(No Model.) 2 Sheets—Sheet 1.

W. S. HAMM.

BICYCLE LAMP.

No. 564,882. Patented July 28, 1896.

Fig. 2.

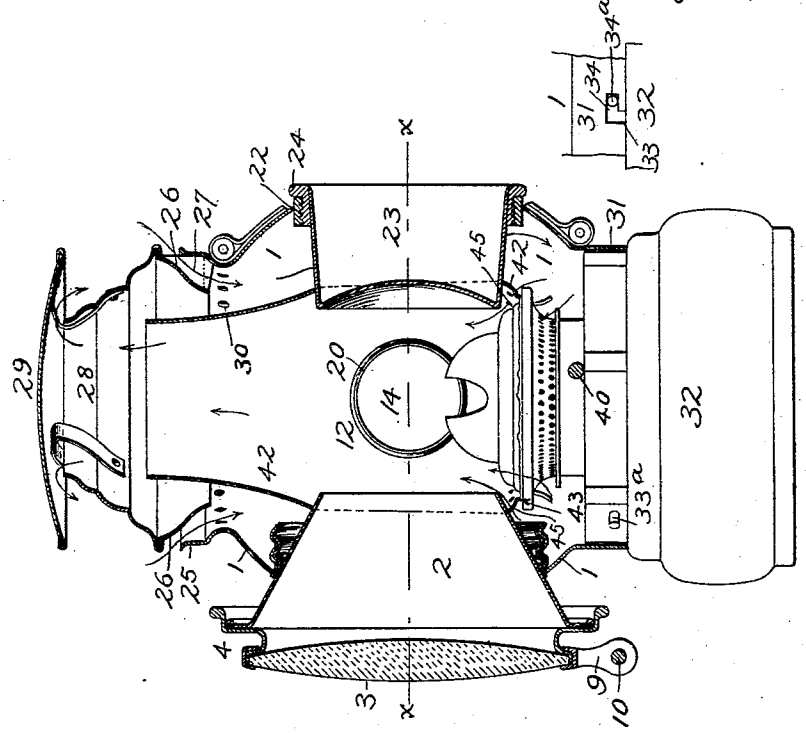
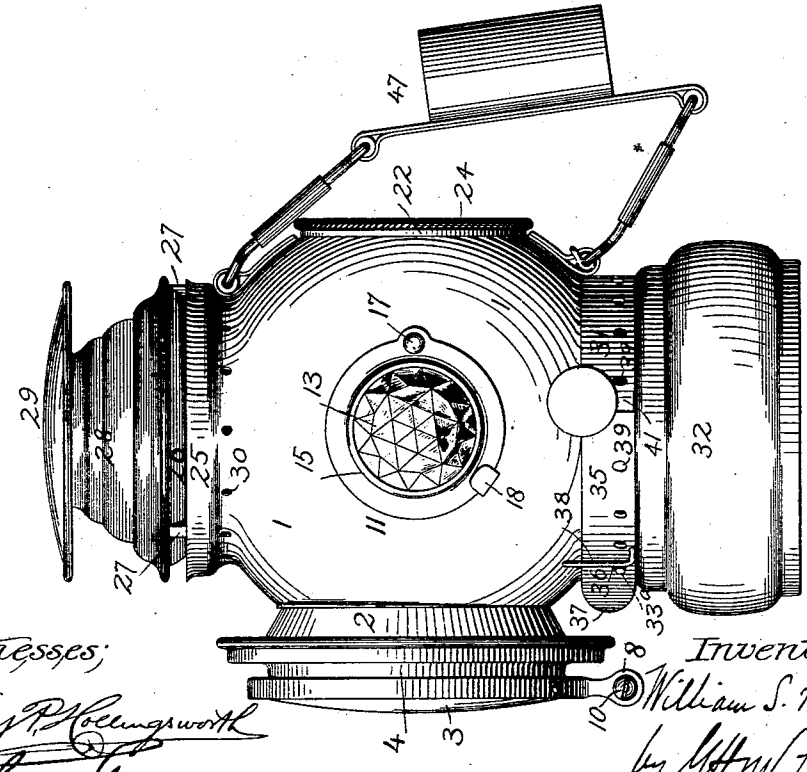


