No. 768,828. PATENTED AUG. 30, 1904.

J. SWOBODA.

PETROLEUM INCANDESCENT LAMP.

APPLICATION FILED SEPT. 4, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

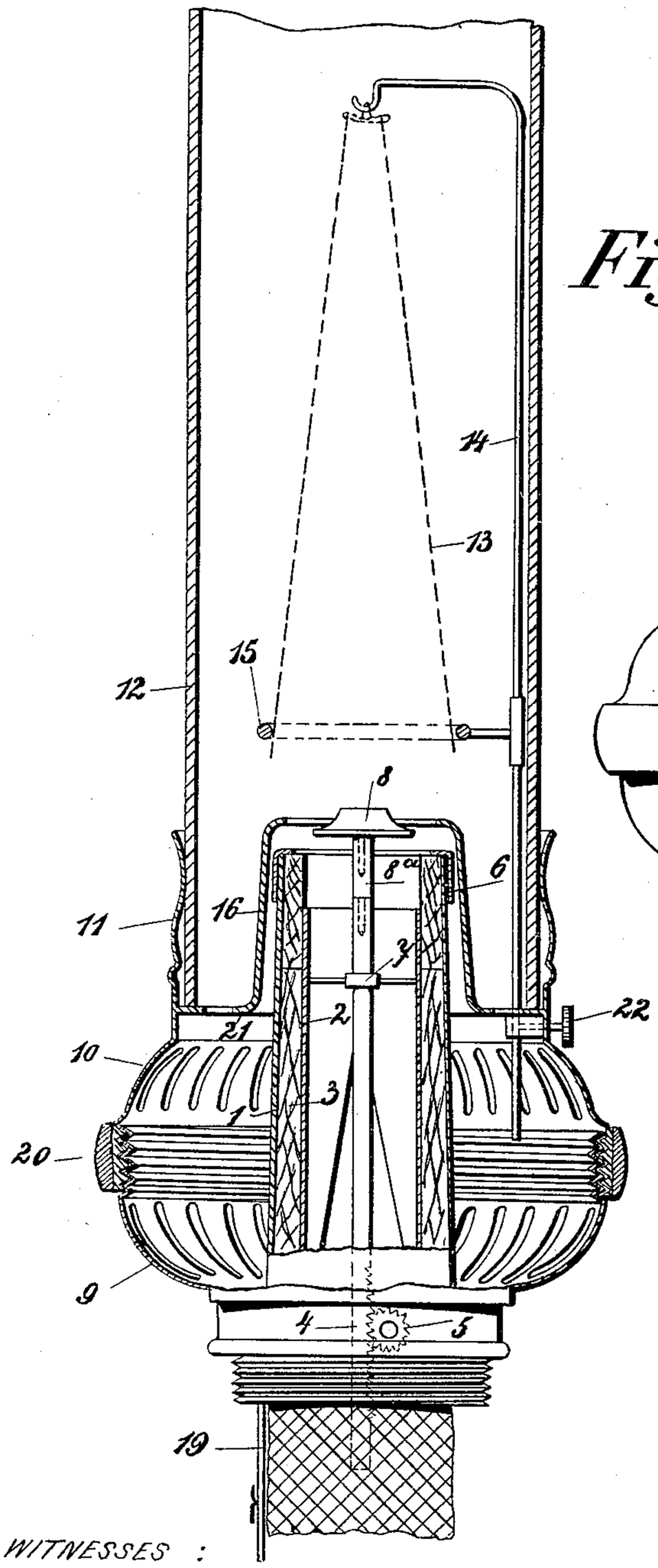

Fig. 1.

