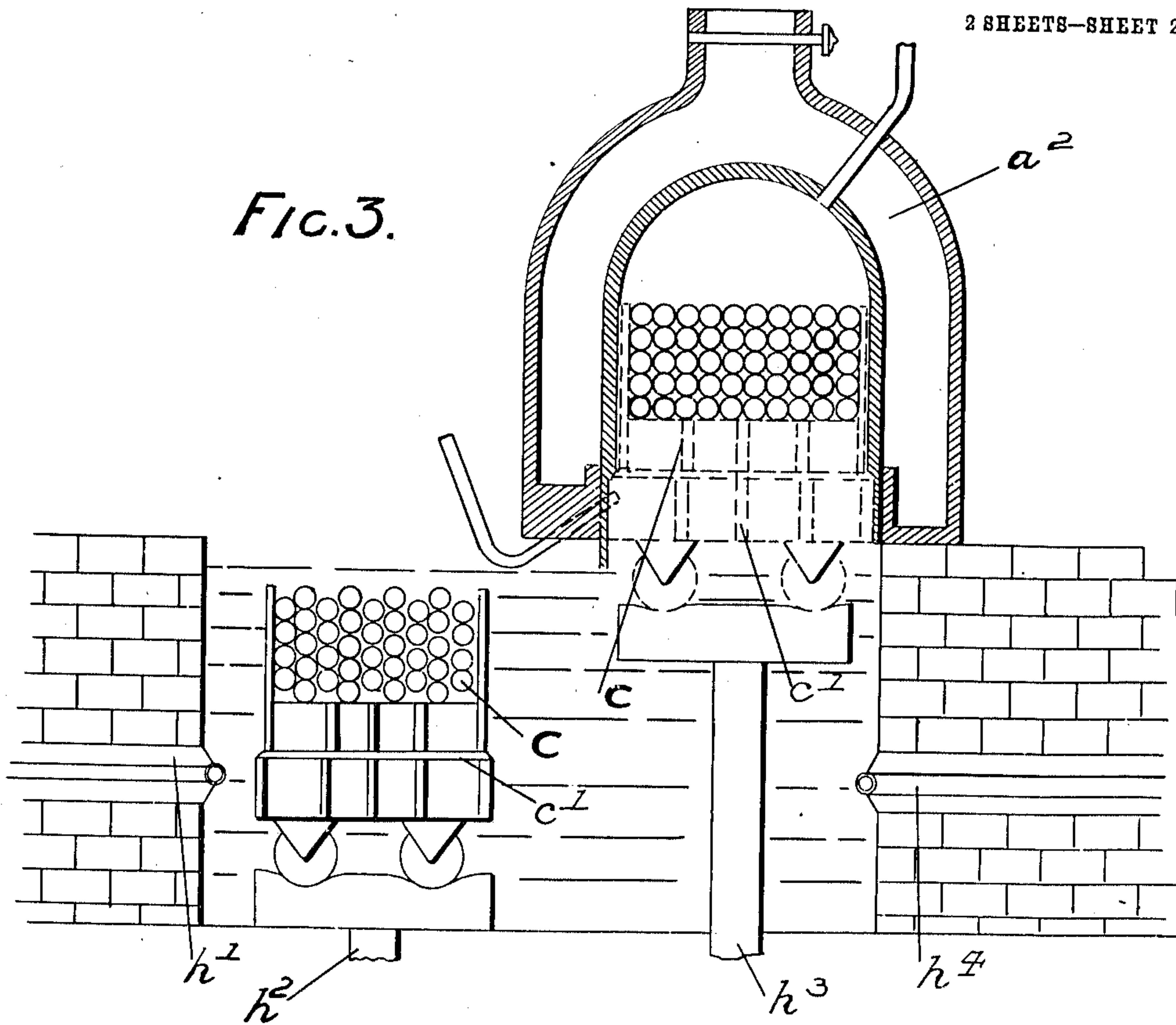


M. PEDERSEN.
FURNACE FOR THE ANNEALING OF METALS.
APPLICATION FILED OCT. 29, 1907.

955,989.

Patented Apr. 26, 1910.

2 SHEETS—SHEET 2.



Witnesses.

H. L. Trimble.
X B. Robertson.

Inventor.

