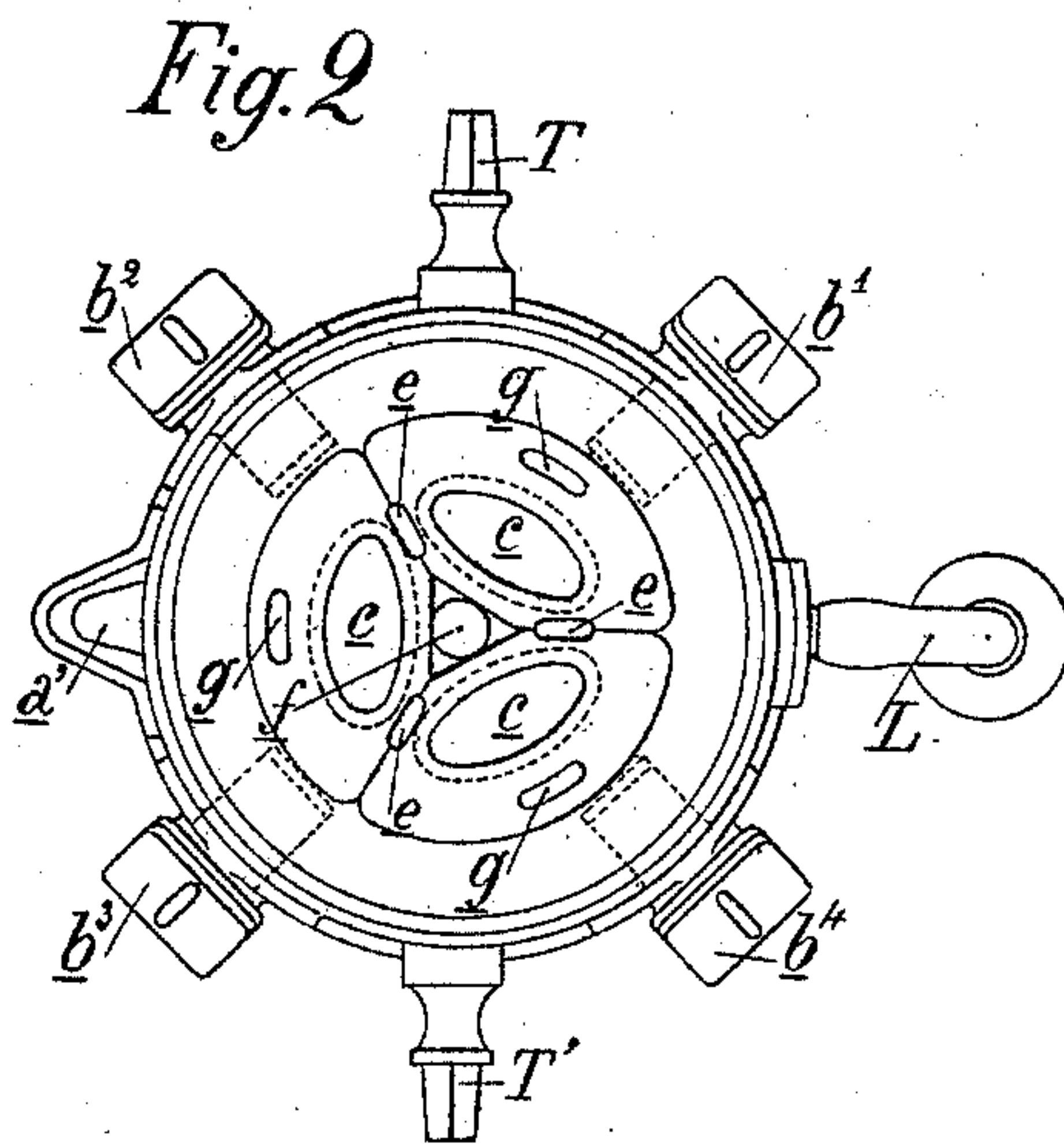