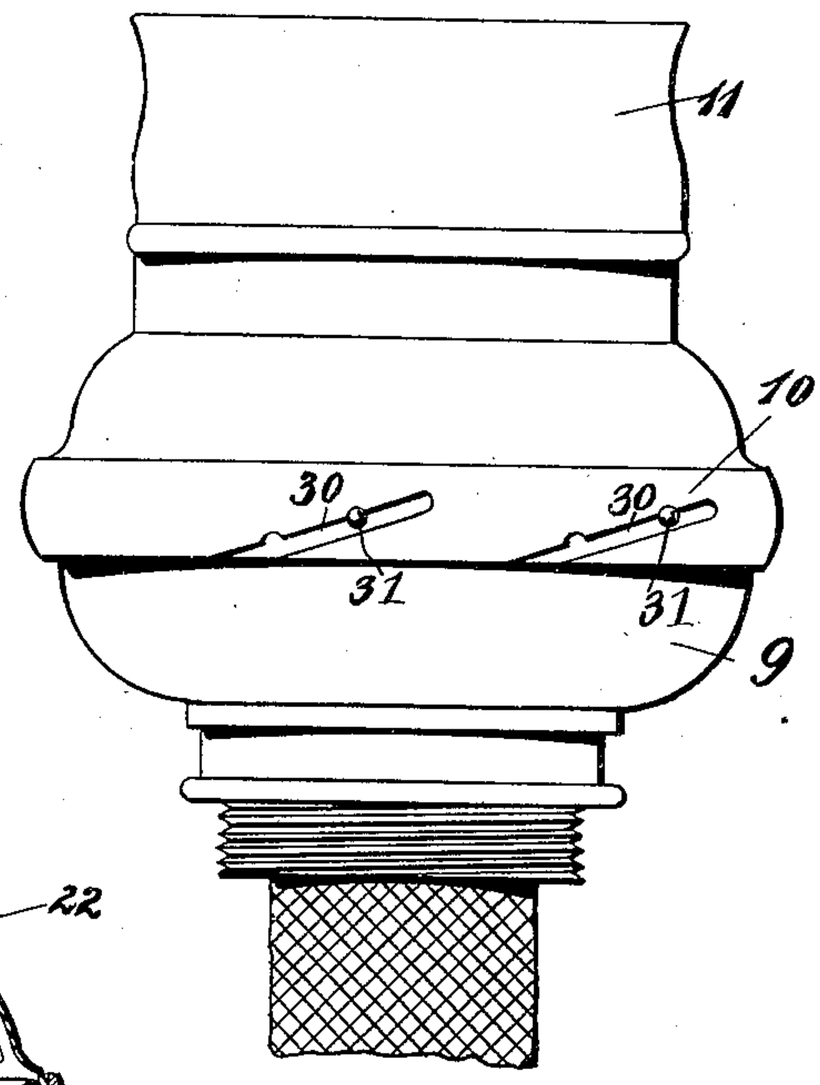

Fig. 2.

WITNESSES :

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A. H. Davis

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NO MODEL. 2 SHEETS—SHEET 2.

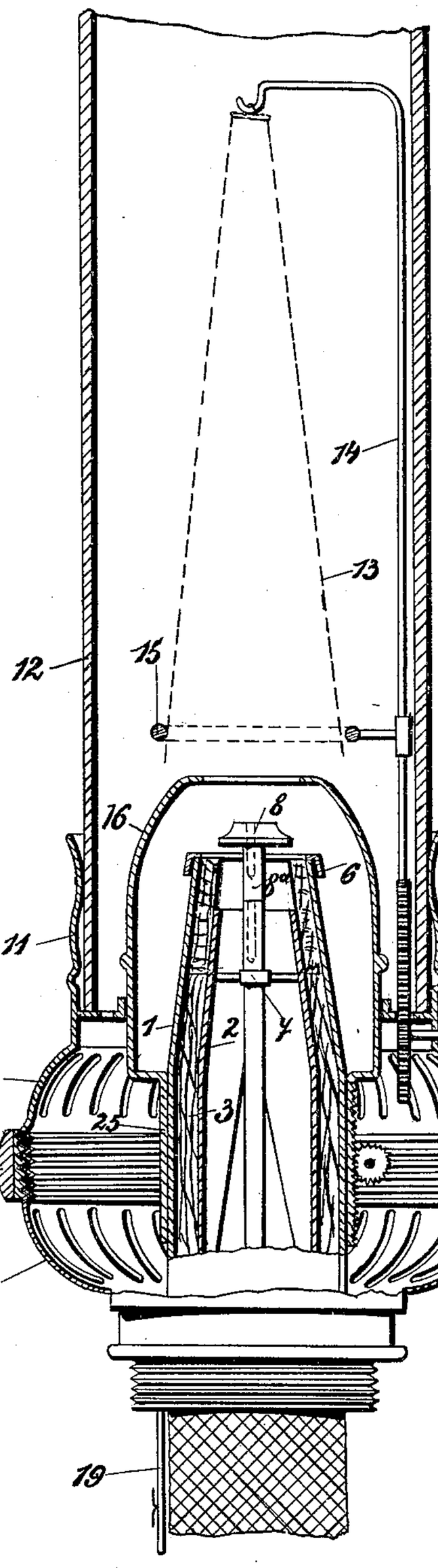

Fig. 3.

