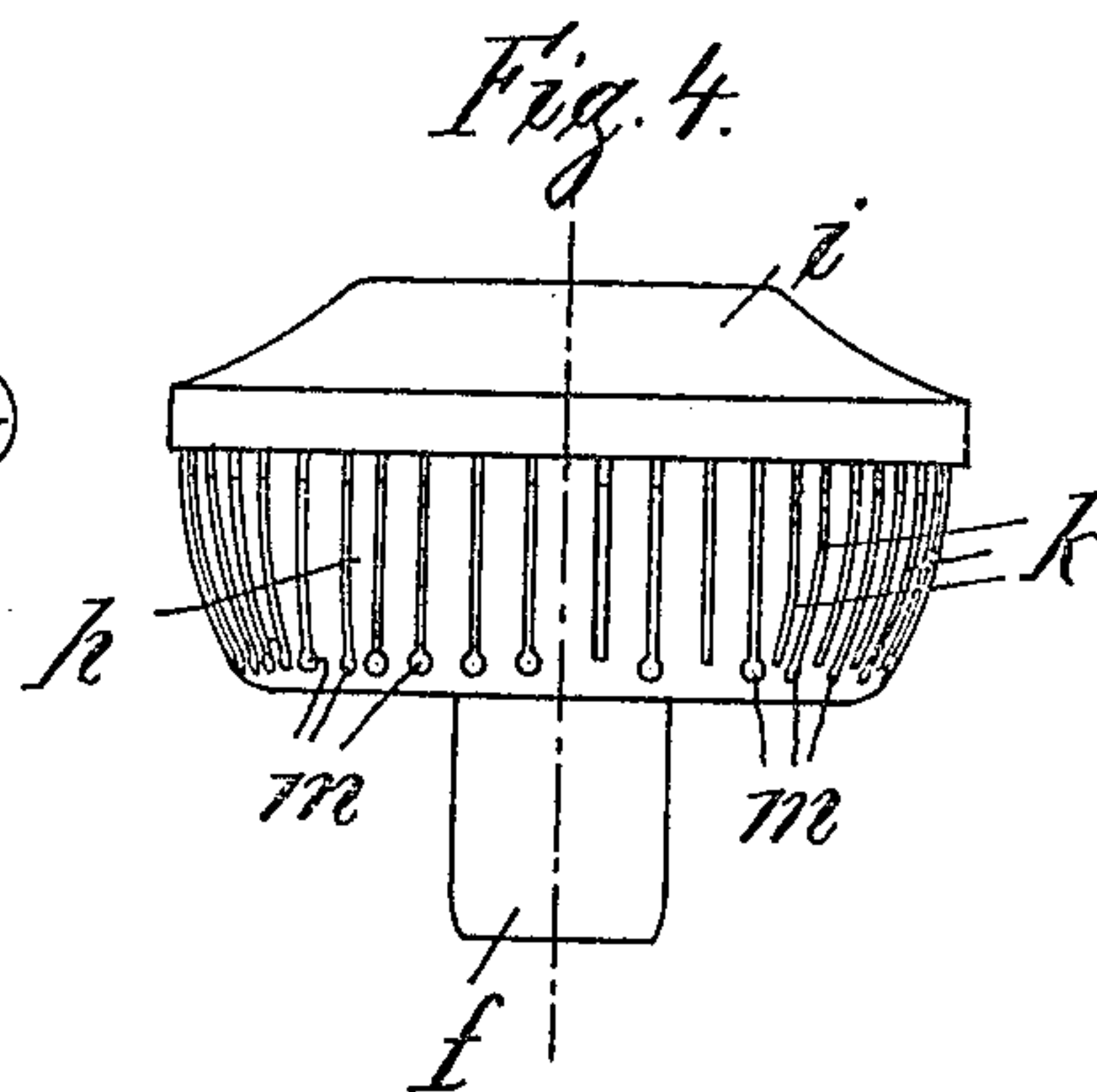
