F. W. DRESSEL.

HEADLIGHT BURNER.

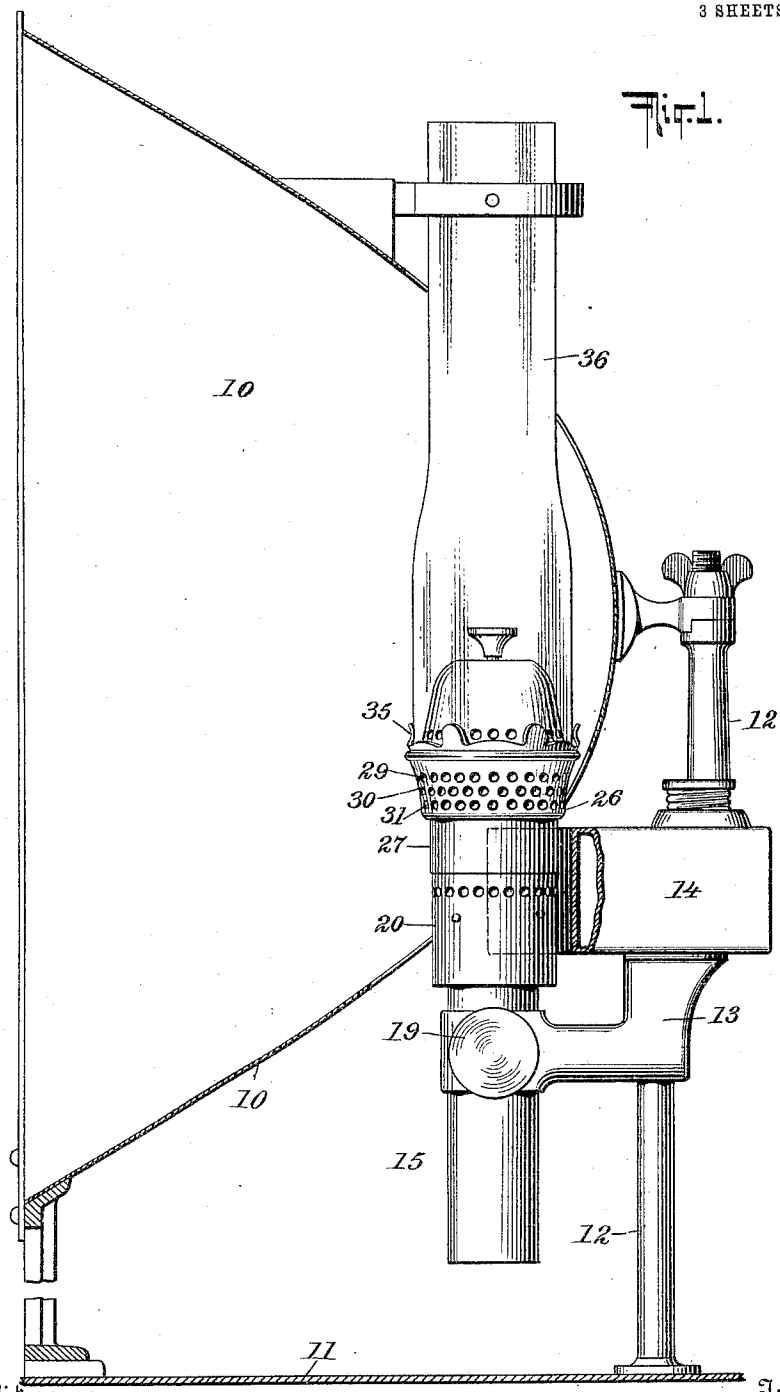
APPLICATION FILED JUNE 16, 1910.

1,051,392.

Patented Jan. 28, 1913.

3 SHEETS—SHEET 1.

Fig. 1.