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No. 768,828. Patented August 30, 1904.

UNITED STATES PATENT OFFICE.

JULIUS SWOBODA, OF HAMBURG, GERMANY.

PETROLEUM INCANDESCENT LAMP.

SPECIFICATION forming part of Letters Patent No. 768,828, dated August 30, 1904.

Application filed September 4, 1902. Serial No. 122,077. (No model.)

To all whom it may concern:

Be it known that I, JULIUS SWOBODA, a subject of the King of Hungary, residing at Hamburg Kl. Grasbrook, Germany, have invented certain new and useful Improvements in Petroleum Incandescent Lamps, of which the following is a specification.

The object of the invention is to provide a new and improved petroleum incandescent lamp arranged to produce a continuous non-illuminating flame, to prevent the incandescent mantle from becoming sooty, and hence ineffective, the lamp also permitting convenient viewing of the flame between the burner and the mantle, and quick manual adjustment of the active parts to keep the lamp in working order.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a side elevation of a modified form of the device for vertically adjusting the burner-cap, and Fig. 3 is a sectional side elevation of another modified form of the improvement.

The hitherto-known petroleum incandescent burners all present the disadvantage that the gases brought to be burned do not give a continuous blue non-illuminating flame, but after longer or shorter use points of light always appear in the flame, which cause the incandescent mantle to become sooty. The illuminating soot-causing portions of the flame always come from uneveness of the top of the wick, which is rendered harmless by covering the top of the wick with a metal cap—as, for example, in the burner shown in the Letters Patent of the United States No. 653,253, granted to Otto Lehman, July 10, 1900, for an incandescent-lamp burner. In these burners, which also, as in the present case, present a burner-cap with its upper edge bent inward over the flame-disk, and in consequence of this by correct arrangements of the parts of the burner a cone-shaped flame especially advantageous for incandesent lighting, there is according to the experience of the applicant a certain amount of soot after a period of burning, because the wick-flame is thickened, and then the space for mixing of the petroleum-gases and air is not sufficient between the edge of the burner-cap, the burner-disk, and the wick. For regulating this mixing-space, therefore, the burner-cap is made adjustable in height, as is known in other incandescent burners without covered wicks.

The novelty consists, therefore, in the arrangement of the wick-cover and movable burner-cap with a burner with cone-shaped flame. The object of it is to secure not only a complete, but also a permanent non-illuminating cone-shaped flame by the combination of known means each one of which by itself is not sufficient to obtain this result. The adjustable burner-cap also renders possible the periodical adjustment of the cone-shaped flame. This form disappears in the known burners more and more as the vapor to be burned increases in volume. The suspension of the incandescing body has been so arranged hitherto that its lower end remains at a desired distance from the burner-cap. Since this arrangement in the present burner on account of the adjustable burner-cap is especially advantageous, so also in this case is the incandescing body so suspended that its lower end only reaches one or two centimeters beyond the burner disk or cap and is held in this position by an outer or inner ring secured to the suspending-wire. From this the advantage also results that the lower part of the non-illuminating cone of flame—the narrowed waist of the flame—remains freely in sight, and therefore any necessary alteration therein can easily be made.

The wick-sleeve, which passes through a burner and which for the sake of allowing air to pass may conveniently be formed with a slit, consists of an outer tube 1 and an inner shorter tube 2. The upper surface of the wick is covered by a cap 6, which fits over the outer cover 1, so that the wick actually burns upon its inner free surface. The wick can

consist of two parts—a suction-wick, which is kept in its place by a clip 19, and a special burner-wick connected with the suction-wick and extending between the outer tube 1 and the inner shorter tube 2, the upper end of this special burner-wick abutting against the cap 6, as plainly shown in Fig. 1. In the wick-sleeve there passes through the eye 7 a toothed rod 4, movable by a pinion 5, which rod 4 has at its upper end a hole drilled in which the burner-disk 8 is fixed by means of its pin 8ª. The burner-disk 8 may also in like manner be formed with a hole for the reception of a special flame-divider should this be employed.