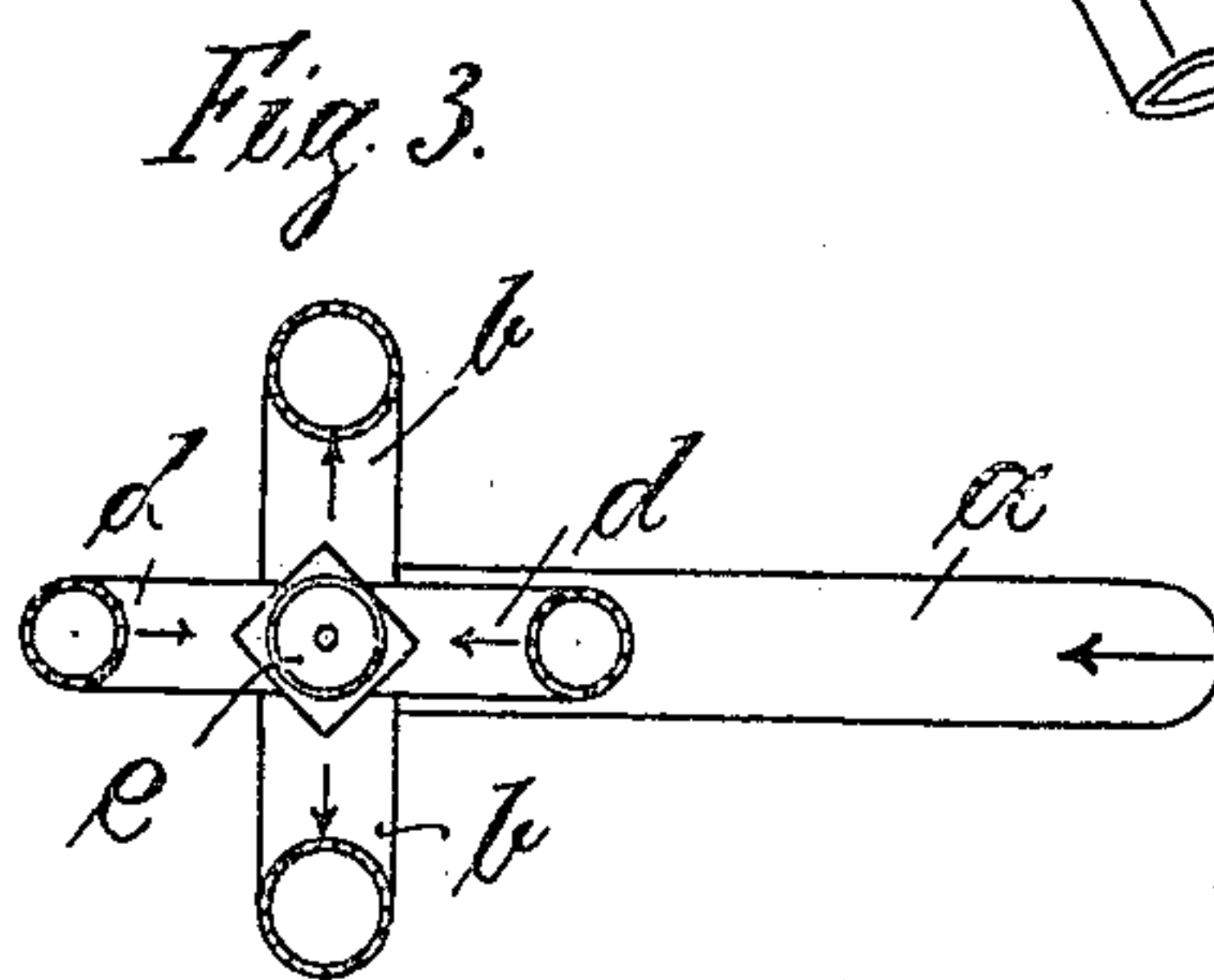
