

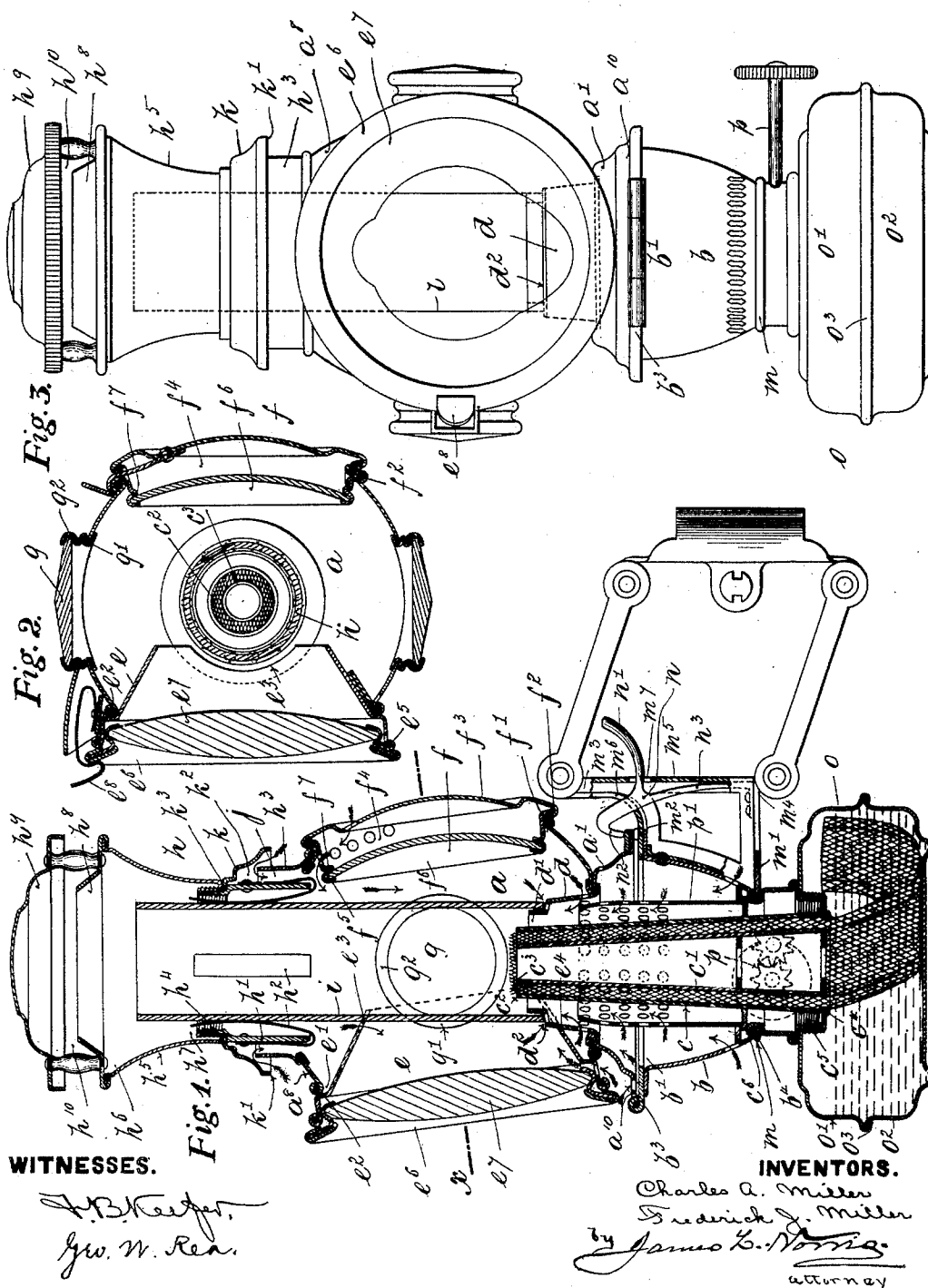
(No Model.)

C. A. & F. J. MILLER.
CYCLE LAMP.

4 Sheets—Sheet 1.

No. 595,191.

Patented Dec. 7, 1897.



