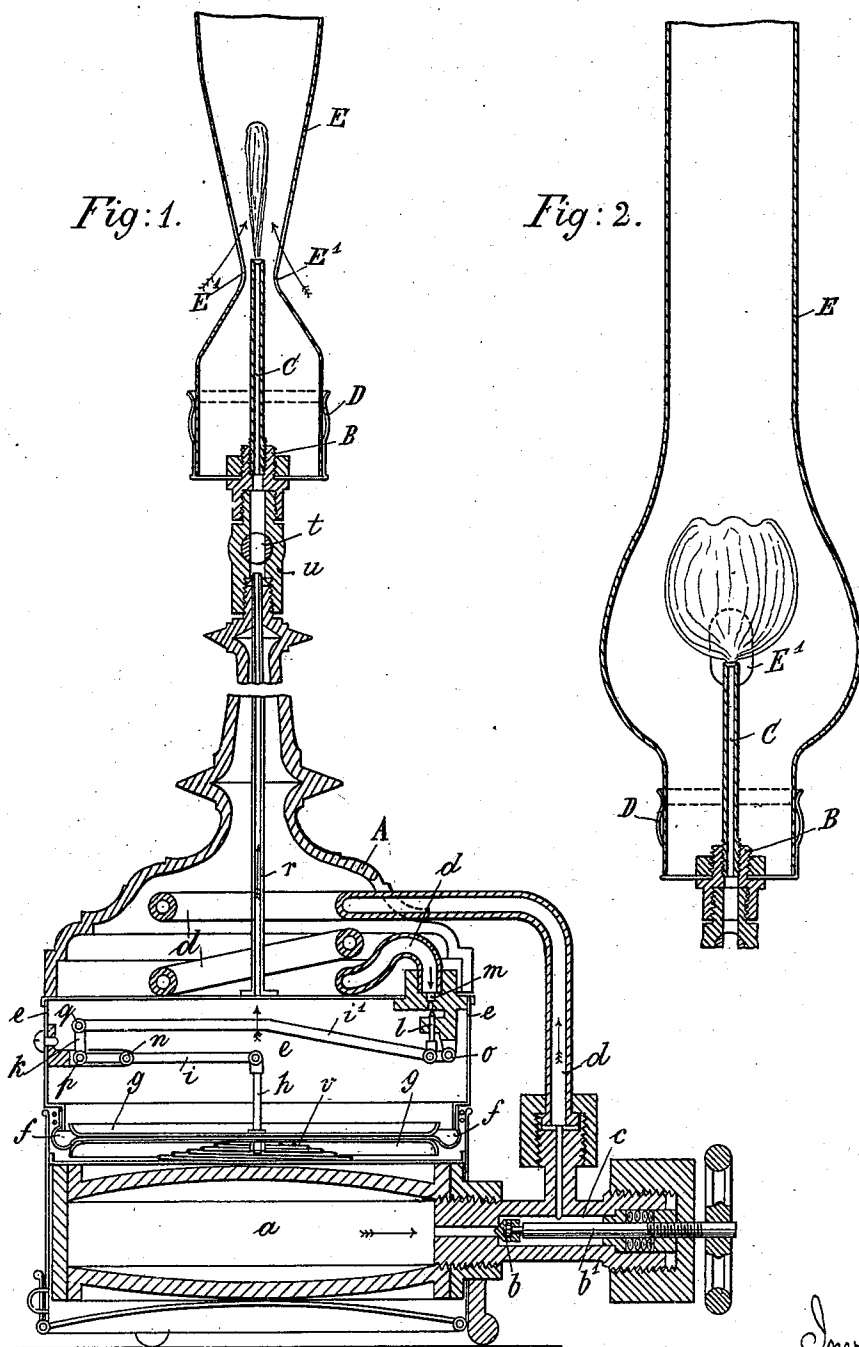


(No Model.)

A. H. J. SCHÜLKE.
LAMP.

No. 577,989.

Patented Mar. 2, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

AUGUST HEINRICH JULIUS SCHÜLKE, OF BERLIN, GERMANY.

LAMP.

SPECIFICATION forming part of Letters Patent No. 577,989, dated March 2, 1897.

Application filed March 21, 1896. Serial No. 584,319. (No model.)

To all whom it may concern:

Be it known that I, AUGUST HEINRICH JULIUS SCHÜLKE, engineer, a subject of the Emperor of Germany, and a resident of No. 94 Leipzigerstrasse, Berlin, W., in the Empire of Germany, have invented new and useful Improvements in Lamps, of which the following is a full, clear, and exact description.