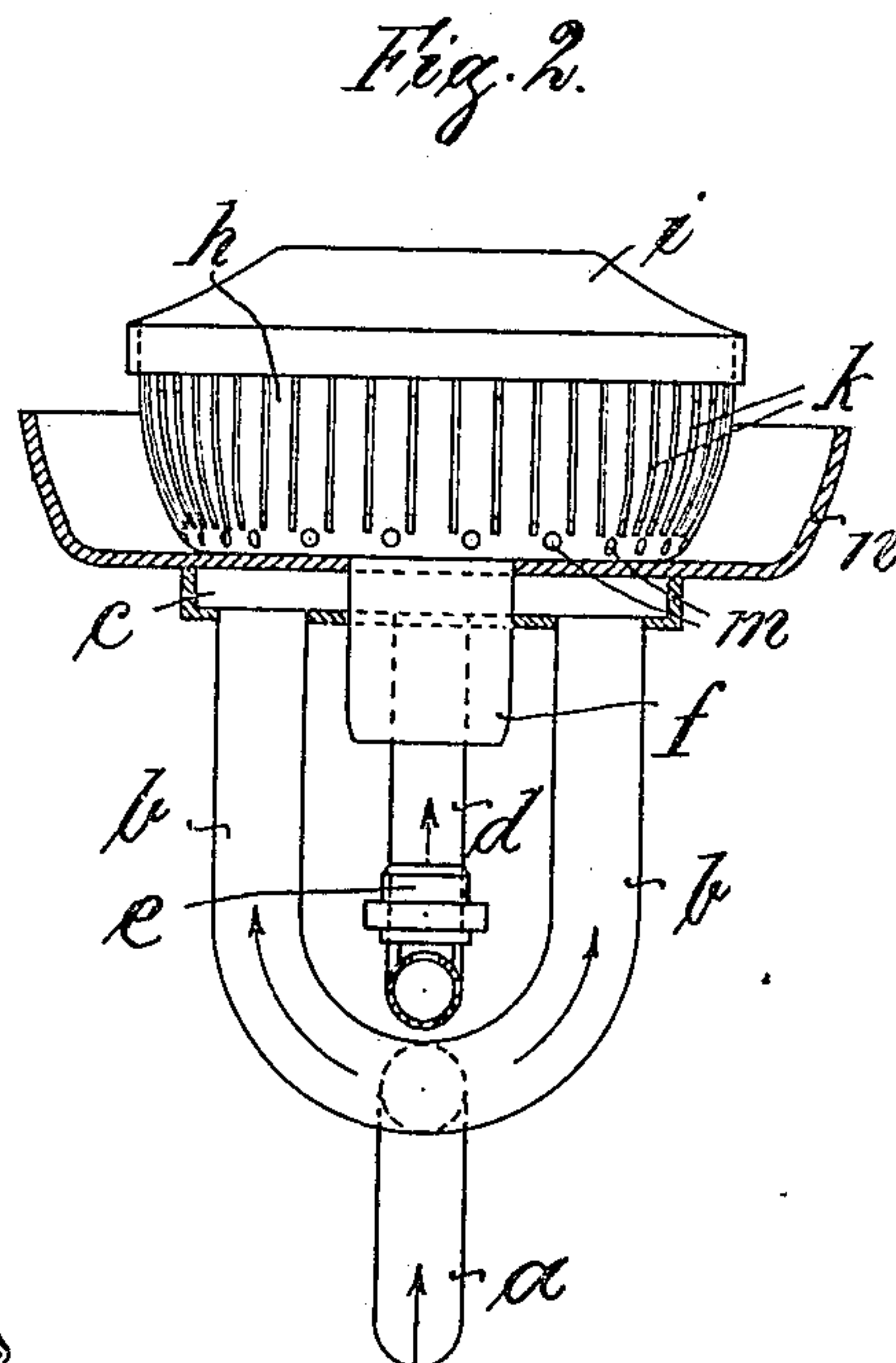