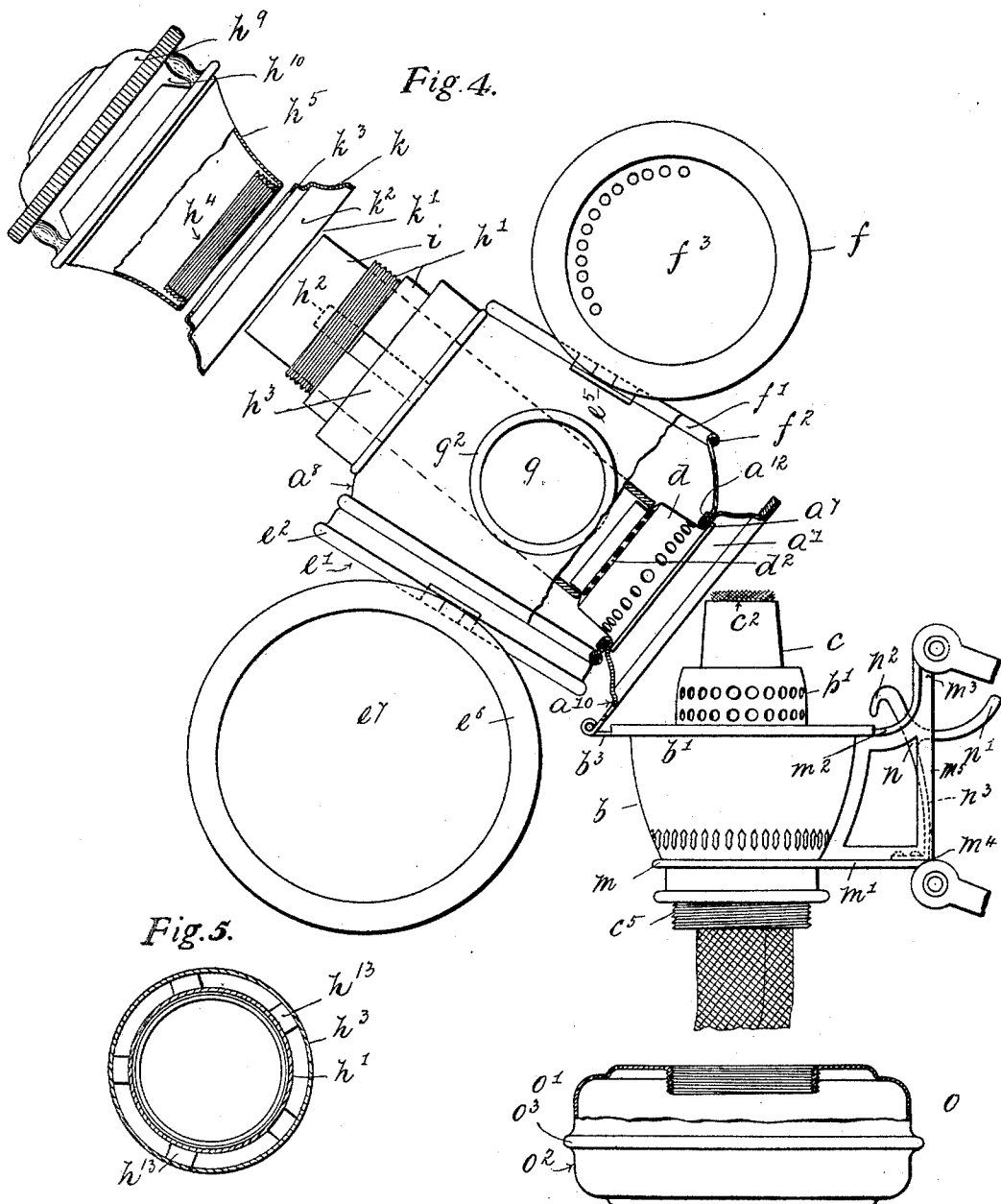
(No Model.)

4 Sheets—Sheet 2.

C. A. & F. J. MILLER.
CYCLE LAMP.

No. 595,191.

Patented Dec. 7, 1897.



WITNESSES.