Fig. 1.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3

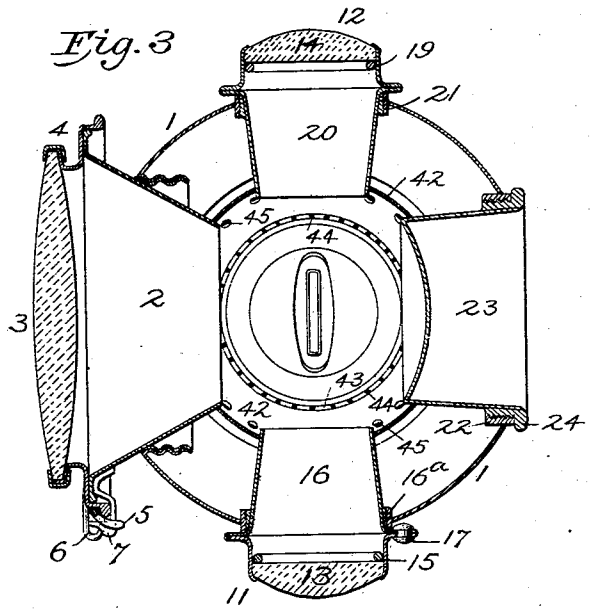


Fig. 6.

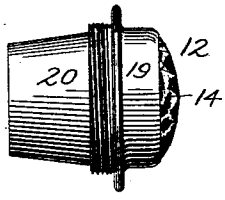


Fig. 4.

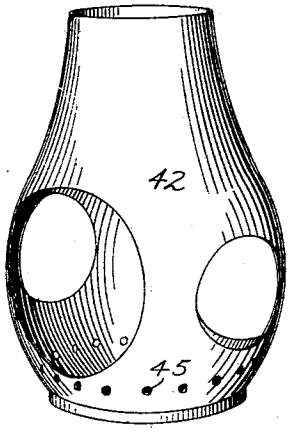


Fig. 7.

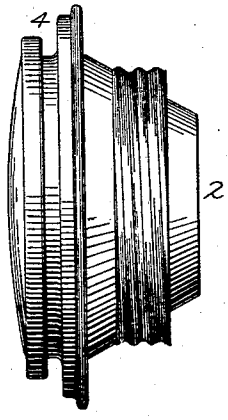
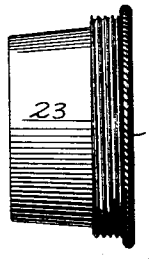


Fig. 5.



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UNITED STATES PATENT OFFICE.

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BICYCLE-LAMP.

SPECIFICATION forming part of Letters Patent No. 564,882, dated July 28, 1896.

Application filed March 7, 1896. Serial No. 582,261. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. HAMM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bicycle Lamps or Lanterns, of which the following is a specification, reference being had to the accompanying drawings and to the numerals marked thereon.

This invention has especial reference to a lamp or lantern for use with a vehicle of the bicycle class, and which is provided with a front lens for concentrating and throwing forward the light, and with side glasses.

This invention has for its object the production of a lamp or lantern, of the character mentioned, which shall be cheap in construction, neat in appearance, and effective in operation, and shall provide a clear and smokeless flame, the light from which shall be strongly reflected forward and exhibited at each side.

The invention also relates to means whereby the air necessary to support combustion is effectively admitted to the burner, thereby producing a steady flame; whereby the products of combustion are rapidly and wholly permitted to escape; whereby the reflector is made removable from the body of the lamp, in order that it may be kept burnished and bright; and to other details of construction, herein described, whereby the general character of lamps or lanterns of this class is improved.

In the accompanying drawings, Figure 1 is an exterior view of a lamp or lantern embodying my invention. Fig. 2 is a vertical section thereof. Fig. 3 is a horizontal section on the line *x x* of Fig. 2. Figs. 4, 5, 6, and 7 represent detached details.

Similar numerals of reference indicate similar parts in the respective figures.

1 is the outer case of the lamp, which, as here shown, is in the main spherical in form, although it may be otherwise shaped. At the front of the case is an outwardly-flaring tube or support 2, the interior surface of which is highly burnished. The ring 4, supporting or framing the front lens 3, is hinged to the outer part of the tube or support 2 and carries a spring-catch 5 to hold the framed lens in a closed position. The part of the ring 4 in which the lens 3 is immediately placed is divided or split, the separated ends being provided with lugs 8 9, the latter of which is threaded and serves as a nut for a screw 10, the action being such that by tightening the screw the ring is caused to bind the lens and maintain it securely in place. It is also obvious that the ring may be loosened upon the lens should occasion require this to be done.

