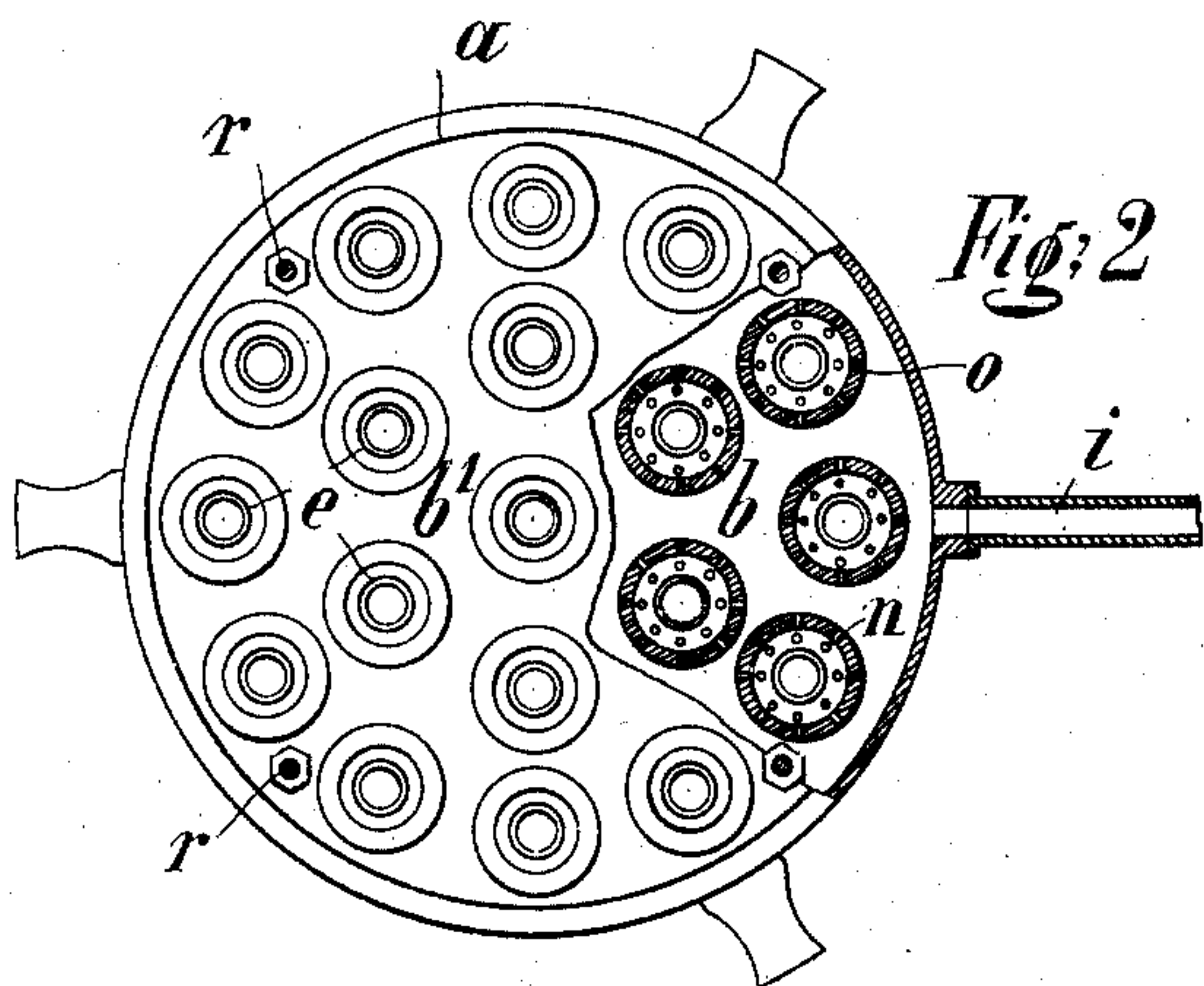