The burner-body 9, carrying the gallery, has a screw-thread on which the burner-gallery or the upper part of the burner 10 can be screwed up and down. The upper part of the burner is rigidly secured to the cylinder-gallery 11 and with the cap 16, which is provided with a perforated flange 21, so that by screwing up and down the upper portion of the burner the cap 16 also at the same time takes a higher or lower position, and therefore by this means the flame can be rendered completely non-illuminating. In order to render possible the screwing up and down of the upper part of the burner when the burner has become hot, the latter possesses a protecting-ring 20 or corresponding knobs made of non-heat-conducting material. The cylinder 12 rests in the cylinder-gallery 11 upon the cap-flange 21, under which there is the eye 22 with set-screw for holding the supporting-wire 14. Upon the latter the incandescent mantle 13 is hung in the usual manner, its lower end being held by a movable outer or inner ring 15. The raising and lowering of the cap 16 or the whole upper part of the burner can naturally be effected in any other manner. For example, the connection of the burner-base 9, Fig. 2, with the upper part of the burner 10 can be made instead of by the screw-thread by fitting the parts 9 and 10, which will then be ring-formed, one into another, so that in the outer part upwardly-inclined slots 30 are made, (see Fig. 2,) the sides of which slots upon rotation of the said outer part of the burner bear upon pins 31, arranged on the circumference of the burner-basin 9, so as to render possible the raising and lowering of the upper portion.

The raising and lowering of the burner-cap 10 according to Fig. 3 can be effected quite independently of the raising and lowering of the cylinder-gallery, while the burner-cap 16 is at its lower portion provided with a tubular extension 25, which fits over the outside portion of the wick-sleeve 1. This burner-cap serves as a guide and can be adjusted by toothed mechanism. In this event the independent movement of the cylinder-gallery and burner-cap is also provided for by an adjusting apparatus for the mantle-support.

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

1. In incandescent burners, a wick-tube, and a cap overtopping the said tube and vertically adjustable relative to the wick-tube, as set forth.

2. The combination of a wick having an internal burning-surface, with a burner-disk, a burner-cap overtopping the said disk, and means for raising and lowering the said burner-cap.

3. In incandescent burners, a circular wick, a wick-tube having the inner wall thereof less in height than the outer wall, thereby to cause inner surface portions of the wick to be exposed for lighting, a disk overlapping the upper edge of the wick, and an adjustable cap inclosing said wick and tube at the upper part of the latter.

4. The combination with a wick, of a burner-disk, a burner-cap overtopping the burner-disk, means for adjusting the burner-disk, a burner-gallery carrying the said burner-cap, means for adjusting the burner-gallery, and a mantle-support on the said burner-gallery, as set forth.

5. The combination with a wick, of a burner-disk, a burner-cap overtopping the burner-disk, means for adjusting the burner-disk, a burner-gallery carrying the said burner-cap, means for adjusting the burner-gallery, a mantle-support on the said burner-gallery, and a ring on the mantle-support, surrounding the mantle at its lower edge, as set forth.

6. The combination of a burner-body, a burner-gallery held vertically adjustable on the said burner-body, a wick-tube carried by the said body, a burner-disk, means for vertically adjusting the said burner-disk, and a burner-cap carried by and moving with the said burner-gallery and overtopping the said burner-disk, as set forth.

7. A petroleum incandescent burner having a vertically-adjustable burner-cap, a wick-sleeve for containing the wick and arranged to form an internal burning-surface on the wick, and a spreader for the flame, intermediate the said surface and cap, as set forth.

8. A petroleum incandescent burner having a burner proper and a manually-adjustable mantle-support, to hold the lower end of the mantle above the burner proper, to form a viewing-space between the burner proper and the mantle, as set forth.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

JULIUS SWOBODA.

Witnesses:
ALFRED RICBOUR,
OTTO W. HELLMRICH.