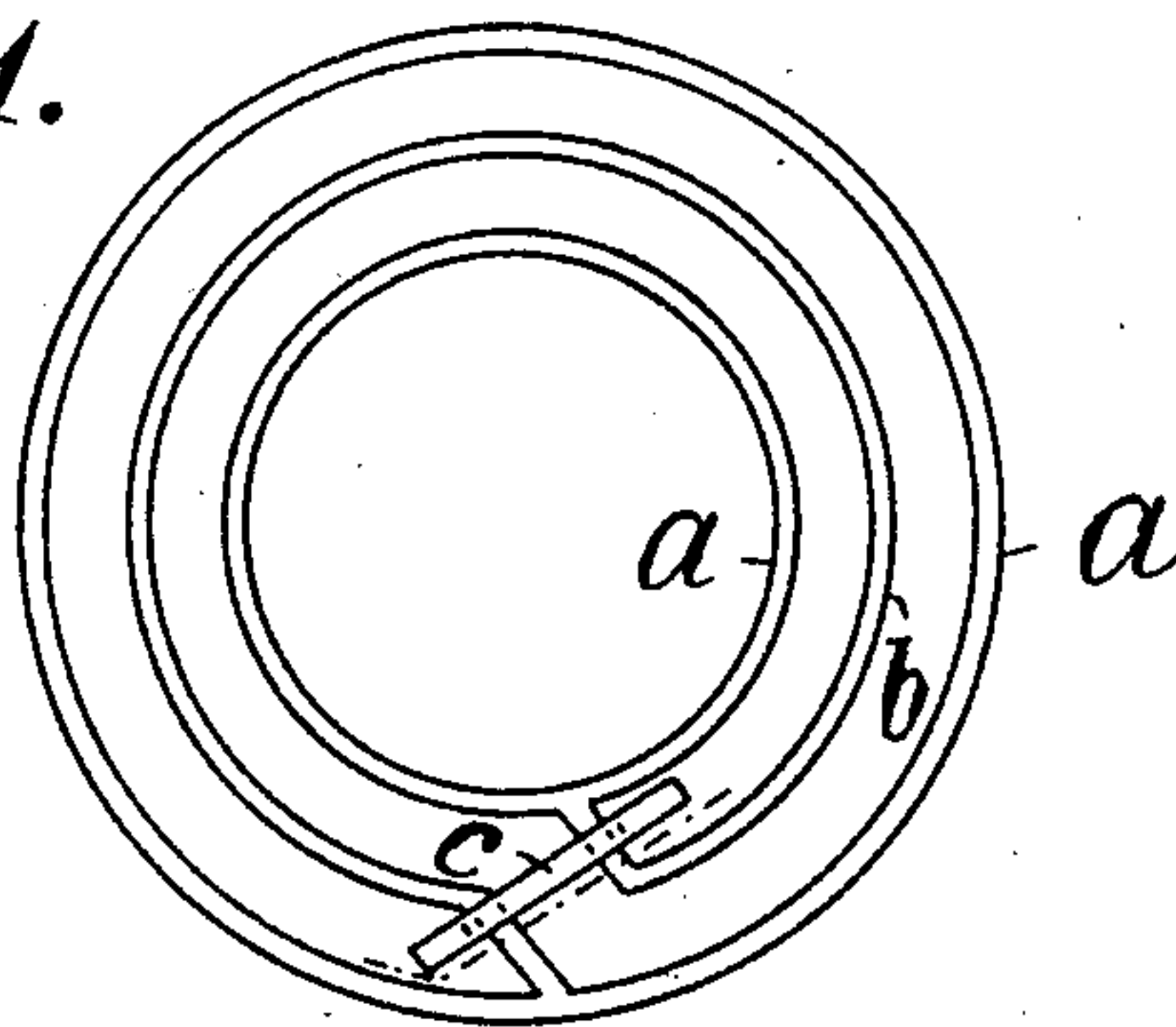


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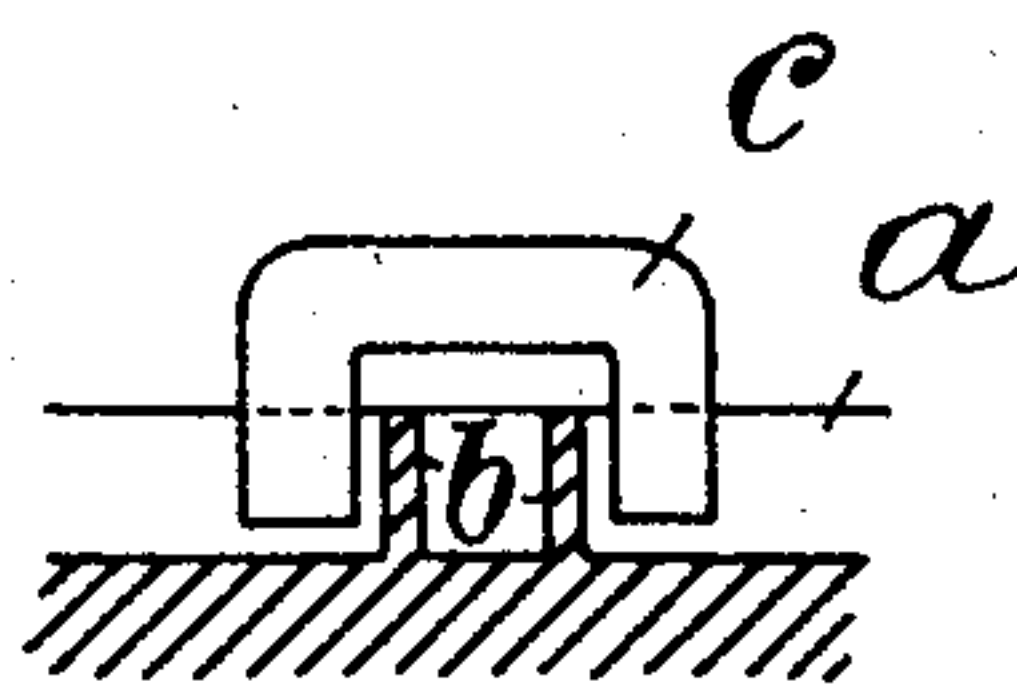
PATENTED JUNE 2, 1908.