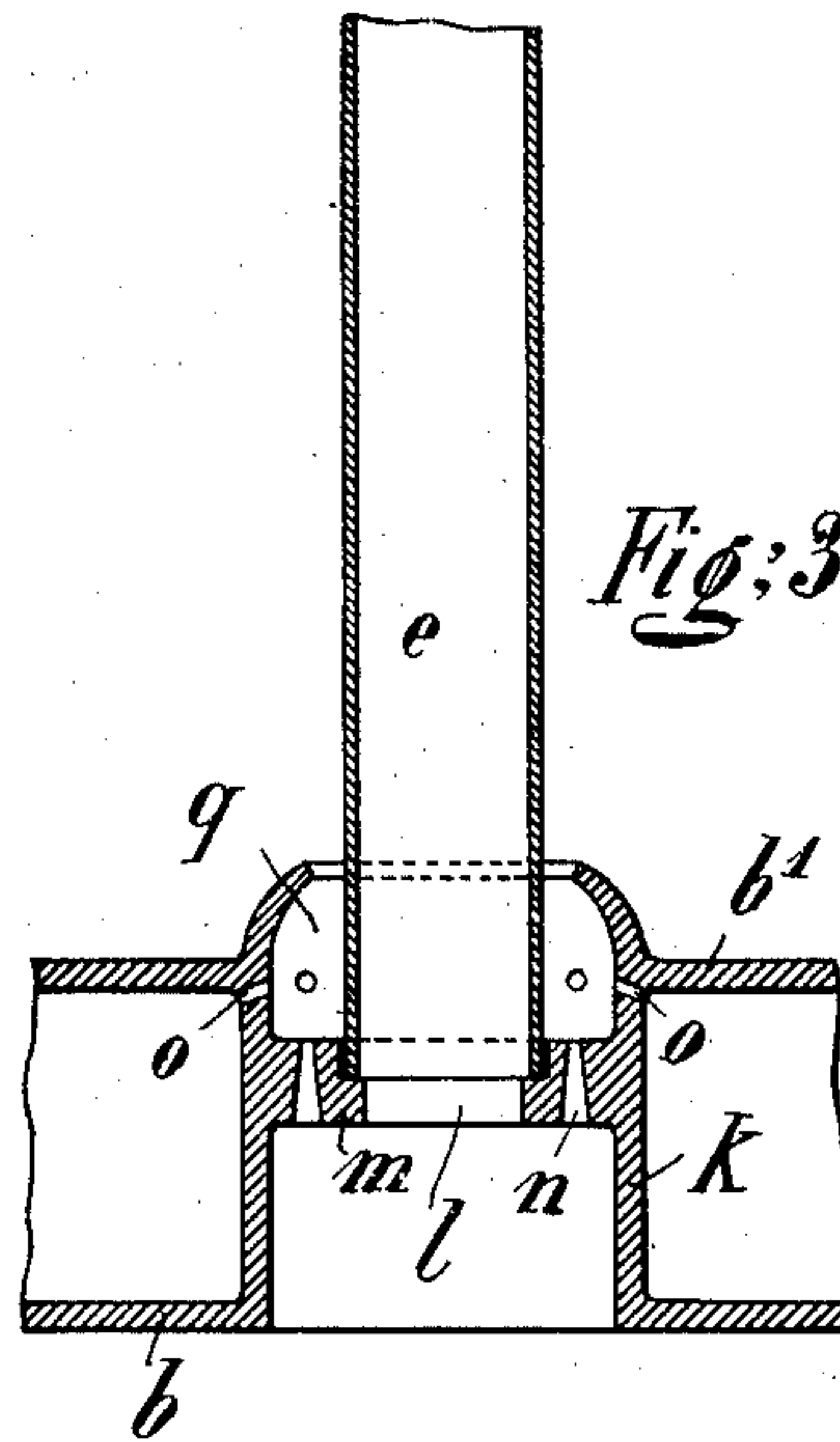
