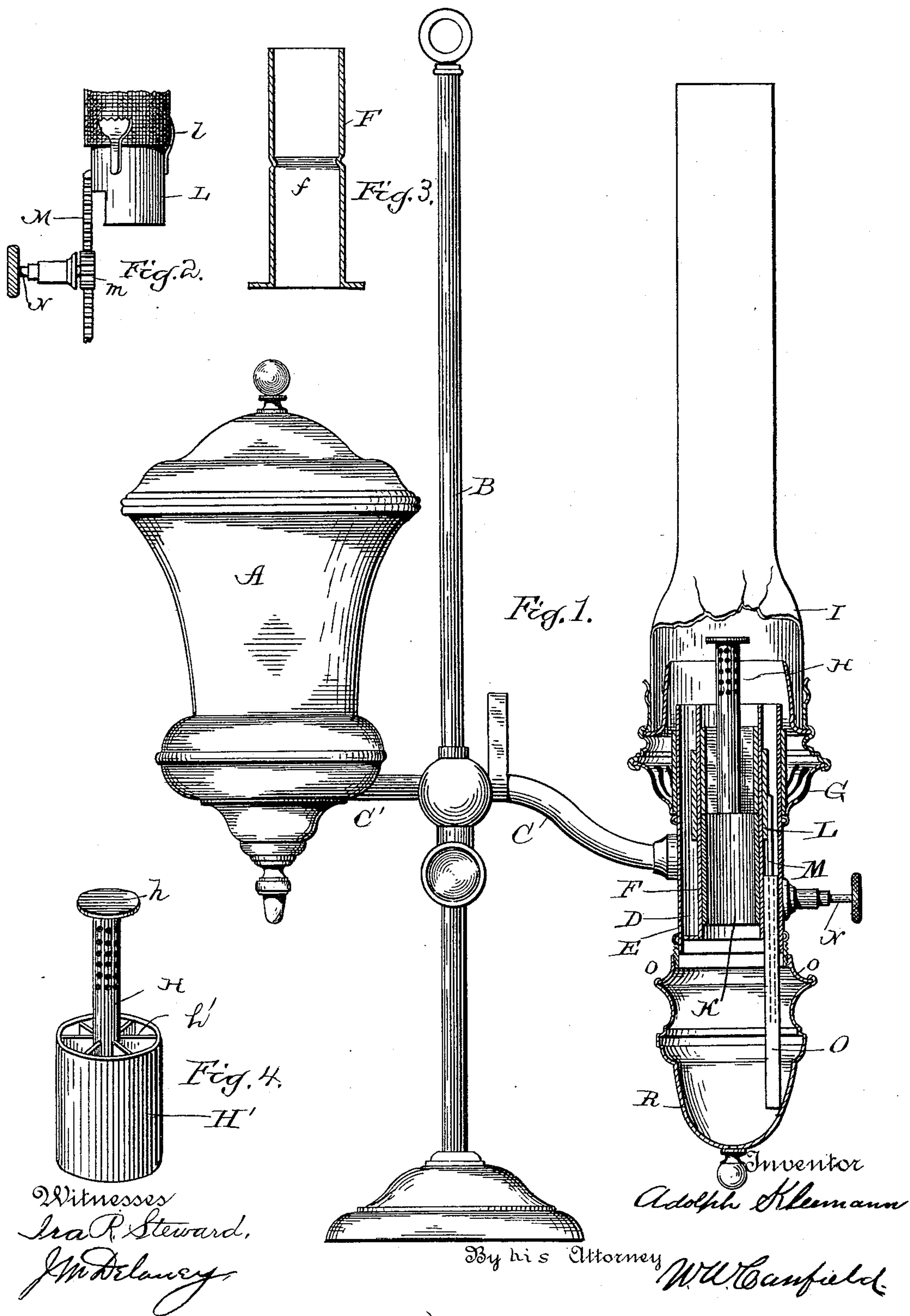


(No Model.)

A. KLEEMANN.
STUDENT LAMP.

No. 405,740.

Patented June 25, 1889.



UNITED STATES PATENT OFFICE.

ADOLPH KLEEMANN, OF ERFURT, GERMANY, ASSIGNOR TO HINRICHS & CO., OF NEW YORK, N. Y.

STUDENT-LAMP.

SPECIFICATION forming part of Letters Patent No. 405,740, dated June 25, 1889.

Application filed November 23, 1888. Serial No. 291,642. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH KLEEMANN, a citizen of the German Empire, and a resident of Erfurt, Germany, have invented certain new and useful Improvements in Student-Lamps, of which the following is a specification.

My invention is an improvement in what are known as student or independent-reservoir lamps; and it consists in the construction, arrangement, and combination of parts disclosed in the following specification, of which the accompanying drawings form a part, and in which similar letters of reference indicate like or equivalent parts wherever found throughout the several views.

