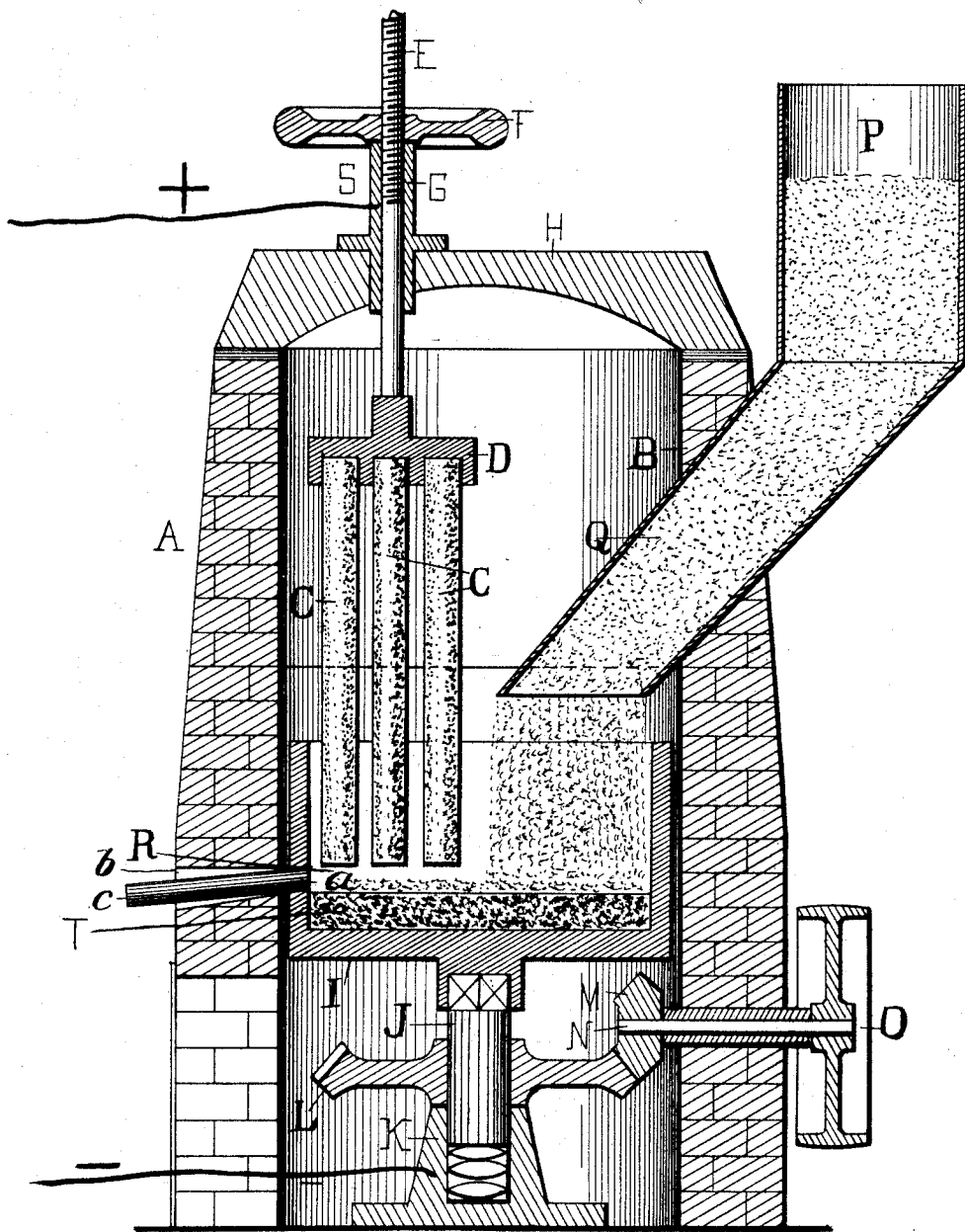


(No Model.)

R. F. S. HEATH.
ELECTRIC FURNACE.

No. 586,686.

Patented July 20, 1897.



WITNESSES

James F. Gannon
W. F. Rye

INVENTOR

Robert F. S. Heath
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UNITED STATES PATENT OFFICE.

ROBERT F. S. HEATH, OF CAMDEN, NEW JERSEY, ASSIGNOR, BY DIRECT
AND MESNE ASSIGNMENTS, OF FORTY-NINE ONE-HUNDREDTHS TO
HENRY D. HUGHES, OF STRAFFORD, PENNSYLVANIA.

ELECTRIC FURNACE.

SPECIFICATION forming part of Letters Patent No. 586,686, dated July 20, 1897.

Application filed February 24, 1896. Serial No. 530,400. (No model.)

To all whom it may concern:

Be it known that I, ROBERT F. S. HEATH, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented a new and useful Electric Furnace, of which the following is a specification.

My invention relates to an electric furnace for the production principally of the carbid of calcium.

It consists in a stationary positive pole and a rotary negative pole. The bottom of the furnace rotates and forms said rotary negative pole.

The accompanying drawing is a vertical and diametrical section of a furnace which embodies my invention.

A is the wall of an electric furnace.

B is a non-conducting lining.

C are carbons within the furnace depending from a carbon-carrier D on the bottom end of a screw-rod E, which is operated for raising or lowering the carbons by means of a hand-wheel F on a guide or bearing G on the cap H of the furnace.

I is a melting-pot or rotary bottom of the furnace which turns on or with an antifriction vertical shaft J of a bottom guide K.

Rotation is imparted to the pot or furnace bottom I by means of a bevel-wheel L on a shaft J, gearing with a bevel-wheel M on a horizontal shaft N, having an actuating-pulley O on its outer end.

P is a feeder, from the exterior to the interior of the furnace, for supplying material Q to the pot I, in which it can be leveled and distributed by said revolving pot or furnace bottom I, bringing it in contact with the bottoms of the carbons C.

S is the positive and stationary pole of the electric furnace, which comprises the carbons C, and T is the negative and rotary pole or rotary bottom of the electric furnace I, which is preferably of broken carbon.

In practice the material Q is fed into the furnace A through the feeder P and the pot

or rotary bottom I of said furnace revolved by power imparted to the pulley O and transmitted through the shaft N, bevel-wheels L M, and the vertical shaft J. The diameters 50 of the bevel gear-wheels are such that a slow revolution is given to the pot or rotary bottom I or negative pole in order to bring all the material within the influence of the electric arc for melting. After converting into 55 the carbid of calcium it can be run out of the furnace by a tap-hole and spout or the carbons or positive pole can be raised and said pot or rotary bottom rolled out of said furnace through a suitable door. 60

Before filling the furnace for making carbid of calcium the opening *a* in the side of it is plugged with any suitable material, and after the completion of said carbid of calcium said opening is tapped by means of the pipe 65 *c*, which is passed through the opening *b* into the opening *a* in the rotary furnace, displacing the plug and thereby allowing the material to run out by said pipe *c*, which does not remain in the opening during the rotation, 70 but is withdrawn.

I claim—

In an electric furnace, the combination of depending stationary carbons, carbon-carrier, screw-rod for raising and lowering said 75 carbons, a bearing for said screw-rod, a rotary melting-pot, a material-feeder, means for removing the carbid of calcium from the melting-pot, an antifriction vertical shaft for the rotary melting-pot, a bottom guide for the 80 antifriction-shaft, bevel-gear of antifriction-shaft, bevel-gear of horizontal shaft, horizontal shaft, and means for actuating horizontal shaft, for the manufacture of the carbid of calcium. 85

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT F. S. HEATH.

Witnesses:

FRANCIS D. PASTORIUS,
JOSHUA E. BORTON.