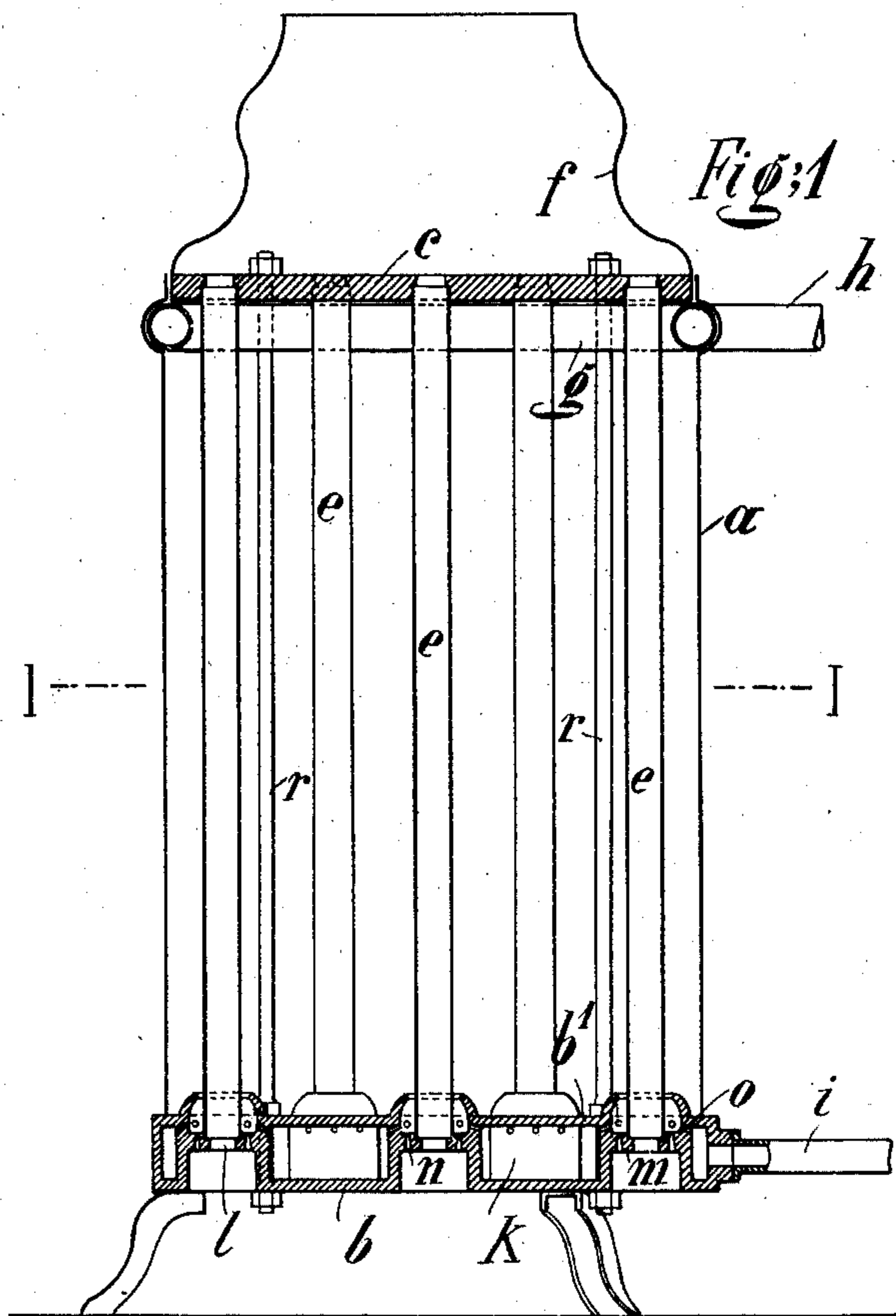