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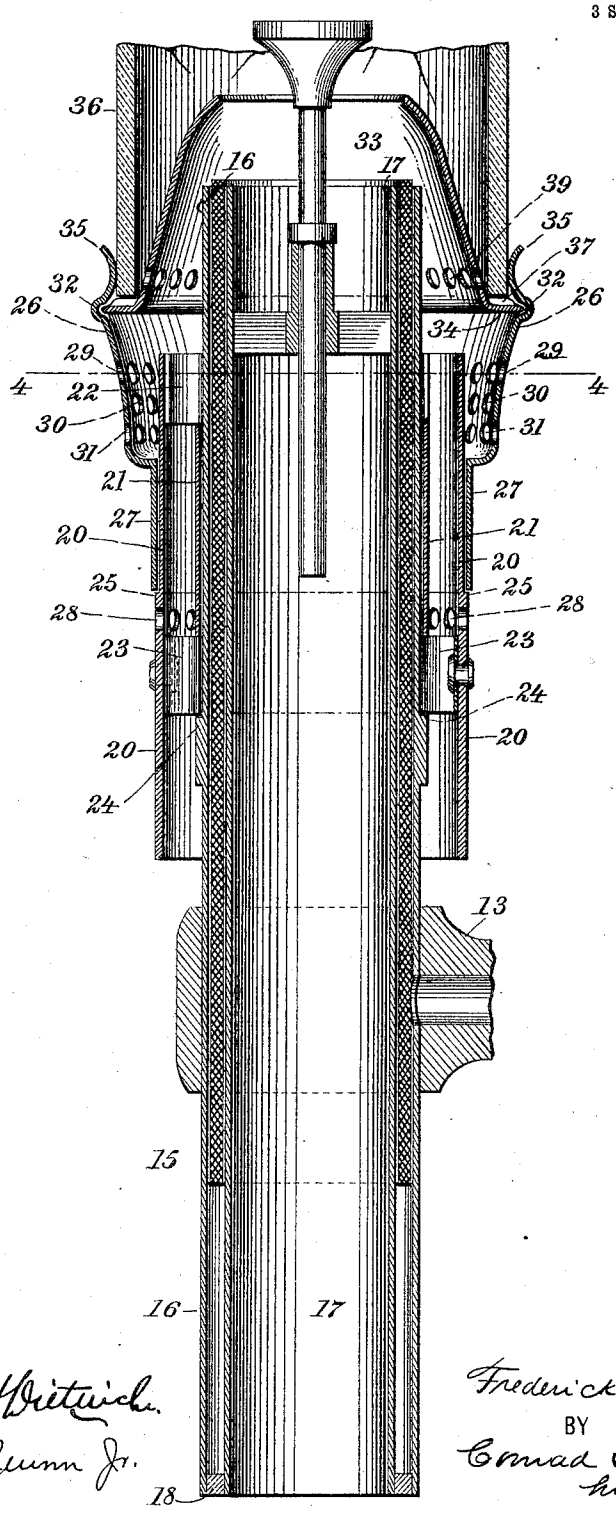
3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 5.

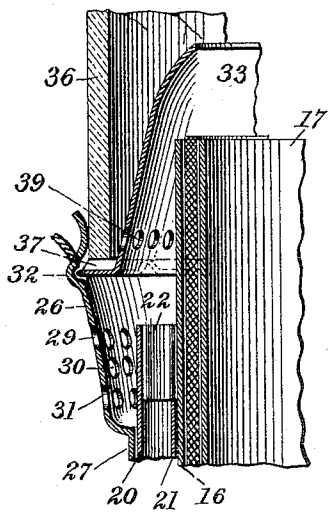


Fig. 4.

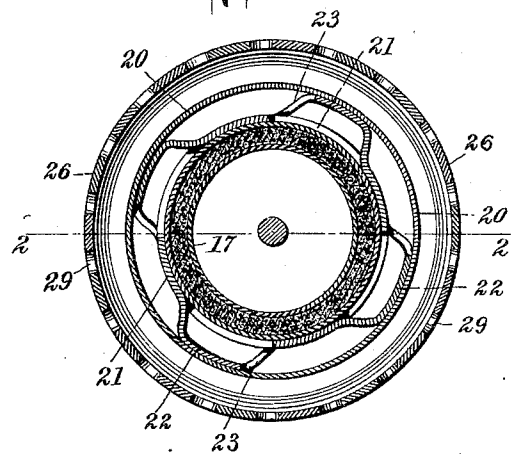
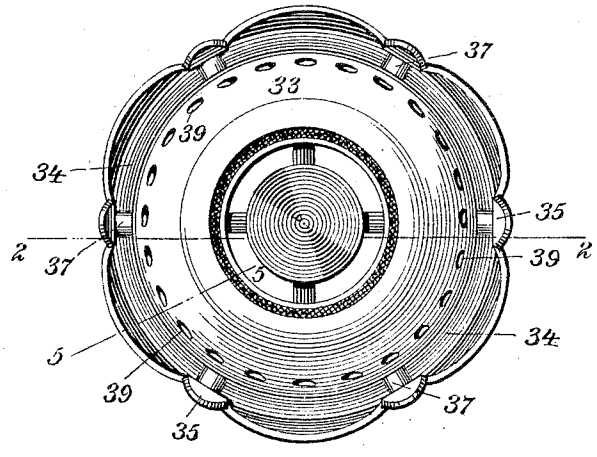


Fig. 3.