At each side of the outer case 1, and preferably in the central horizontal plane of the lamp, are the side signals 11 12, consisting of colored glasses or jewels 13 and 14, framed as hereinafter described. The glass 13 is mounted in an annular frame 15, which is hinged to a tapering thimble 16, provided with a threaded portion which screws into a neck or ring 16^a, secured to the outer case. The exterior part of the thimble projects slightly beyond the outer surface of the case 1, in such wise that the framed glass or jewel 13 may be swung or turned upon its hinge 17, so as to permit access to the interior of the case for the insertion of a lighted match. The frame of the glass 13 is maintained in its closed position by means of a metallic clip 18, into which a portion of the flanged edge of the annular frame 15 fits when occupying its normal position. The opposite signaling-glass 14 is mounted in a frame 19, attached to which is a tapering thimble 20, having a threaded portion which screws into a threaded neck or ring 21, slightly projecting from the outer case. Other functions of the tapering thimbles 16 and 20 will be hereinafter pointed out. The two thimbles may be alike and with or without the hinge.

The rear portion of the outer case 1 is cut away and the interior of the opening is widened and threaded, as shown at 22. Within the threaded opening a frusto-conical body 23, the inner side of which is slightly concave and highly burnished, so as to constitute a reflector, is screwed, the outer portion of the said body being flanged and having a milled edge 24, whereby it may be readily screwed to and unscrewed from the outer case 1.

The upper portion of the outer case 1 is provided with a flanged ring 25, in the mouth of

which rests a conical wind cone or deflector 26, supported by feet or standards 27, while at the top of the part 28 of the said cone or deflector is secured a cap 29. At the base of the ring 25 are a series of perforations 30.

The lower portion of the outer case 1 is in the form of a cylindrical neck 31, into which the upper part of the oil-receptacle 32 fits, the said receptacle, when in place, forming the base of the entire structure. The neck 31 is provided, at opposite sides, with vertical slots 33, terminating in horizontal slots 34, while the upper portion of the oil-receptacle is furnished with projecting pins 33^a 34^a, which, in connection with said slots 33 34, unite the oil-receptacle 32 and case 1 by bayonet-joints, as will be readily understood. A plate-spring 35 partially surrounds the neck 31 of the outer case, the outer end of the spring being provided with a hole 36 and an outwardly-turned finger part 37, the hole 36, when the attachment between the oil-receptacle and the case is effected, fitting over the pin 33^a and securing the parts together. The outward movement of the spring 35 is limited by means of a wire guard 38.

The oil-receptacle is of any ordinary or approved construction, and the shaft 40 of its wick-raiser extends beyond the outer case 1, the neck or ring 31 being furnished with a slot 41, in which the said shaft rests, and which allows its passage when the oil-receptacle is to be moved downward for detachment from the case.

Within the outer case 1 is a metallic chimney 42, Fig. 4, the enlarged lower portion of which is provided with four openings for purposes to be described. The lower edge of the metallic chimney 42 rests upon the gallery 43 of the burner, so that the row of perforations 44 in said gallery is just within the base of the chimney, and at or near the base of the said chimney is also a row of perforations 45, they having the obvious function of admitting air to the flame. The upper part of the chimney 42 passes up into the interior of the cone or deflector 26.

The inner portion of the conical tube or support 2 for the lens 3 fits in the front opening of the metallic chimney 42, while the inner portion of the frusto-conical body 23, Fig. 5, as a part of which the reflector is formed, fits in the corresponding rear opening of the chimney. The two smaller openings of the metallic chimney receive the tapering thimbles 16 and 20, Fig. 6, of the respective side or signaling glasses. By this construction tight, yet readily detachable, joints are made between the front and side lenses and the reflector, respectively, and the metallic chimney, which chimney serves not only to carry away the products of combustion from the flame, but also to concentrate and confine the light, so as to cause it to be effectively thrown through the front and side lenses.

It will be seen that the reflector is readily removable from the outer case and metallic chimney, and that it, therefore, may be conveniently kept clean and burnished, and also that the supports of the front and side lenses may be easily removed from the outer case and metallic chimney, so as to release the latter and enable it to be removed.

The lamp or lantern is provided with a spring-support 47 of any ordinary or approved construction.

An important feature in my invention is the metallic chimney 42, cut away to receive the lens-supports and the inner end of the body or support carrying the removable reflector. The arrangement of the air-openings, and of the cone or deflector and cap, and the carrying of the metallic chimney into the upper portion of the lamp-case, and near the point of exit of the products of combustion, are also important. By the construction herein described the lamp may be readily taken apart, even by persons unskilled in mechanical methods, for the purpose of inspecting or cleaning any of its parts, and as easily put together again. This may be done without unnecessarily soiling the hands, inasmuch as the exterior of the chimney and the interior of the outer case cannot be reached by soot or smoke, all the products of combustion being carried off without the possibility of reaching the said surfaces of the parts named, or the supports for the lenses, or the reflector, or other parts which the user may wish to handle.