No. 736,860.

PATENTED AUG. 18, 1903.

E. MEININGHAUS.
GAS HEATING STOVE.
APPLICATION FILED MAY 4, 1903.

NO MODEL.



Witnesses;

074 Köning
Albert Hemming.

Inventor;

Edward Meinighaus
by Alfred Müller,
Att'y.

UNITED STATES PATENT OFFICE.

EDUARD MEININGHAUS, OF BARMEN, GERMANY, ASSIGNOR TO DEUTSCHE HEIZUNGS-INDUSTRIE MEININGHAUS BACHRODT & CO., OF BARMEN, PRUSSIA, GERMANY, A FIRM.

GAS HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 736,860, dated August 18, 1903.

Application filed May 4, 1903. Serial No. 155,482. (No model.)

To all whom it may concern:

Be it known that I, EDUARD MEININGHAUS, a citizen of the German Empire, residing at Barmen, in the Province of Rhenish Prussia and Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Gas Heating-Stoves, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an improved gas heating-stove with vertical circulating-tubes for the air and in which a complete combustion and a good economy of the gas burned is obtained by mixing the same in the moment of its burning with air, as is the case with the well-known Bunsen burner and by leading the air to be heated through the tubes, which are fixed in the lower part of the stove centrally to each separate burner. This arrangement in securing complete combustion of the gas at the same time causes the heating-gases to rise along the outside of the air-tubes, thereby giving up the greatest part of their heat.

On the accompanying drawings the new gas-stove is shown in a vertical section by Figure 1, and in a cross-section along line 1 1 by Fig. 2, while Fig. 3 shows in detail and in an enlarged scale the arrangement of a burner with the air-tube fixed therein.

The stove consists of a cylindrical jacket *a* of sheet metal, of the foot or bottom part *b* *b'*, of the cover *c*, and of the air-circulating pipes *e*, placed between the said bottom and cover, which parts are held together by any suitable means—say, for instance, bolts and nuts *r*—so as to form a compact closed casing. The air-tubes *e* are open at top and bottom, so as to allow the air to be heated to rise therein freely. Their upper ends reach into a dome *f*, crowning the casing, and from which the heated air may be carried to the room to be heated. The heating-gases escape by a perforated pipe *g*, placed below the cover *c*, and are carried into a chimney or in the open air by a connection *h*.

The bottom piece *b* *b'* consists of a dish-shaped hollow plate or gas-chamber. By a pipe *i* it is connected to the gas-main. The air-pipes are fixed thereon in short cylindrical

pieces *k*, the diameter of which is a little wider than the exterior diameter of the air-tubes *e*. The cylindrical pieces *k* are divided by diaphragms *m*, into which are fitted the air-pipes and which possess a central opening *l*. Outside of this opening *l* are arranged small holes *n*, and above the diaphragm small holes *o* are bored into the circumference of the cylindrical pieces *k*. The part of these cylinders rising above the upper plate *b'* of the gas-chamber is made conical, so as to allow only a narrow passage between its edges and the tubes *e*. A nearly-closed hollow space *q* is thus formed around the tube *e*, into which the gas enters by the holes *o*. The air entering through the holes *n* and the gas entering through the holes *o* are therefore mixed in the space *q* and both will burn without a bright flame and without forming soot, and the heating-gases will rise along the air-pipes, thereby giving up their heat to them and the air therein, respectively. The combustion of the gas thus takes place in a completely-closed space, and no evil smell will be observed, as is mostly the case with gas-stoves with open burners, even when it should happen that a gas-cock is not completely closed, and gas so escaping is carried away directly by the pipe *g*, and so the danger of an explosion is also avoided.

Instead of ordinary gas, liquid fuel, such as spirit and others easily volatilizing, may be used.

Having thus explained my invention, I declare that what I claim is—

1. In a gas heating-stove in combination with a jacket *a* a hollow bottom piece *b* *b'* forming a gas-chamber, a top covering-piece *c*, open-air tubes *e* fixed between said top and bottom pieces *b* *b'* and *c*, bolts *r* holding the parts *a*, *b* *b'*, *c* and *e* together, a gas-inlet pipe *i* connected to the gas-chamber *b* *b'*, a perforated pipe *g* below the top cover *c* and a pipe *h* connected to said pipe *g* for the escape of the heating-gases, a dome *f* for collecting the heated air above the cover *c*, the whole as described and illustrated and for the purpose set forth.

2. In a gas heating-stove the combination of a jacket *a*, a dome *f* on top of said jacket,

a cover *c*, a bottom piece *b b'*, tubes *e* fitted between said pieces *b b'* and *c*, in combination with open cylindrical parts *k* of larger diameter than the pipes *e* and cast between the top
5 plate *b'* and the bottom plate *b* of said bottom piece, diaphragms *m* in said cylindrical pieces for fixing therein the pipes *e*, air-holes *n* in said diaphragms, holes *o* in the circumference of the cylinders *k* above the diaphragms, a hol-
10 low space *q* between the tube *e*, the upper part

of *k* and the diaphragm and forming a mixing-chamber for gas and air entering therein, the whole as described and illustrated and for the purpose set forth.

In testimony whereof I have affixed my sig- 15
nature in presence of two witnesses.

EDUARD MEININGHAUS.

Witnesses:

OTTO KÖNIG,

ALBERT HEMSING.