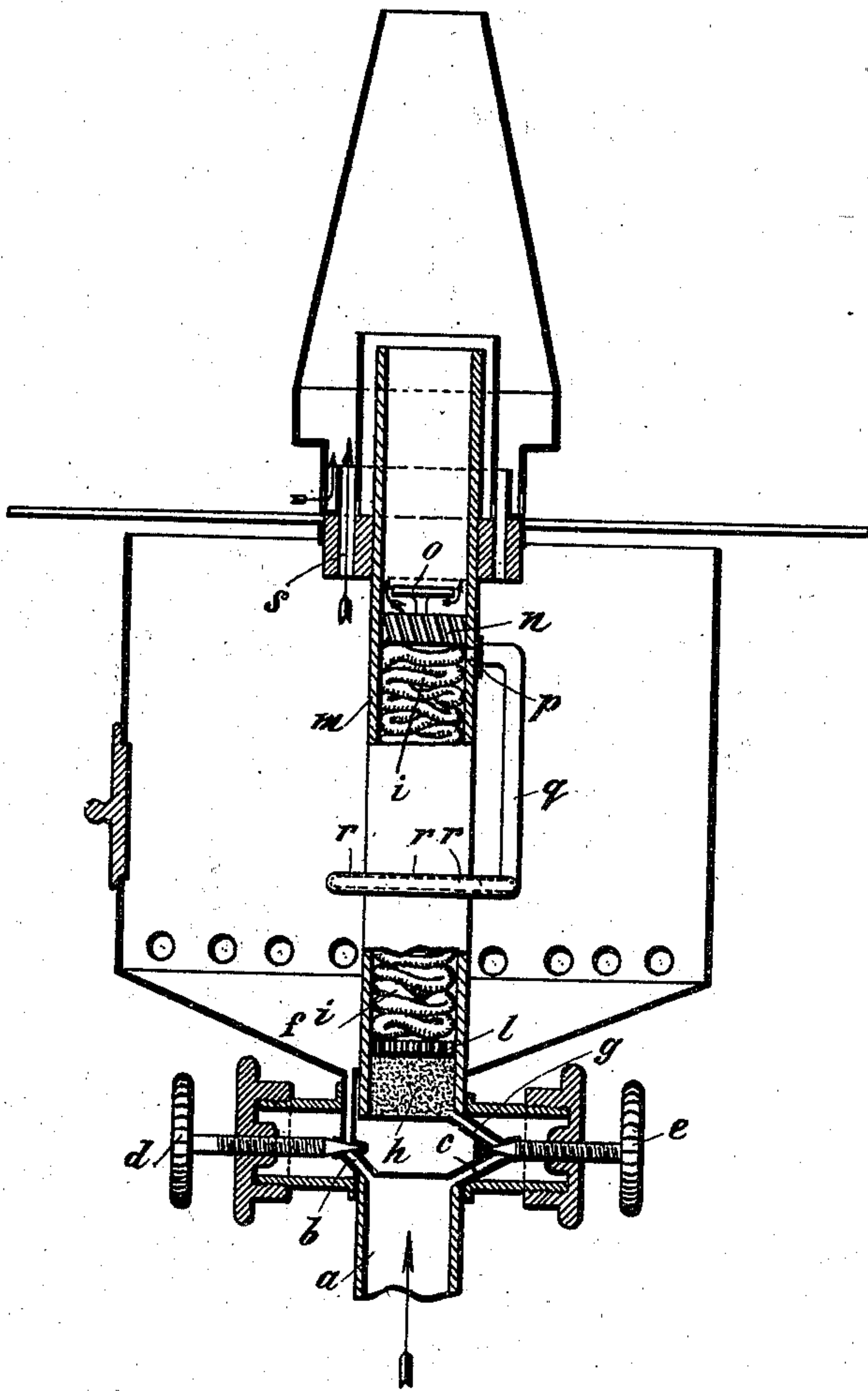


(No Model.)

A. RICKS.
INCANDESCENT LAMP BURNER.

No. 560,649.

Patented May 26, 1896.



Witnesses:-

Frank S. Ober
Harry Bailey

Inventor:

Albert Ricks
by Mrs. Rosebaum
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UNITED STATES PATENT OFFICE.

ALBERT RICKS, OF BERLIN, GERMANY.

INCANDESCENT-LAMP BURNER.

SPECIFICATION forming part of Letters Patent No. 560,649, dated May 26, 1896.

Application filed January 16, 1895. Serial No. 535,122. (No model.)

To all whom it may concern:

Be it known that I, ALBERT RICKS, manufacturer, of 75 Kochstrasse, Berlin, S. W., in the Empire of Germany, have invented an Incandescent-Lamp Burner, of which the following is a specification, reference being had herein to the accompanying drawing.

My invention relates to incandescent burners for lighting. In spirit-burners it has heretofore been impracticable to use an incandescent body, as this body is injuriously affected by the water contained in the rising spirit-vapors. To remedy this—for instance, by the use of spirit free from water—would be too expensive, apart from the circumstance that it is extremely difficult to procure pure spirit in large quantities.