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UNITED STATES PATENT OFFICE.

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HEADLIGHT-BURNER.

1,051,392. Specification of Letters Patent. Patented Jan. 28, 1913.

Application filed June 16, 1910. Serial No. 567,192.

To all whom it may concern:

Be it known that I, FREDERICK W. DRESSEL, a citizen of the United States, residing at the city of New York, borough of Manhattan, in the county and State of New York, have invented certain new and useful Improvements in Headlight-Burners, of which the following is a full, clear, and exact specification.

In headlight burners the ascending air currents are usually brought to the point of combustion after passing through long tubes of either imperforate or perforated metal, the perforations being usually quite minute. The air currents are thus delayed, and as a result there is more or less imperfect combustion and a spreading or flickering flame.

My invention relates to improvements in headlight burners of this class, and one of the objects of the same is to provide a central-draft burner which will emit an intense, white, steady flame, and which will not crawl or climb because of any overheating of the parts of the burner.

Further, said invention has for its object to provide a burner producing an intense flame of great candle power in a compact, substantially tulip-shaped form, so as to bring as many light rays as possible in or near to the focus of the parabolic reflector used in the headlight.

Further, said invention has for its object to provide a burner in which a full supply of air is judiciously divided and fed to the burner in such manner as to obtain a perfect combustion, the different parts of the burner kept reasonably cool, and the ascending air currents so controlled that the steadiness of the flame is not affected.

Further, said invention has for its object to provide means for cooling the outer wick-tube, and additional means for cooling the chimney which is applied to the burner.

Further objects are to provide a thoroughly efficient and practical burner of durable construction, and in which the parts may be readily detached to permit of thorough cleaning.

To the attainment of the aforesaid objects and ends, my invention consists in the novel details of construction, and in the combination, connection and arrangement of parts hereinafter more fully described, and then pointed out in the claims.

In the accompanying drawings forming part of this specification wherein like numerals of reference indicate like parts, Figure 1 is a side elevation showing one form of headlight burner, constructed according to and embodying my said invention, the same being shown with the reflector and supporting part in section; a portion of the oil font being broken away; Fig. 2 is an enlarged vertical central section of the burner, on the line 2—2, Figs. 3 and 4, a portion of the chimney being also shown; Fig. 3 is a top view of the burner; Fig. 4 is a transverse section thereof on the line 4—4, Fig. 2, and Fig. 5 is a detail vertical section on the line 5—5, Fig. 3.

Referring to the drawings, 10 designates a parabolic reflector supported in usual manner from the base 11 of the headlight. The burner is supported from said base by a standard 12, and a bracket 13 on which is located an oil font 14. The burner comprises a wick-tube 15 composed of two concentric tube sections 16, 17, secured together at their lower ends by a spacing ring 18 which forms a base or bottom for said tubes. The wick-tube 15 is mounted in the outer end of the bracket 13, and is adapted to be secured to its adjusted position by a set screw 19.

20 denotes an air tube of somewhat larger diameter than said wick-tube 15, in order to provide an annular air space between said wick-tube and air tube. The air tube 20 is supported in position on said wick-tube 15 by means of a sleeve section 21 of shorter length than said air tube 20, which sleeve section fits snugly upon said wick-tube 15. Said sleeve section 21 is provided at its upper and lower edges with a plurality of outwardly extending spring fingers or members 22, 22, and 23, 23, having their outer ends bent to conform substantially to the inner surface of said air tube 20, whereby to maintain said air tube properly spaced upon said wick-tube. The air tube 20 is adapted to be held to its vertically-adjusted position upon said wick-tube 15 by the frictional engagement of its sleeve section 21 with said wick-tube.

24 denotes an annular shoulder provided upon the outer side of the wick-tube 15 which serves as a support for the lower end of the inner sleeve section 21, and also acts as a stop to limit the downward movement of said sleeve section, and its attached air tube, upon said wick-tube. The outer diameter of the upper portion of the air tube 20 is slightly reduced in order to form an annular shoulder 25 upon the outer side thereof about midway of its height, which shoulder together with the upper end of the air tube 20 forms a support for the chimney holder or gallery 26.