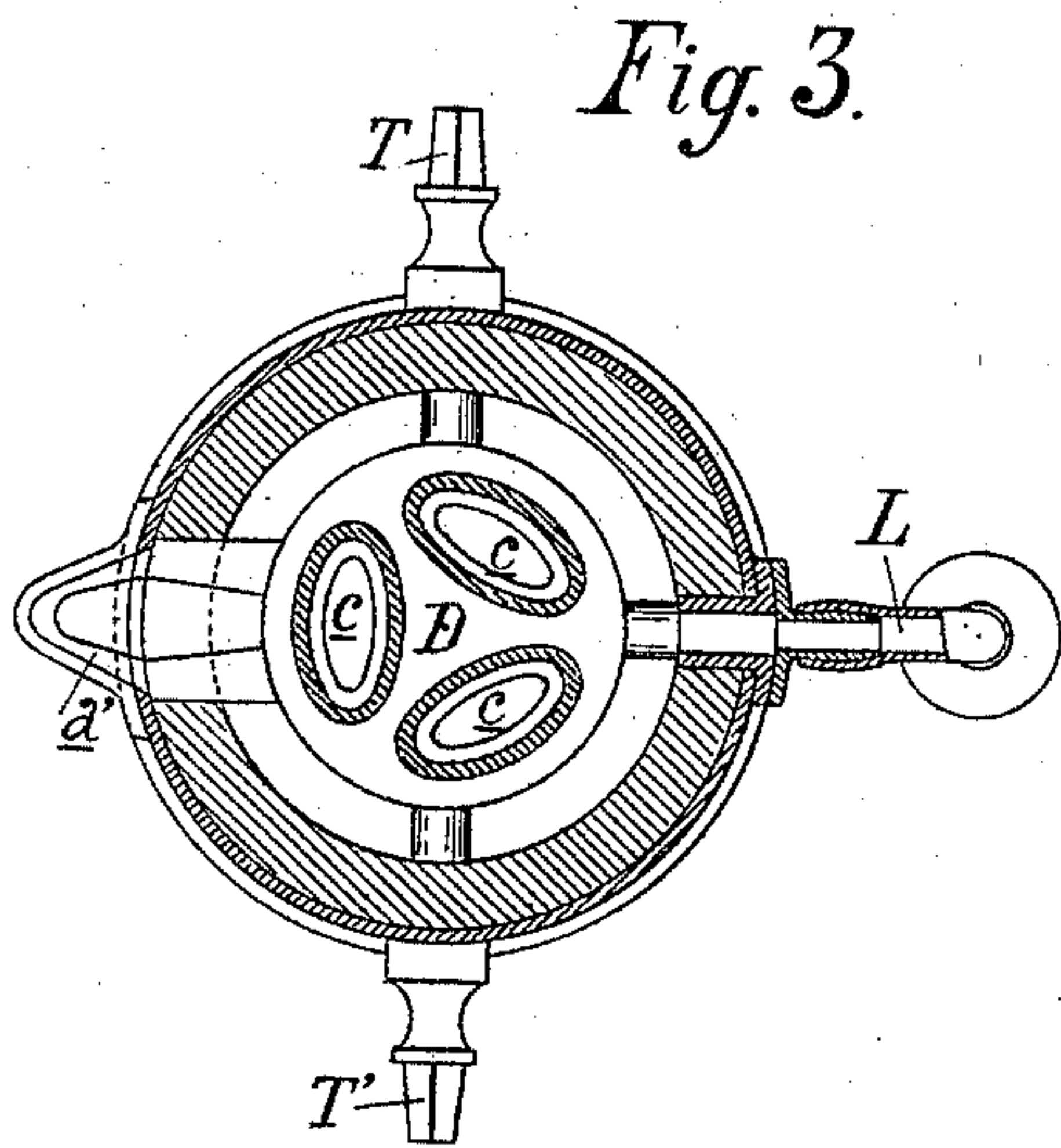