The object of my said invention consists in rendering the employment of this incandescent body practicable by drying and intermingling, before its combustion, the finely-divided fuel which is continually conducted to the burner and vaporized at the same time.

In the accompanying drawing such a spirit-vapor incandescent burner is represented in section. The spirit passes through an admission-pipe *a* under pressure into the burner. From this admission-pipe extend two branch channels *b* and *c*, which are closed by valves *d* and *e* in a suitable manner. The valve *d* permits the access of spirit to the basin *f*, wherein the preliminary heating and igniting flame is produced. By opening the valve *e* the spirit passes from the channel *c* into the admission-channel *g*, which leads to a chamber *h*. Above this chamber *h* is a second chamber *i*. The two chambers are separated from each other by a perforated partition *l*. In the chamber *h* is a rather tightly-packed material, such as cotton, which readily absorbs liquid, and in the chamber *i* is a wick for conducting the gases or vapors and distributing the heat, this wick being inserted loosely in windings and consisting of any desired material, such as asbestos. The chamber *i* is closed above by a partition *n*, provided with inclined perforations, and above this partition is arranged a baffle-plate *o*. At *p* is provided in the cylinder *m* an outlet-orifice, through which the developed gases or vapors enter a suitably-bent pipe *q*, are con-

ducted around the heated cylinder, and pass upward through holes *r* to form the heating-flame. Upon the said cylinder *m* is arranged an incandescent burner of any suitable construction, which may possess a channel *s* for the purpose of automatically igniting the gas or vapor. If now the burner is to be set in action, the valve *e* is first opened. The spirit consequently passes through the channels *c* and *g* into the chamber *h*, and the cotton contained therein absorbs spirit. Then the valve *d* is opened. The spirit rises through the channel *b* into the basin *f* as it is under pressure and is here lighted. The consequence is that the upper part of the chamber *i* will be energetically heated. The spirit absorbed by the wick in the chamber *h* and conducted farther begins even on its entrance into the chamber *i* to be slowly vaporized by the flames at *f* and afterward at *r*. The particles of liquid carried along by the vapors are for the most part retained by the wick of the chamber *i* and vaporized, so that almost a dry gas or vapor will be obtained. This effect is completed by the passage through the oblique perforations in the partition *n* and by the gases or vapors impinging against the baffle-plate *o*. By these devices I effect at the same time an intimate intermingling of the particles of gas or vapor. Accordingly the chamber *h* serves for the absorption and transmission, the chamber *i* for the distribution and drying, and the perforations at *n* and baffle-plate *o* for the intermingling, of the fuel. If, in lieu of the two chambers, use is made of an equally long chamber containing a wick firmly packed into the same, it is impossible to vaporize the fuel soon collecting throughout the length of the wick. If, however, the same chamber is filled up with a loose wick, only a portion of the gases or vapors will go to the flame, while the remainder will pass back through the pipe for the fuel. It is also pointed out that in case the flame at the burner does not consume the gas as fast as it is generated in chamber *i* the fact will be noticed at once by the manner in which the flame burns, and the quantity of fluid entering at valve *e* may be regulated accordingly; but any excess of gas in chamber *i* cannot flow downward into the reservoir and there

cause an explosion, because it will be prevented from doing so by the tight packing in chamber *h*.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a vapor-burner a passage divided into two compartments through which the material to be burned successively passes one of said compartments nearer the reservoir containing a tightly-packed wick, and the other containing a comparatively loosely-packed wick in combination with means independent of the main flame for vaporizing the burning material as it is required at the burner, and acting upon the burning material in the compartment containing the loose wick.

2. In a vapor-burner a passage divided into two compartments through which the material to be burned successively passes one of said compartments nearer the reservoir containing a tightly-packed wick, and the other containing a comparatively loosely-packed wick in combination with means independent of the main flame for vaporizing the burning material as it is required at the burner, and acting upon the material in the compartment containing the loose wick, and a valve controlling the flow of burning material to the chamber containing the tightly-packed wick.

3. In an incandescent-lamp burner, a tube

divided into two chambers, one above the other, the one more distant from the flame containing a tightly-packed wick and the other containing a wick more loosely packed, a lateral gas-passage through the tube at a point above the loose wick, and a burner surrounding the upper chamber and fed with gas from said lateral passage.

4. In an incandescent-lamp burner, the combination of a tube provided with two chambers each containing a wick and communicating with an oil-reservoir through a passage *c*, *g*, and a basin *f*, surrounding the wick-chambers and communicating with the oil-reservoir through a separate passage *b*, substantially as described.

5. The combination of the tube *m*, provided with perforated diaphragm *l*, and diaphragm *n* arranged next to the flame and with inclined perforations, wicks packed into the chambers formed by the diaphragms and a baffle-plate *o* arranged above diaphragm *n*, substantially as described.

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

ALBERT RICKS.

Witnesses:

WILHELM SCHWICHTHAL,
JOHN B. JACKSON.