This invention relates to a lamp fed by heavy hydrocarbons which are stored under high pressure in a chamber in the lamp, or which are passed into the latter at a suitably-reduced pressure, and also embodies an arrangement for feeding the hydrocarbons under certain pressure to the burner for maintaining a regular flame, the latter being caused to spread out by means of two currents of air striking each other in the flame and thus effecting a perfect combustion of the combustibile.

I will now describe my invention with reference to the accompanying drawings, in which—

Figure 1 is a vertical section of a lamp provided with a compression-chamber for containing the hydrocarbon under high pressure and having a perforated chimney for admitting air to the flame. Fig. 2 is a section taken at right angles to Fig. 1 of the burner and chimney.

The chamber *a* containing the hydrocarbon under high pressure is, as shown in the drawings, arranged in the bottom of the lamp. The outlet from the chamber *a* is controlled by a valve *b*, the latter being operated in the casing *c* by a spindle *b'*, provided outside with a wheel or handle. A pipe *d* is suitably screwed onto the casing *c* and after entering the upper part *A* of the lamp winds spirally within same and is thus flexible.

Between the part *A* and chamber *a* is arranged a readily-detachable pressure-regulating receptacle *e*, the bottom of which is formed by a diaphragm *f*, made of any suitable flexible material, such bottom being strengthened by a plate or plates *g*, arranged on one or both sides of same.

A spring *v*, the tension of which is made to accord with the required pressure of gas, is arranged between the diaphragm *f* and the top of compression-chamber *E*, and, in order

to equalize the pressure as far as possible, is made very elastic.

In the center of the diaphragm *f* is secured a short rod *h*, to the top of which is linked a double-armed lever *i*, turning on a pivot *n* of a bracket secured to the walls of receptacle *e*. To the second arm at *p* is linked a short arm *k*, and to the latter the long single-armed lever *i'*, which latter turns on pivot *o*. A valve *l*, attached to the lever *i'*, opens and closes the inlet *m* for the hydrocarbon passing through the tube *d*, according as the pressure of the hydrocarbon in the receptacle *e* is greater or less than that exerted by the spring *v* on the diaphragm *f*. The weights of the levers in the receptacle *e* and of the diaphragm *f* are so counterbalanced that an equal pressure is maintained in the receptacle *e* even when the lamp is moved or shook about. The hydrocarbon thus maintained at a constant pressure in the receptacle *e* is fed to the burner through a tube *r* in the top of the receptacle.

The lamp is preferably put out by closing the valve *b* of chamber *a*, the pressure in the receptacle *e* being thereby reduced to the normal atmospheric pressure. A cock *t* may also be arranged in the burner-casing *u* to admit of the light being turned out or lowered at will.

The burner comprises the bored part *B*, screwed onto the casing *u* and supporting the burner-tube *C* and closed gallery *D* for the chimney *E*. The latter is flattened near the top of the burner-tube *C* and is provided with openings *E'*, through which the air sucked in impinges against both sides of the flame and thus causes same to spread in the manner shown in Fig. 2. The combustion of the hydrocarbon is thus perfect in every respect.

I prefer to use in my lamp acetylene in a compressed state; but I do not wish to limit myself to this.

Having now fully described and ascertained the nature of this invention, I declare that what I claim, and wish to secure by Letters Patent, is—

1. In combination in a lamp, a chamber *a* in the bottom of the lamp, an upper part *A*, the pipe *d* leading from the chamber *a* and into the upper casing *A*, the pressure-cham-

ber *e* interposed between the lower chamber
a and the upper part A, the diaphragm and
valve in said chamber *e* with lever connec-
tions between them, the burner and the pipe
5 *r* extending from the chamber *e* upwardly
through the upper part A, substantially as
described.

2. In combination in a lamp, a chamber *a*
in the lower part thereof, the upper part A,
10 the pressure-chamber *e* between the lower
chamber and the upper part, the flexible tube
extending from the chamber *a* and coiled
within the upper part A, the diaphragm and

valve mechanism in the pressure-chamber *e*,
a valve controlling the pipe *d*, the burner and 15
the pipe leading upwardly from the pressure-
chamber *e* to the burner, substantially as de-
scribed.

In witness whereof I have hereunto signed
my name in the presence of two subscribing 20
witnesses.

AUGUST HEINRICH JULIUS SCHÜLKE.

Witnesses:

F. KOLLNER,
W. HAUPT.