K. A. F. HIORTH.  
ELECTRIC INDUCTION FURNACE.  
APPLICATION FILED JAN. 2, 1908.

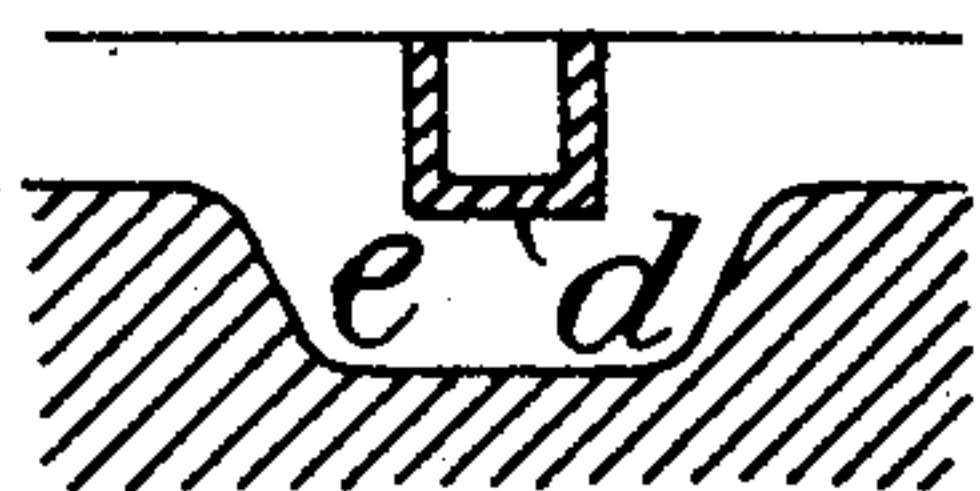
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses.

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Karl Albert Fredrik Hiorth  
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# UNITED STATES PATENT OFFICE.

KARL ALBERT FREDRIK HIORTH, OF CHRISTIANIA, NORWAY.

## ELECTRIC INDUCTION-FURNACE.

No. 889,522.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed January 2, 1908. Serial No. 409,071.

*To all whom it may concern:*

Be it known that I, KARL ALBERT FREDRIK HIORTH, a subject of the King of Norway, residing at Christiania, Norway, have invented certain new and useful Improvements in Electric Induction-Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

In electrical induction furnaces, if the same are to have large dimensions, it is a drawback that eddies are liable to be formed in the charge whereby the efficiency is considerably reduced. However, in some cases it will be a matter of importance to be able to give the smelting mass a larger surface, for instance if the process is to be carried out with energetic slags, and it will therefore be of some consequence, if the surface of contact between metal and slags may be made to suit the requirements. According to the present invention the said drawback is avoided by giving the smelting chamber a spiral-like shape and by connecting the ends of the spiral by a conductor of solid or liquid material.

By way of example a form of electrical induction furnace embodying the present invention is shown on the accompanying drawing in Figures 1 and 2, *a* being the outer walls of the furnace and *b* a spiral-like wall built between the same; *c* is a conductor connecting the ends of the spiral smelting chamber thus formed. The conductor *c*, working as a kind of double electrode, extends, in the

arrangement shown in Figs. 1 and 2, from above down into the smelting chamber, but it may, of course, be arranged in other ways and if desired form part of the smelting mass, in which case a portion of the spiral chamber may form a bridge *d* across the lowered part or parts of the smelting chamber crossing it below. Besides minimizing the injurious eddies it is also attained by this arrangement of the smelting chamber, to increase the resistance of the charge, and hereby a more favorable ratio of transformation (the coefficient of transformation being reduced) and also other advantages of electrotechnical nature being obtained.

### Claims.

1. In an electric induction furnace, a spiral-like smelting channel the ends of the windings of which are conductively connected to each other.

2. In an electric induction furnace, a magnetizable core, means to create magnetic fluxes in the said core, a smelting channel surrounding said core and having two or more turns one inside of the other, and means to electrically connect the inner and outer end of said channel.

3. In an electric-induction furnace, a spiral-like smelting channel having a plurality of turns, the ends of the inner and of the outer convolutions of the channel being connected by a depression passing under the intermediate portions of the channel.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

KARL ALBERT FREDRIK HIORTH.

Witnesses:

HENRY BORDEWICH,  
MICHAEL ALGER.