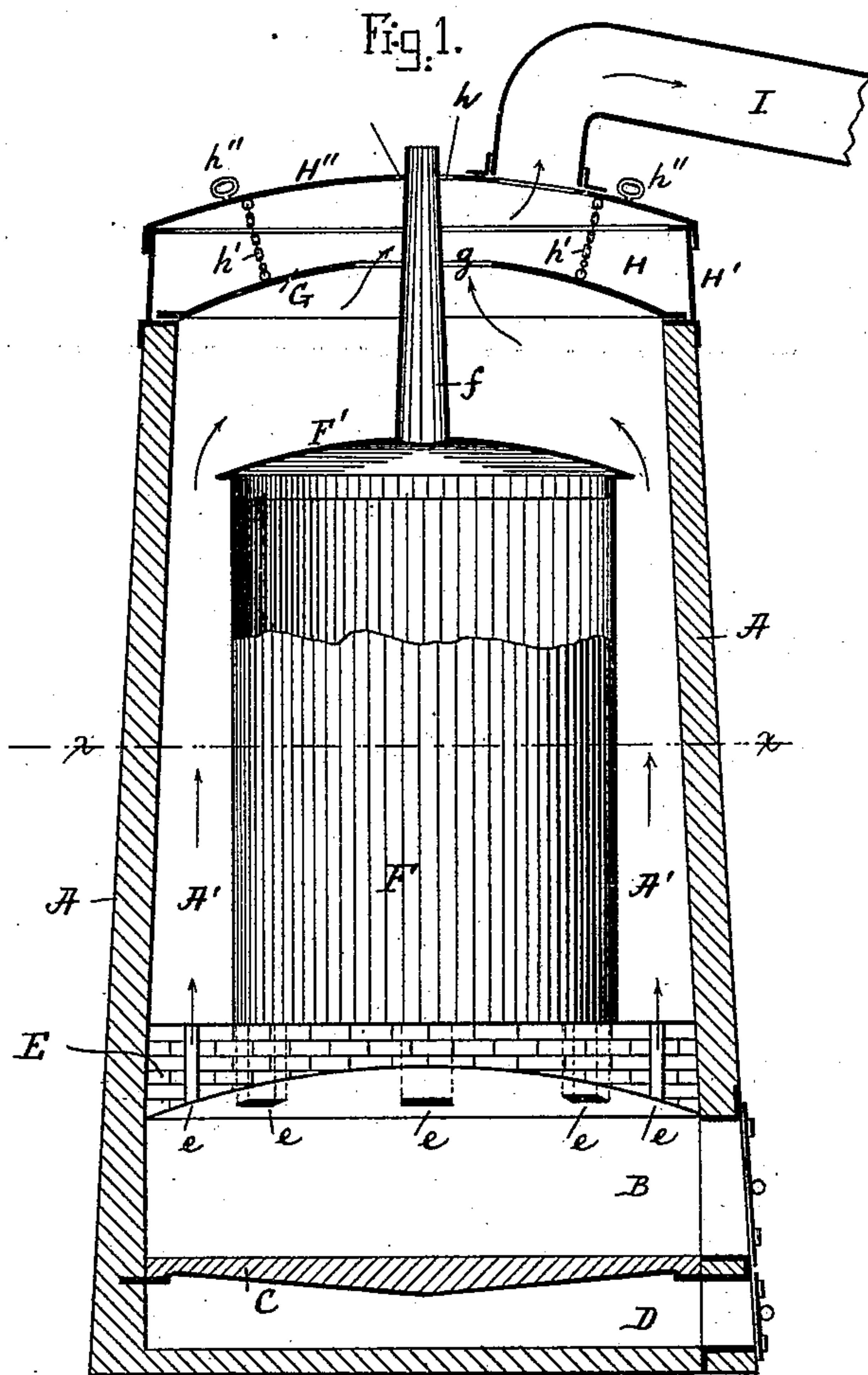


(No Model.)

O. J. WINLUND & A. L. LARSON.  
ANNEALING FURNACE.

No. 471,299.