Figure 1 shows in elevation a student-lamp, the burner portion being shown in central vertical section; and Figs. 2, 3, and 4 represent details of construction.

Referring to Fig. 1, A represents the reservoir, B the standard or support, and C the tube which connects the reservoir with the oil-chamber D of the burner. The burner is of the Argand type, and in general form and construction is substantially the same as other burners of this class. E is the outer tube, and F the inner or central air-tube, and between the tubes is formed the oil and wick chamber D. Mounted upon the outer tube E is a perforated air-distributor or basket, which is provided with a chimney gallery or rest for the chimney I and the usual cone or deflector H. Within the central tube F is placed an air-distributor and flame-spreader, which is held in place by a tube K; or I may employ for this purpose an ordinary bead on the central tube F, as shown at *f*, Fig. 3.

The air-distributor and flame-spreader is shown in Fig. 4, and consists of a central tube H, the sides of which are perforated at the top and provided with a deflector-button *h* and with division plates or vanes *h'*, the lower part of tube H, the bottom of which is open, and the vanes or plates being surrounded by a cylinder or tube H', which is so formed as to closely fit within the central air-tube F when the air-distributor and flame-spreader is in place, as shown in Fig. 1. The support for the air-distributor and flame-spreader is so

situated as to admit of the top of tube H and the button *h* extending a certain predetermined distance above the top of the wick tube or chamber, and also above the cone or deflector H, while the partition plates or vanes extend preferably to a point a short distance below the top of the central air-tube.

By means of this construction I provide for the perfect ventilation of the lamp and the best possible supply of the air for the supply of combustion. The air passes up through the perforations in the basket or distributor G to the outer mantle of the flame in the usual manner. That portion, however, which passes through the central tube is admitted through perforation *o* in the drip-cup R, and passing up through the central tube a portion thereof enters tube H, and being highly heated is directed in small jets outwardly through the perforations in said tube into the flame in the best possible condition to admit of the mingling of the oxygen of the air and the carbon of the burning gases, while the remainder of the air, which is admitted through perforations *o*, passes up between the plates or vanes *h'*, by which it is directed in small vertical currents into the flame, and the whirling motion of the central air-supply so common in Argand lamps is thus avoided, and by reason of this construction and the double air-supply thus furnished to the inner mantle of the flame a clear, steady, white light is produced and one of greater height and volume than has heretofore been possible in student-lamps.

The wick-raiser consists of a band or short tube L, which surrounds the central air-tube within the oil-chamber, and upon this band is placed the wick, as shown in Fig. 2, the wick being held in place by spring-clasps *l*, which are pressed into the substance of the wick by the outer tube E when the holder is drawn down within the oil-chamber. Attached to the wick-holder is a rack-bar M, which is provided on one of its sides with serrations or teeth, which mesh with a pinion-wheel *m* on a shaft N, by means of which the wick-holder is raised or lowered. The bar M extends down within a tube or socket O, which projects downward into the drip-cup R, which is made

unusually long for this purpose. The wick-holder band is cut away beneath the bar M, as shown in Figs. 1 and 2, in such a manner as to form a recess therein, and by means of this construction a much greater range of movement for the wick-holder is provided, the upper end of the tube or socket O passing up within this recess as the holder is drawn down. The tube or socket O serves as a protection for the bar M when the cup R is removed, and also as a firm bearing and support for the bar when the same is being operated upon by the shaft and pinion for the purpose of regulating the height of the wick.

15 I am aware that a wick-raiser for Argand lamps provided with a ratchet-bar working in a tube or socket which extends below the burner-tube has heretofore been used, and do not claim such construction as of my invention.

20 Having fully described my invention, its construction and mode of operation, I claim and desire to secure by Letters Patent—

1. The combination, with the Argand burner of a student-lamp, of a cup R, a tube or

socket O, extending upward into the wick-chamber and downward into said cup, a wick-raiser consisting of a band L, provided with a rack-bar M and with a recess which fits over the top of said tube when the wick-raiser is drawn down, and a pinion and shaft for operating said wick-raiser, substantially as shown and described.

2. The combination, with an Argand lamp, of a tube or socket O, extending up into the wick-chamber, a wick-raiser consisting of a band L, provided with a rack-bar M, which moves in said tube or socket, said band L being also provided with a recess which fits over the top of the tube or socket O when the wick-raiser is drawn down, and a shaft and pinion for operating the wick-raiser, substantially as shown and described.

Signed at Erfurt, in the Empire of Germany, this 5th day of November, A. D. 1888.

ADOLPH KLEEMANN.

Witnesses:

HAL MERSEBARGER,
CARL ERFURTH.