It is obvious that deviations may be made from my lamp or lantern, as herein described, in minor features, not involving invention. Thus, while I have described, and prefer, a metallic or opaque chimney, one of glass or other material might be substituted. It is also evident that the supports for the lenses might be attached to the outer case in a manner other than by threaded joints, as also might the reflector, provided it were still made removable. The means of attaching the lantern-case to the oil-receptacle may be varied, the arrangement of air-apertures changed, and other details of construction altered, at the discretion of the skilled mechanic. The outer case is preferably spun, as also are the metallic chimney and other parts; but other modes of construction thereof and changes in their shapes may be made.

Having described my invention, I claim—

1. In a lamp or lantern of the character described, an outer case having an opening through the rear thereof, and a chimney within the outer case, also provided with an opening, combined with a reflector detachably fitted to the outer case and to the chimney, substantially as set forth.

2. In a lamp or lantern of the character described, an outer case, having openings through the front and rear thereof, and a chimney within the outer case having similar openings therethrough, combined with a front lens and a reflector opposite the front lens, the supports of the said lens and reflector, re-

spectively, being detachably fitted in the openings through the outer case and the chimney, substantially as set forth.

3. In a lamp or lantern of the character described, the combination of an outer case provided with openings, a chimney within the outer case having openings similar to, and registering with, those of the outer case, a front lens framed in a support detachably united to said outer case and chimney, and a removable reflector also mounted in a support fitted to said outer case and chimney, and in concentric relation to said front lens, substantially as set forth.

4. In a lamp or lantern of the character described, an outer case provided with suitable openings, and a chimney within the outer case having openings registering with the openings in the outer case, combined with side supports carrying signal-glasses, said supports being made detachable from the outer case and the chimney, substantially as set forth.

5. In a lamp or lantern of the character described, the combination of an outer case having openings, an internal chimney having similar openings opposite those in the outer case, and supports for glasses and a reflector, respectively, which supports are fitted in and detachable from the openings of said outer case and chimney, substantially as set forth.

6. In a lamp or lantern of the character described, the combination of an outer case having openings, a chimney having similarly-disposed openings, a removable front lens, removable side glasses, a removable rear reflector and supports for said lens, glasses and reflector, said supports being detachably fitted to the openings, respectively, of the outer case and chimney, substantially as set forth.

7. In a lamp or lantern of the character described, the combination of an outer case, an independent and removable chimney having openings similar to and registering with the openings in the outer case, a front lens, a rear reflector, side signal-glasses, and supports for said lens, reflector and signal-glasses, respectively, said supports entering the openings of the outer case and of the chimney, respectively, and being detachably secured therein, whereby upon the liberation of the said supports it may be removed from the lamp or lantern, substantially as set forth.

8. In a lamp or lantern of the character described, the combination of an outer case and an inner case, the latter consisting of a removable metallic chimney held in place by the mountings of the lens, reflector and signal-glasses, substantially as set forth.

9. In a lamp or lantern of the character described, the combination of an outer case having a front lens, a removable case or chimney, and a removable reflector fitted to said outer case and chimney in concentric relation to said front lens, substantially as set forth.

10. In a lamp or lantern of the character described, the combination of an outer case having a front lens and a detachable rear reflector, and a chimney having openings, within which the supports of the front lens and the rear reflector are fitted, substantially as set forth.

11. In a lamp or lantern of the character described, the combination of an outer case having a detachable support carrying a front lens, a detachable rear support, a part of which forms a reflector, detachable side supports, each carrying a side glass, and a chimney having openings, into which the inner ends of said detachable supports are fitted when the parts are assembled, and from which they may be liberated when the respective parts are to be separated, substantially as set forth.

12. In a lamp or lantern of the character described, the combination of an outer case having a suitable wind cone or deflector, a removable oil-receptacle carrying an ordinary burner and its accessories, and forming the base of the lamp or lantern, and a removable metallic chimney extending into the upper part of the outer case, and held in position by the supports of the lens, reflector and signal-glasses, substantially as set forth.

In testimony whereof I hereto set my hand and seal.

WILLIAM S. HAMM. [L. S.]

Witnesses:
W. P. FARRELL,
E. B. MCCAHAN.