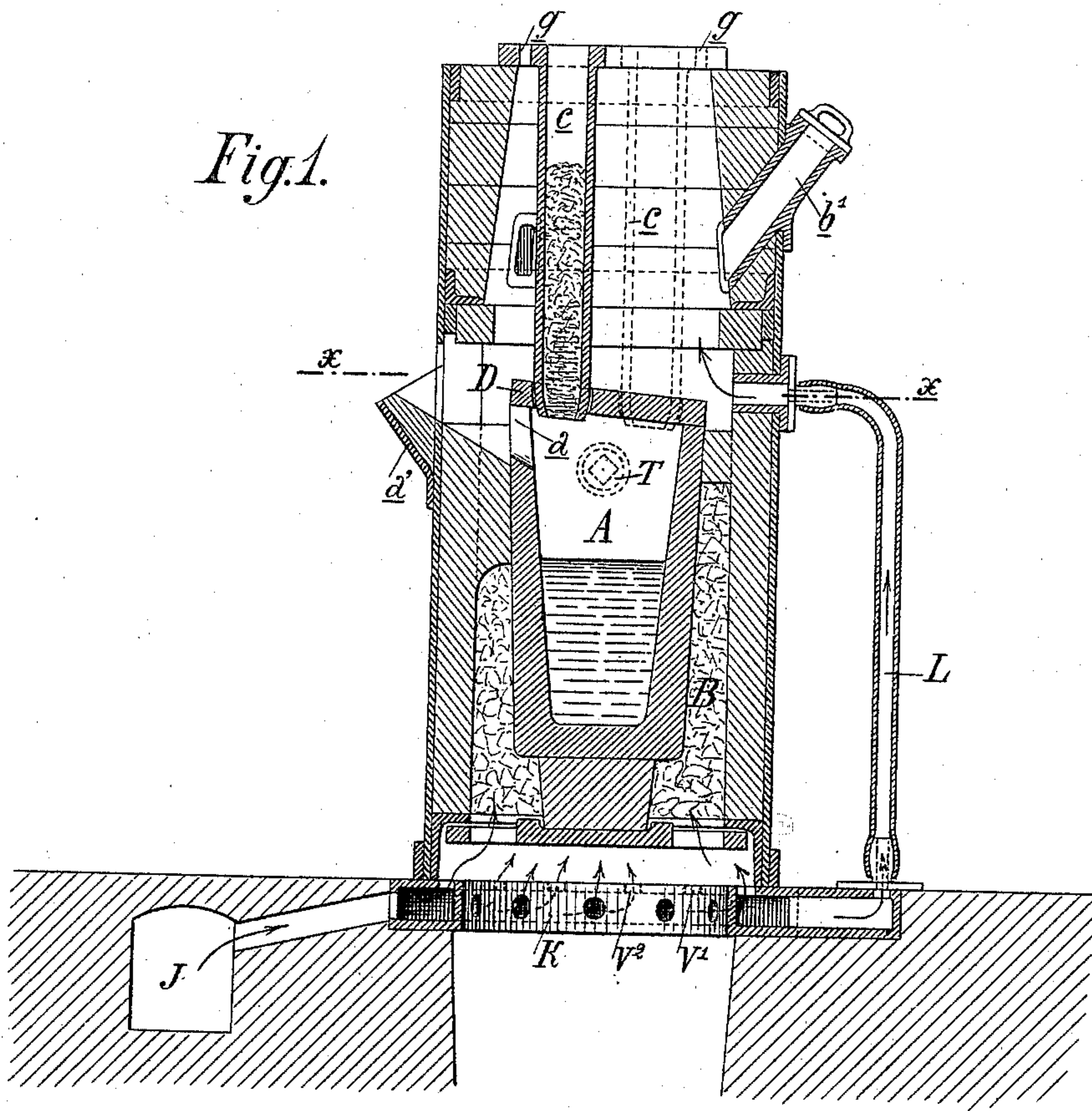