Michael Pedersen
by Charles A. Smith
his Attorney

UNITED STATES PATENT OFFICE.

MIKAEL PEDERSEN, OF DURSLEY, ENGLAND.

FURNACE FOR THE ANNEALING OF METALS.

955,989.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed October 29, 1907. Serial No. 399,729.

To all whom it may concern:

Be it known that I, MIKAEL PEDERSEN, a subject of the Kingdom of Denmark, residing at Raglan House, Dursley, in the county of Gloucester, England, engineer, have invented certain new and useful Improvements in and Relating to Furnaces for the Annealing of Metals, (for which I have applied for Letters Patent in Great Britain, Patent No. 7,071, dated the 3d of March, 1907,) of which the following is a specification.

This invention relates to a furnace for annealing metals wherein liquid is employed to hermetically seal the chamber in which the annealing operation is carried out and it consists in the construction and arrangement of the parts hereinafter described and pointed out in the appended claim whereby the annealing operation is effected in a non-oxidizing atmosphere, and to the means for accomplishing the delivery and discharge of the goods to and from the annealing chamber.

Referring to the explanatory drawings which are appended hereunto:—Figure 1, is a sectional elevation of a furnace constructed according to the present invention. Fig. 2, is a plan of the furnace shown by Fig. 1. Fig. 3 is a similar view to Fig. 1, but showing a furnace suitable for annealing tubes or rods, and also showing one method of raising or lowering the bottom or table by hydraulic means.

In the drawings the furnace is preferably formed of a cylindrical shape and is arranged vertically over a tank or basin B of water which seals the lower open end a' of the furnace A which latter may be made in one piece either of iron, fireclay or any other suitable material or it may be built up of bricks with passages or flues for the flame to play around it, or it may be formed in sections which may be made tubular so as to allow for the heating, the top a^2 of the cylinder being domed over or otherwise closed in.

F is a coil for heating air by waste gases, G is a flash boiler, g' is a steam inlet, g^2 is a steam outlet and a^3 is an inspection hole.

For supporting the goods during annealing I employ a table C which constitutes the bottom of the furnace A. Such table C

is so arranged that it may be depressed from or elevated to the interior of the furnace A from below and for this purpose it is mounted at D upon the outer extremity d^3 of a tubular pivoted arm d' which may be swung around and moved in a vertical direction. At its end d^2 the said arm d' is attached to a bracket e' which is adapted by means of a squared or like hole therein to slide up or down on a correspondingly shaped vertical shaft E which is suitably journaled at e^2 to the main tank B, suitable provision being made to prevent the egress of water from the latter. An upwardly extending handle J is attached to the arm d' by a socket j' by which the table may be manually depressed or elevated and to assist such manipulation counterweights K are suspended on a chain k' which passes over a pulley L journaled on a bracket l' secured to a squared extension e^3 of the vertical shaft E, such chain k' being attached to the horizontal arm d' by a bolt k^2 .

In operation, the goods are placed upon the table C which is then above the water, the arm d' carrying the table C immersed to a suitable depth in the water in the tank B and such arm d' and table C swung around with the vertical pivot E as axis until they assume a position directly below the retort A. The table C and arm d' are then elevated by manipulating the handle J until the table supporting the goods arrives at a suitable position inside the retort, the process of removal being effected in an exactly similar manner but in the contrary direction.

The furnace may be heated by any suitable heating device, but as the heating apparatus does not constitute part of the invention, and as it is not a necessary element in the erection of the furnace, although it is necessary for its operation, it has not been illustrated.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

An annealing furnace comprising an annealing chamber having its lower end open, a water tank below the lower end of the annealing chamber, a removable bottom for the annealing chamber, a supporting arm connected at one end to the removable bot-

tom, a vertical shaft journaled to oscillate
in the water tank, a bracket secured to the
other end of the supporting arm and ver-
tically movable on, and, oscillating with,
5 the shaft, a handle attached to the support-
ing arm to effect its vertical adjustment, a
grooved idler, a chain passing over the
grooved idler attached at one end to the

supporting arm, and a counter weight at-
tached to the other end of the chain. 10

In witness whereof I have hereunto set
my hand in the presence of two witnesses.

MIKAEL PEDERSEN.

Witnesses:

WALTER H. E. BARTLAM,
D. M. BARDEN.