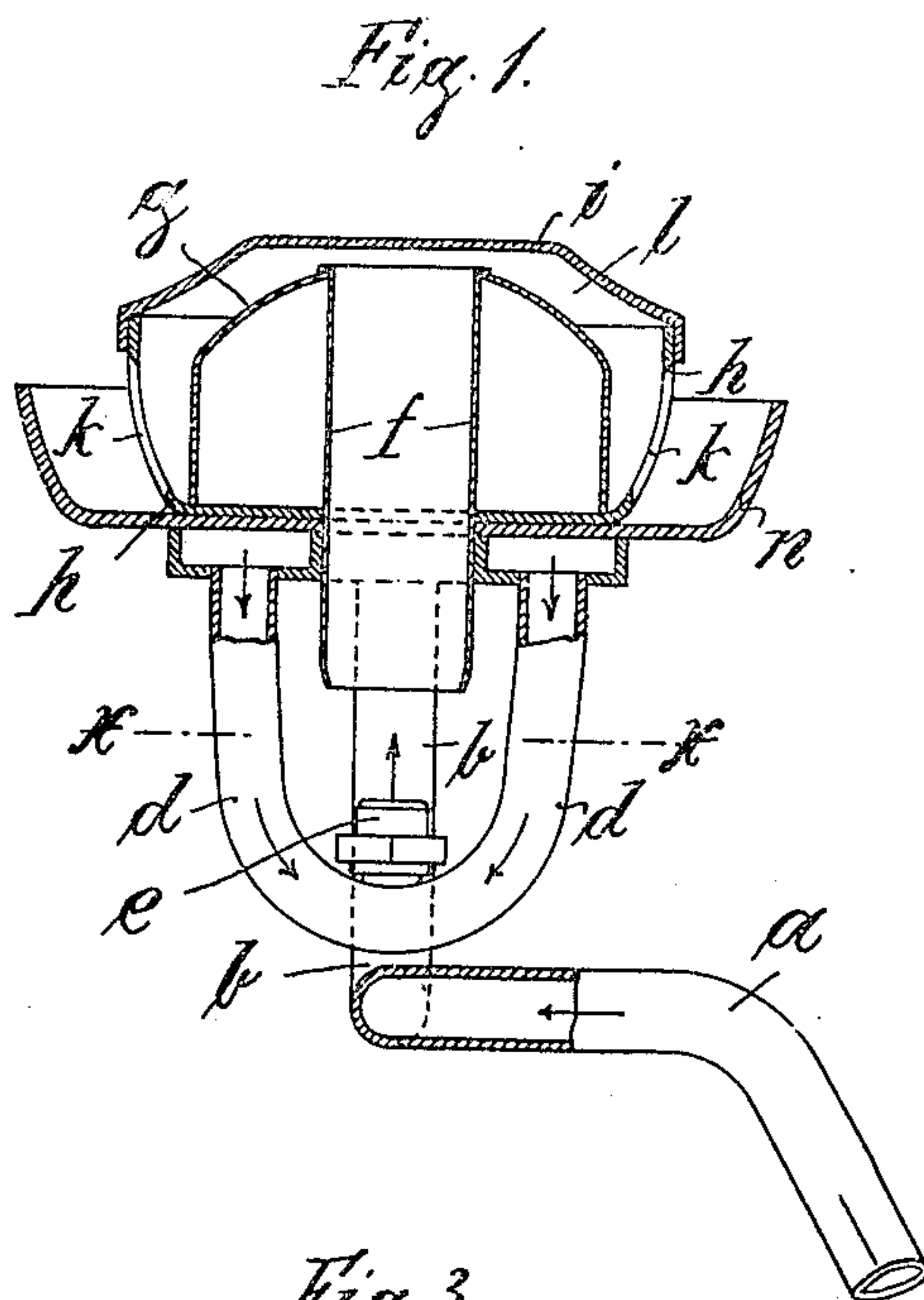