Patented Mar. 22, 1892.



Witnesses.

Lauritz N. Möller.  
Alice A. Perkins.

Inventors.

Olof J. Winlund  
and August L. Larson  
by Alban Andrien atts.



# UNITED STATES PATENT OFFICE.

OLOF J. WINLUND AND AUGUST L. LARSON, OF WORCESTER, MASSACHUSETTS.

## ANNEALING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 471,299, dated March 22, 1892.

Application filed September 29, 1891. Serial No. 407,132. (No model.)

*To all whom it may concern:*

Be it known that we, OLOF J. WINLUND, a citizen of Sweden, and a resident of Worcester, in the county of Worcester and State of Massachusetts, and AUGUST L. LARSON, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have jointly invented new and useful Improvements in Annealing-Furnaces, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in annealing-furnaces for annealing wire, wire rods, or other articles, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a central longitudinal section of the improved annealing-furnace, and Fig. 2 represents a cross-section on the line X X shown in Fig. 1.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

A is the inclosing brick-work of the furnace, having in its lower portion the fire-pot B, grate C, and ash-pot D, as shown in Fig. 1. Above the fire-pot is a brick arch E, upon which rests the annealing-pot F, in which the articles that are to be annealed are introduced.

*e e* are heat-passages through the fire-pot arch E, leading from the fire-pot to the annular space or annealing-chamber A' between the interior of the brick inclosure A and exterior of the annealing-pot, as shown in the drawings.

F' is a detachable cover resting on top of the annealing-pot F, said cover being provided with an upwardly-projecting tube *f* for the purpose of looking into the pot F from time to time so as to ascertain the state of the annealing process.

On top of the upper end of the brick-work A rests a detachable diaphragm or heat-deflector G, having a central opening *g*, surrounding the sight-tube *f* and leaving an annular space outside of the latter sufficiently large to permit the heated products from the

annealing-chamber A' to pass out through said opening *g*. Above the deflector G is a chamber H, inclosed by means of a wall H', preferably made of sheet or cast metal, and on top of said wall H' is a detachable cover H'', having a central perforation *h*, adapted to receive the upper end of the sight-tube *f*.

I is the chimney leading from the chamber H, as shown. The covers H'' and G are preferably connected by means of chains or rods *h' h'*, (shown in Fig. 1,) to enable both covers to be removed at one operation when loading or unloading the pot F.

*h'' h''* are suitable handles secured to the cover H''.

The operation is as follows: The covers H'' and G are removed, after which the cover F' and its sight-tube *f* are removed from the top of the pot F to enable the articles to be annealed to be introduced within said pot F, after which the top of the latter is closed by means of the cover F'. The covers G and H'' are then replaced in position, as shown in Fig. 1. During the annealing process the products of heat from the fire-pot B pass through the openings *e e* and upward through the annular annealing-chamber A', and when reaching the upper end of the latter such heat products are conducted above the pot F through the central perforation *g* into the chamber H, and from the latter to the chimney I. During the annealing process the progress of the operation is ascertained from time to time by looking through the sight-tube *f*, and when finished the covers H'', G, and F' are removed and the pot F is then emptied of its contents.

By this improved annealing-furnace the articles to be annealed are quickly and uniformly heated.

Having thus fully described the nature, construction, and operation of our invention, we wish to secure by Letters Patent and claim—

The herein-described annealing-furnace, consisting of fire-pot B, supporting-arch E, and perforations *e e*, leading from the latter to the annular annealing-chamber A', and the annealing-pot F, arranged within the latter and having removable cover F' and sight-

tube *f*, combined with the detachable deflector  
G, having central opening *g*, surrounding the  
sight-tube, the chamber H, and detachable  
cover H'', substantially as and for the pur-  
5 pose set forth.

In testimony whereof we have signed our  
names to this specification, in the presence of

two subscribing witnesses, on this 1st day of  
July, A. D. 1891.

OLOF J. WINLUND.  
AUGUST L. LARSON.

Witnesses:

ALBAN ANDRÉN,  
JOSEPH F. HAWKINS.