(No Model.)

L. DELETTREZ.
MELTING FURNACE.

No. 584,771.

Patented June 22, 1897.



Witnesses:

E. R. Bolton
O. W. Munk

Inventor:
Louis Delettrey

By

[Signature]

his Attorneys.

UNITED STATES PATENT OFFICE.

LOUIS DELETTREZ, OF PARIS, FRANCE.

MELTING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 584,771, dated June 22, 1897.

Application filed November 25, 1896. Serial No. 613,416. (No model.) Patented in France December 6, 1895, No. 252,234.

To all whom it may concern:

Be it known that I, LOUIS DELETTREZ, of Paris, France, have invented certain new and useful Improvements in Melting-Furnaces, (patented in France December 6, 1895, No. 252,234,) of which the following is a specification.

The purpose of my improvements is to promote in oscillating crucible-furnaces, especially those destined for the melting of metallic refuse, waste, and chips, the rapid, economical, and perfect smelting of these matters, and to produce in fire-brick pots or crucibles of refractory material a hot smelting of superior grade, protected against contact with the hot gases.

The improvements comprise hollow extensions or flattened tubes as long and narrow as convenient, all of them being open both at the top and at the bottom. The lower part is slightly conical and opens into the lower receiving-crucible, entering the latter through holes in the lid covering said crucible. The extensions are immersed in the hot gases, and the burning coke surrounds the lower crucible. They present large heating-surfaces, and the matter to be melted, not traversed by the gases from the furnace and not in any contact with them, is distributed against the heated wall in the smallest possible thickness.

Figure 1 is a vertical section through the axis of a crucible-furnace with extensions constructed after my improvements. Fig. 2 is a ground plan of Fig. 1. Fig. 3 is a horizontal section on the line X X of Fig. 1.

The new furnace consists of a lower receiving-crucible A, having, preferably, an outlet *a*, corresponding to the spout *a'* of the outer mantle, and on top distinct and entirely separate extensions *c c c*. The crucible A is arranged in the ordinary manner in the center of the furnace B, blown from below or from the side with supplementary injection of air supplied by a conduit-pipe diverted toward the nether part of the gas-chamber of the furnace. A refractory plate D is placed over the crucible A as a cover. It has holes into which fit the slightly conical lower parts of the several extensions *c c c*. The arrangement adapted for these extensions is such as to present to the matter to be melted a narrow passage and a large heating-surface, the

latter consisting of both the outer walls of the extensions and the inner walls, the hot gases of combustion after having surrounded on all sides all the extensions escaping through the conduit-pipes *e, f*, and *g* at the top between the extensions and between these and the top opening of the furnace. The extensions *c c* are inclosed within the furnace, and the openings *e f g* extend through the top thereof.

The blast-air entering through the base J and the perforated socket K passes through the grate of the furnace in the direction indicated by the arrows, traverses the burning coke, increasing its combustion, and invades the upper part of the furnace in the state of hot gas. During this process the spout *a'* will generally be heated. The lower part of the extensions is thus heated to a high temperature, and the material to be melted being in contact with the heated wall melts and flows along the inner wall into the crucible A.

A side conduit-pipe L of the air-blast permits the injection of a certain quantity of air into the lower part of the gas-chamber of the furnace at the height of the lid D, where it contributes to a more complete combustion of the gases escaping from the fire-coke. This pipe can be easily detached, so as not to interfere with the mobility or the oscillation of the furnace on the trunnions T T'.

Side openings located in *b' b² b³ b⁴* and provided with movable stoppers fitted with refractory clay permit the feeding of the furnace with coke when required, thereby avoiding the considerable cooling of the furnace, which otherwise takes place every time when coke is introduced into the furnace in large quantities at a time.

I claim—

1. In combination in a crucible-furnace, the crucible A having the lid D, a plurality of extensions or long and narrow flattened tubes *c, c*, imperforate on their sides and extending up from the lid D through which their lower conical ends open into the crucible, the combustion-chamber about the crucible extensions, an air-supply leading into the furnace at the height of the lid D, and the perforated socket K connected with the lower part of the furnace, and with an air-supply.

2. In combination in a furnace with the cru-

cible A having the lid D, a plurality of extensions or long and narrow flattened tubes *c, c*, inclosed in the furnace imperforate on their sides and extending up from the lid, the said
5 furnace having the side openings *b', b², b³, b⁴*, and the passages or flues *e, f, g*, for the escape of the hot gases from around and between the extensions, substantially as described.

3. In combination in a furnace, with the
10 crucible A having the lid D, a plurality of imperforate extensions or tubes projecting up

from the lid communicating with the crucible through the lid thereof, escape-passages for the gas at the top of the furnace and means for feeding the air to the chamber about the
15 extensions, substantially as described.

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

LOUIS DELETTREZ.

Witnesses:

EDWARD BENGNIOT,

H. T. SMITH.