M. GRAETZ.
LIQUID FUEL HEATING BURNER.
APPLICATION FILED JAN. 6, 1908.

927,851.

Patented July 13, 1909.
2 SHEETS—SHEET 1.



Witnesses:
Arthur Scholz
Emil Hoyer

Inventor:
Max Graetz
by *Robert S. Phelps*
Attorney

M. GRAETZ.
LIQUID FUEL HEATING BURNER.
APPLICATION FILED JAN. 6, 1908.

927,851.

Patented July 13, 1909.
2 SHEETS—SHEET 2.

Fig. 5.

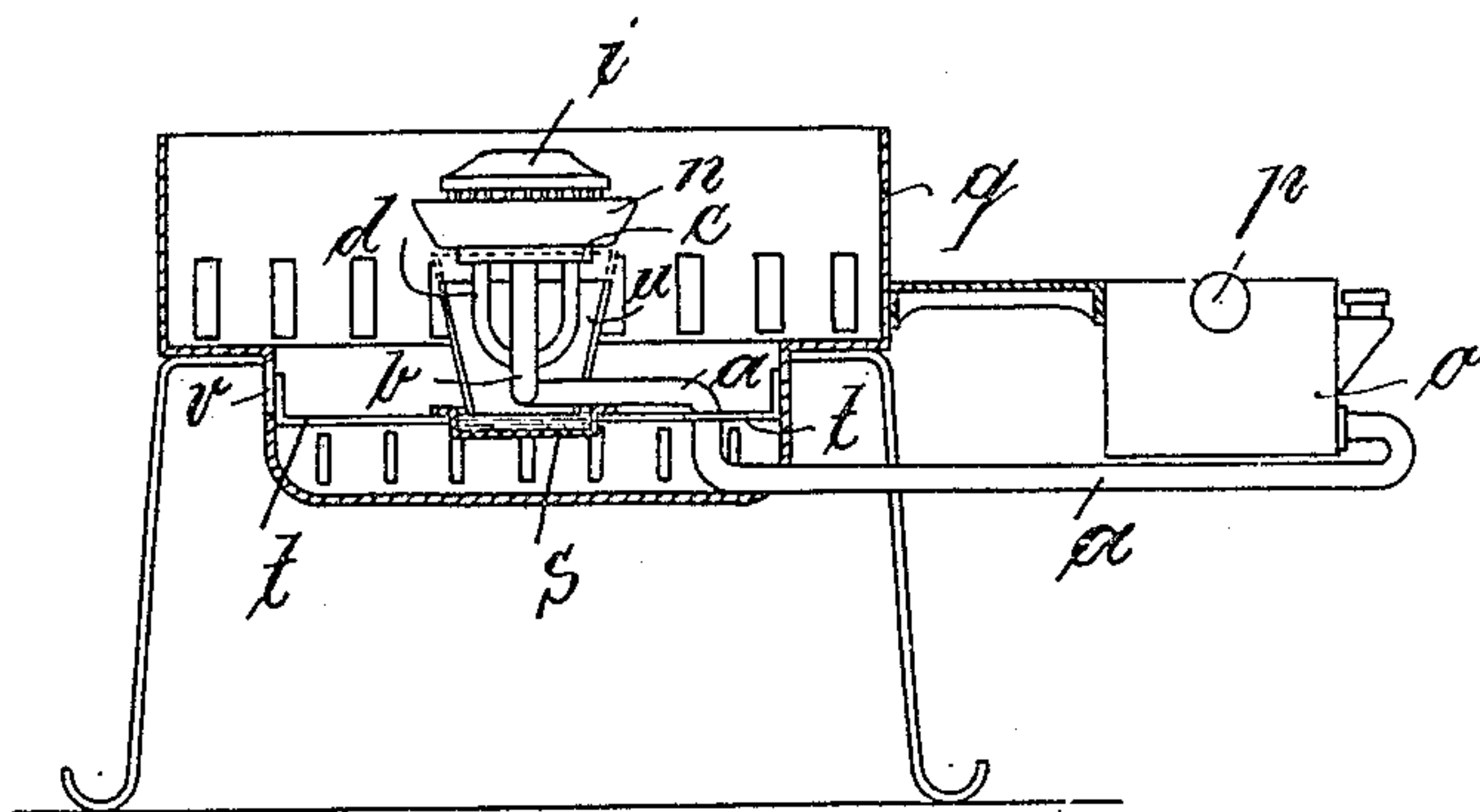
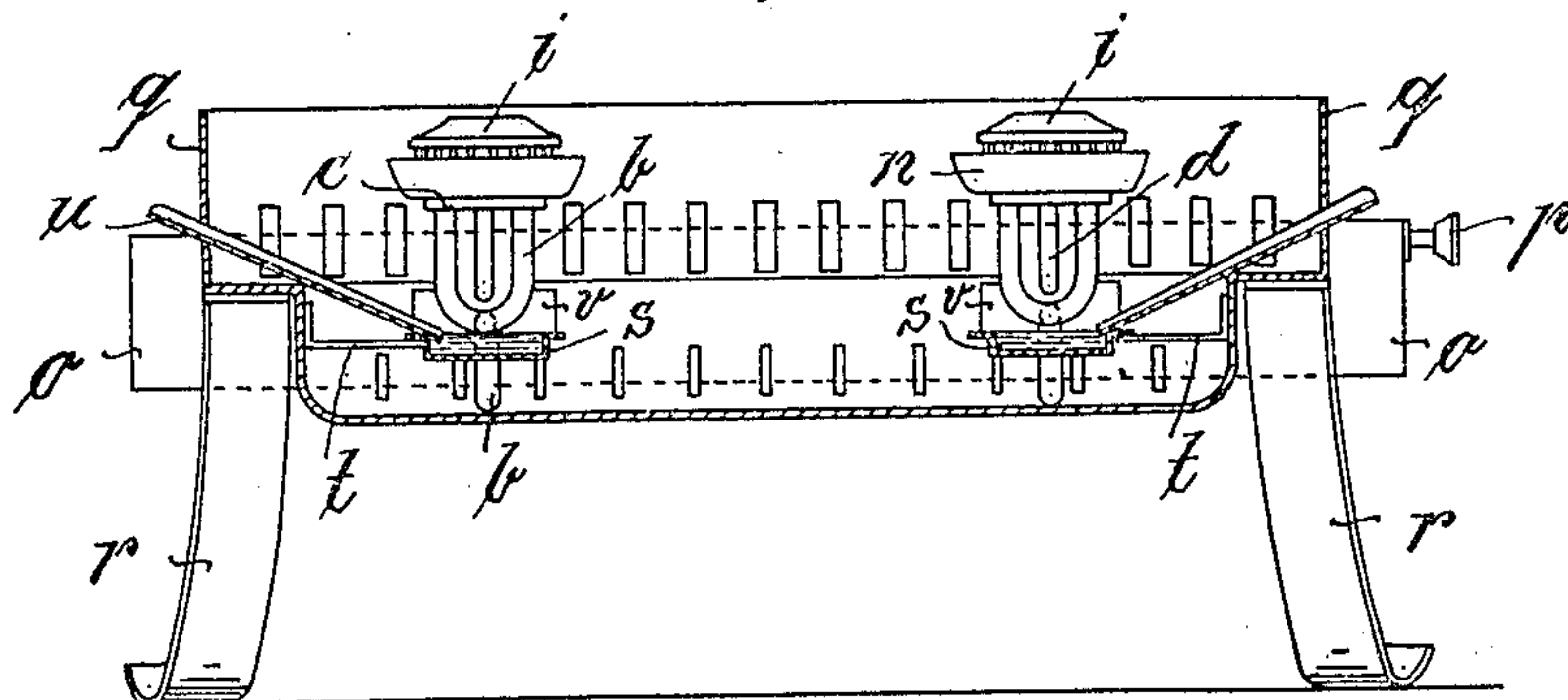