The chimney holder or gallery 26 is provided at its upper end with a flaring portion, and at its lower end with a tubular section 27 which fits snugly upon the reduced upper end of the air tube 20, and is adapted to be supported upon the shoulder 25 thereof.

The air tube 20, directly below the shoulder 25 is provided with a circular row of air inlet apertures 28, and the flaring upper end of the chimney holder or gallery 26 is also provided with three circular rows of air inlets 29, 30, 31, which rows are arranged one above the other, and the uppermost row 29 arranged in a horizontal plane just below the upper end of the air tube 20. The upper end of the air tube 20 serves as a baffle or wind-brake for the separated air currents which enter through the air inlets 29, 30, 31, and impinge against the outer surface of the upper end of said air tube 20.

The chimney holder or gallery 26 is provided adjacent to the edge of its flaring portion with an annular recess 32, to receive and support the flange 34 of the burner crown 33, and above said recess 32 said chimney holder or gallery is provided with a series of upwardly extending spring fingers 35, 35, which are adapted to engage the lower end of a chimney 36.

The flange 34 of the burner crown is provided with a series of radial ribs or projections 37, 37, upon which the lower end of the chimney 36 is adapted to rest, thus leaving a series of spaces between said radial ribs 37, 37, through which air may enter and pass below the lower edge of the chimney, and thereby serve to cool the same.

The burner crown 33 is provided with a circular row of air inlets 39, 39, just above the flange 34 to permit of a portion of the air entering between the lower portion of the burner crown 33, and the upper end of the wick-tube 15 to pass into the chimney in order to aid in maintaining said chimney properly cooled, and also to prevent the overheating of the burner parts.

It is to be noted particularly that by providing the chimney holder or gallery 26 with several annular rows of air vents of comparatively large diameter, arranged in several rows, one above the other, and the uppermost of said rows disposed in a horizontal plane below the upper end of the air tube, a large volume of air divided into a number of separated currents may be conducted to the burner without causing the same to be broken up or delayed. Where a sieve or other device containing a large number of very small openings is employed, the air currents are either separated into many fine jets which almost immediately thereafter unite into one stream or mass, or the same are so retarded as to require a suction action of the flame to draw in the required quantity of air.

By introducing air into the chimney between the lower edge thereof and the gallery, and also introducing air into the chimney through the apertures adjacent to the base of the burner crown, a more perfect combustion is obtained, and at the same time the chimney and burner parts maintained properly cooled. Further, it is to be noted that by providing the burner with air vents of large diameter, the same are not likely to become clogged and interfere with the operation of the burner.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A headlight burner, comprising a wick-tube, a sleeve fitted upon said wick-tube, an air supply tube surrounding said sleeve and free therefrom, and an annular series of resilient spacing members upon the opposite ends of said sleeve and secured to said air supply tube; the outer ends of the spacing members at one end of said sleeve extending in a direction opposite to the outer ends of the spacing members at the other end of said sleeve, substantially as specified.

2. A headlight burner, comprising a wick-tube, an air supply tube supported upon and surrounding said wick-tube and free therefrom, a chimney holder disposed upon said air supply tube having a flaring upper portion provided with air vents arranged in a horizontal plane below the upper end of said air supply tube, substantially as specified.

3. A headlight burner, comprising a wick-tube, an air supply tube supported upon and surrounding said wick-tube and free therefrom, a chimney holder mounted upon said air supply tube having an outwardly flaring upper portion to receive the upper end of said air supply tube, and said flaring upper portion provided with a plurality of superposed rows of air vents arranged in horizontal planes below the upper end of said air supply tube, substantially as specified.

4. A headlight burner, comprising a wick-tube, an air supply tube surrounding said wick-tube and free therefrom, and provided with a series of air vents, a chimney holder mounted upon said air supply tube and pro-

vided with air vents arranged in a horizontal plane below the upper end of said air supply tube, a burner crown provided adjacent to its lower edge with a series of air inlets and a flange engaged by said chimney holder, and radial ribs on said flange for supporting a chimney free from said flange, substantially as specified.

Signed at the city of New York, in the county and State of New York, this second day of March, nineteen hundred and ten.

FREDERICK W. DRESSEL.

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