No. 641,368.

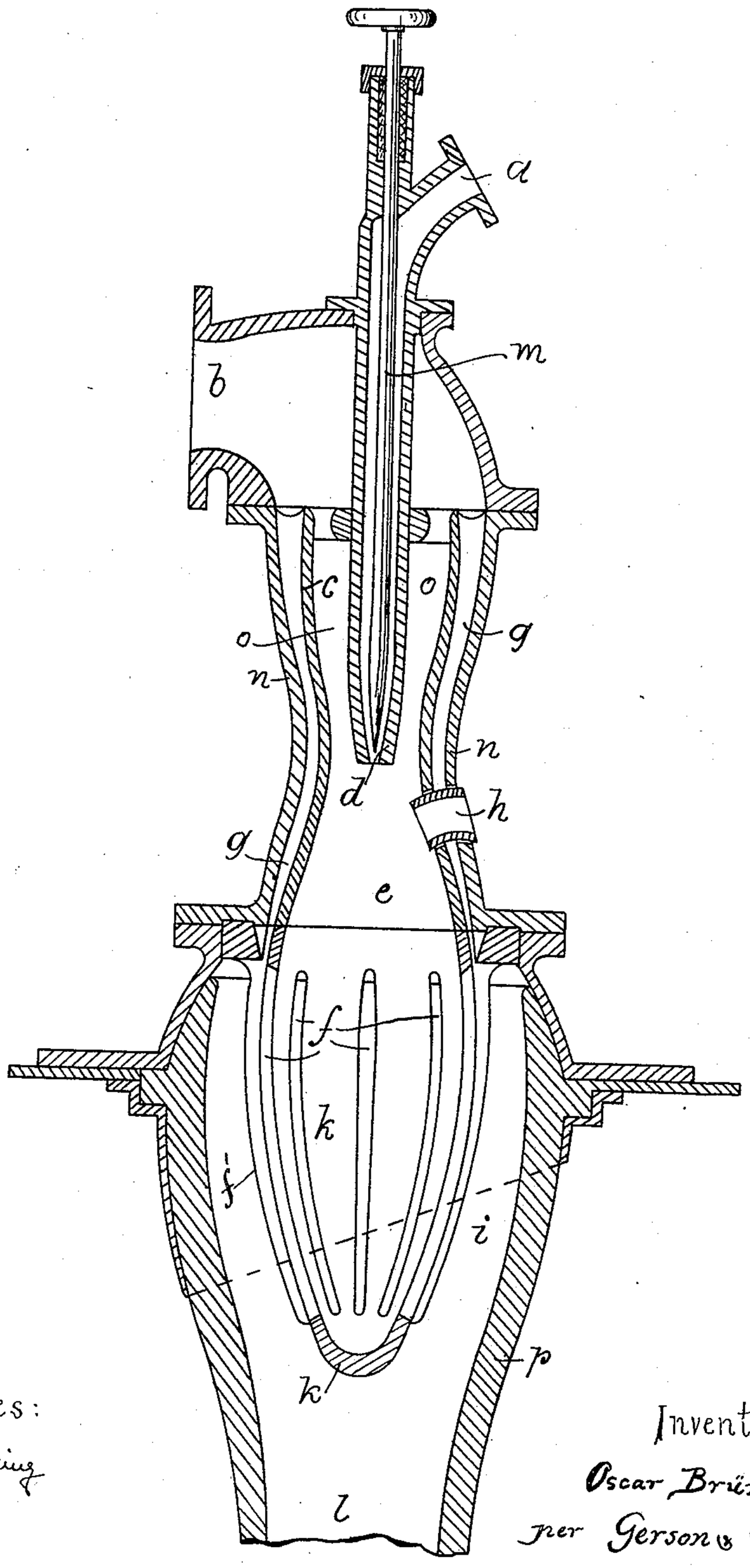
Patented Jan. 16, 1900.

# O. BRÜNLER.

## BURNER.

(Application filed Oct. 31, 1898.)

(No Model.)




Witnesses:

Paul G. Schilling

Paul Gilbert

Inventor:

Oscar Brünler

per Gerson & Sachse

his Attorneys.

# UNITED STATES PATENT OFFICE.

OSCAR BRÜNLER, OF EILENBURG, GERMANY.

## BURNER.

SPECIFICATION forming part of Letters Patent No. 641,368, dated January 16, 1900.

Application filed October 31, 1898. Serial No. 695,055. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR BRÜNLER, a subject of the Emperor of Germany, and a resident of Eilenburg, Province of Saxony, German Empire, have invented certain new and useful Improvements in Burners, of which the following is a specification.

My invention has reference to a burner which will maintain its function even in compartments which contain no atmospherical air. Over similar arrangements my improved burner has the great advantage that if gas is employed as fuel the air need not be pressed in, the burner sucking in the air necessary for perfect combustion.

In order to make my invention more easily understood, I have illustrated it on the accompanying drawing, which shows a sectional elevation of my improved burner.

*a* is the feed-pipe for the liquid, gaseous, or pulverized fuel.

*b* is the air-introduction pipe.

The fuel-feed pipe *a* runs out into a nozzle *d*, the opening of which can be closed more or less, according to the amount of fuel to pass out of it, by the cylindrical rod *m* being raised or lowered within the said pipe *a* and nozzle *d*. The nozzle *d* is surrounded by a hollow somewhat cone-shaped casing or mantle *c*, and this latter is surrounded by the mantle *n*. Between the nozzle and the mantle *c* and between this latter and the outer mantle *n* annular spaces *o* and *g*, respectively, are formed, through which the air entering through pipe *b* can freely pass. The casing or mantle *c* runs out into a bulb-shaped casing *k*, being provided with a number of elongated slots *f* and ribs *f'*. The annular space *i*, formed between this casing and the outer wall *p* of the apparatus, is in communication with the annular space *g*. At the constricted portion of the mantle *c* a short piece of pipe *h* is provided, giving access from without to the interior of the igniting-chamber *e*.

For starting ignition the flame of a soldering-lamp or a gas-blast is introduced through the pipe *h* into the chamber *e*, with the effect of heating the burner and setting up ignition. After the burner is heated to the desired degree the lamp or gas flame is removed and the pipe *h* is to be plugged up. The burner will now steadily keep up ignition on its own accord.

If liquid or pulverized fuel is made use of, pressure-air must be introduced through pipe *b*. Part of the air entering through pipe *b* may take its course through the annular space *g* in order to attain the highest temperature in the annular space *i* and not within the chamber *e*. A column of flame will be projected out of the opening *l* into the compartment not containing or having at least no direct communication with the atmosphere.

What I claim, and desire to secure by Letters Patent, is—

In a burner for gaseous, liquid or pulverized fuel the combination of the fuel-nozzle *d*, a casing *c* surrounding said nozzle and extending beyond the same, said casing terminating in a bulb-shaped enlargement *k*, having slots in the walls thereof, a casing *n* surrounding the casing *c* and enlargement *k* and an air-inlet *b* adapted to supply air to the casing *c* and to the space between the casing *c* and the casing *n*, substantially as and for the purpose set forth.

OSCAR BRÜNLER.

Witnesses:

RUDOLPH FRICKE,

B. H. WARNER, Jr.