Fig. 6.



Witnesses:
Arthur Scholz
Emil Kayser

Inventor:
Max Graetz
by Robert Schaefer
Attorney

UNITED STATES PATENT OFFICE.

MAX GRAETZ, OF BERLIN, GERMANY.

LIQUID-FUEL-HEATING BURNER.

No. 927,851.

Specification of Letters Patent.

Patented July 13, 1909.

Application filed January 6, 1908. Serial No. 409,492.

To all whom it may concern:

Be it known that I, MAX GRAETZ, a subject of the King of Prussia, German Emperor, and a resident of 92, 93 Elsenstrasse, Berlin, Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Liquid-Fuel-Heating Burners, of which the following is an exact specification.

This invention relates to the burners used in petroleum and like heating stoves and the object of the present invention is to provide an improved form of burner in which the flame spreads well outward in ellipsoidal form and at the same time improved mixing of the vapor and air is obtained. This result is secured by arranging the main gas and vapor outlets from the burner head in the form of narrow slits arranged in a horizontal zone and extending in their length from the upper to the lower parallel of the zone. The arrangement of the gasifying chamber and the method of heating this chamber is substantially the same as has hitherto been employed.

Referring now to the accompanying drawings, Figure 1 is a sectional side view of the burner, Fig. 2 is a side view partially sectioned. Fig. 3 is a section on line X—X of Fig. 1. Fig. 4 is a detail view of the burner head alone, showing modifications in the arrangement of the main slits and the auxiliary flame outlets. Fig. 5 is a cross section of the whole stove arrangement. Fig. 6 is a longitudinal section of the same arrangement.

In the drawings *a* represents the main oil supply pipe connecting the oil reservoir with the gasifying chamber. At the end of this supply pipe a U-shaped pipe *b* is attached at right angles. This pipe *b* leads into the bottom of the gasifying chamber *c*. From the bottom of this gasifier another U-shaped pipe *d* extends downward and is disposed at right angles to the oil pipe *b*. This pipe *d* serves the purpose of conducting the gases produced in the gasifying chamber *c* to the nozzle *e*, which is attached to said pipe in the bend of the U. A short distance above the outlet opening of said nozzle the mixing tube *f* is located. This tube is open at the bottom, so that, together with the gases ascending from the outlet of the nozzle, air streams in and mixes with said gases within said tube *f*. The mixing tube *f* extends into the burner head which is in its interior of dome shape. The mixing tube is attached to the inner wall *g* of this dome-shaped chamber which wall

also forms a protecting chamber around the mixing tube. The burner cap proper that is the outside wall of the dome-shaped chamber consists of cup-shaped side walls *h* and a closed upper part or cover *i*.

The lower part *h* of the burner head is provided with a number of vertically arranged narrow slits *k* through which the mixed gas and air pass into the region of combustion. These slits are arranged in a belt or zone around the chamber and their length extends from the upper to the lower parallel of this zone. Arranged in a line near the lower end of the slots, are the nozzle holes *m*. Through these holes issue separate small tongues of flame, and due to the downward inclination of the holes these tongues are directed against the gasifier chamber and upwardly dished flange *n* attached to the top of the gasifying chamber *c*. In Fig. 2 the auxiliary flame holes are shown arranged between the ends of the slits *k*. In Fig. 4 they are shown on the left hand side as arranged on the end of all the slits while at the right hand side holes *n* are only provided on alternate slits. The method of applying this improved burner to a cooking stove is shown in Figs. 5 and 6. In these figures *o* is an oil reservoir, to the bottom of which the main supply pipe *a* is connected. On top of the reservoir an air pump *p* is provided for forcing the supply of compressed air to the reservoir *o* in the usual manner.

The stove consists of the main frame *q* open on the top and resting upon the feet *r*. Within this frame one or several burners of the type described above are arranged, these burners being supplied from the reservoir. Below each burner head an open pan *s* is arranged attached to the main stove frame by means of brackets *t*. Into each pan a tray *u* disposed at an inclination and fastened to the upper stove frame *q* leads, which tray extends beyond and outside the frame, where it forms a lip. Through the tray liquid fuel such as alcohol for instance is poured into the open pan and this fuel is lighted before the burner is started. The whole tray and pan arrangement just described serves the purpose of preheating the oil in the gasifying chamber and the pipes next to it before the burner is started for the purpose of starting the action of the burner which thereafter proceeds automatically.

I claim:—

A petroleum burner for cooking and heat-

ing purposes, comprising a gasifying chamber to which liquid fuel is led, an upwardly
dished flange on said gasifier, a nozzle communicating with said gasifier, a mixing tube
5 into which said nozzle directs the oil-vapor,
a burner-head above said gasifier and comprising side-walls and a closed top plate, said
side walls having slits arranged at a short
distance apart, and nozzle holes arranged in

a ring near the lower ends of said slits to direct small tongues of flame against the gasifier and the upwardly dished flange. 10

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

MAX GRAETZ.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.