F. B. Keefe
Geo. W. Rea.

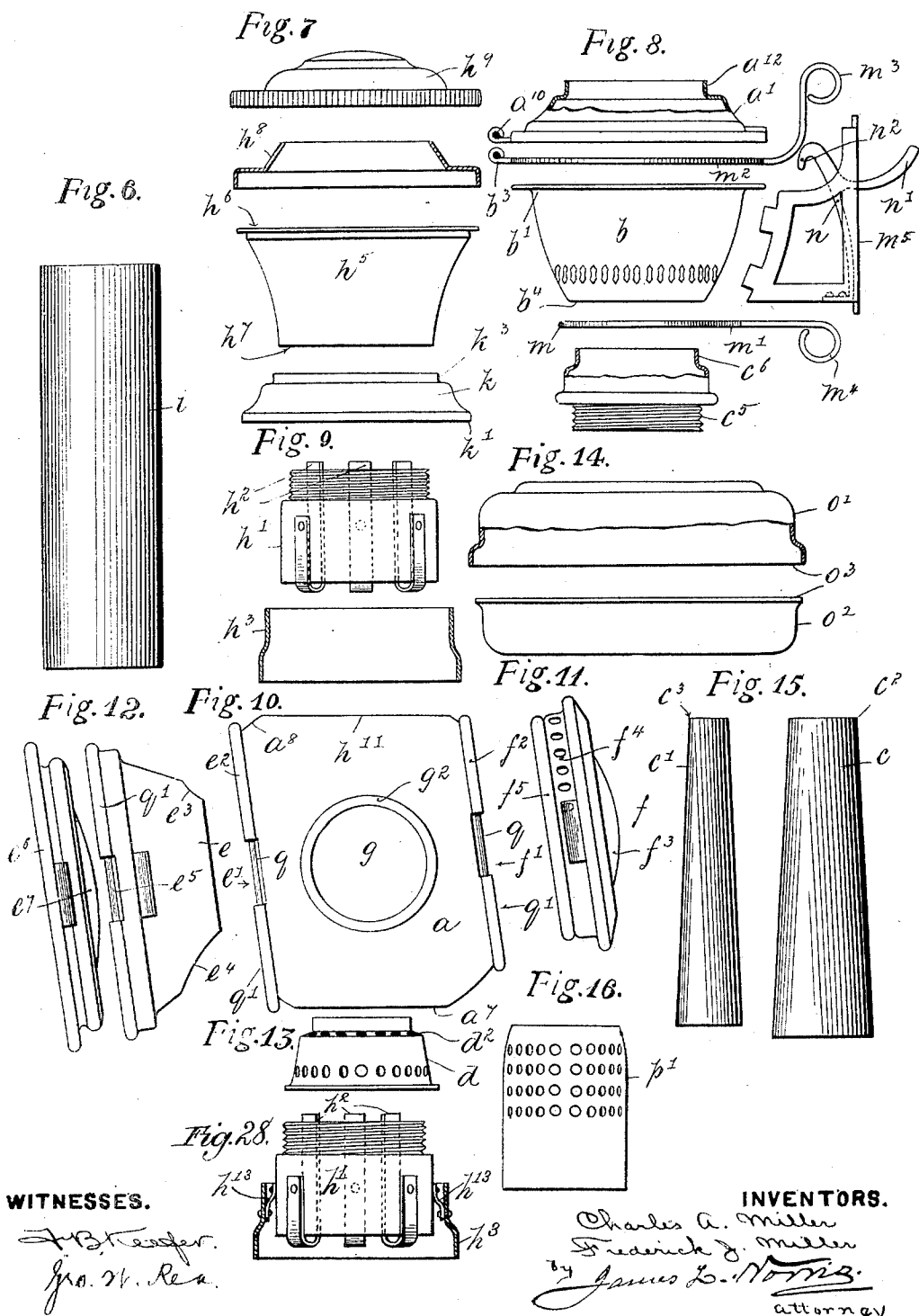
INVENTORS.

Charles A. Miller
Frederick J. Miller
by *James L. Norris*
attorney

C. A. & F. J. MILLER.
CYCLE LAMP.

No. 595,191.

Patented Dec. 7, 1897.



WITNESSES.

J. B. Keefe.
Geo. W. Res.

INVENTORS.

Charles A. Miller
Frederick J. Miller
by James L. Norris.
attorney

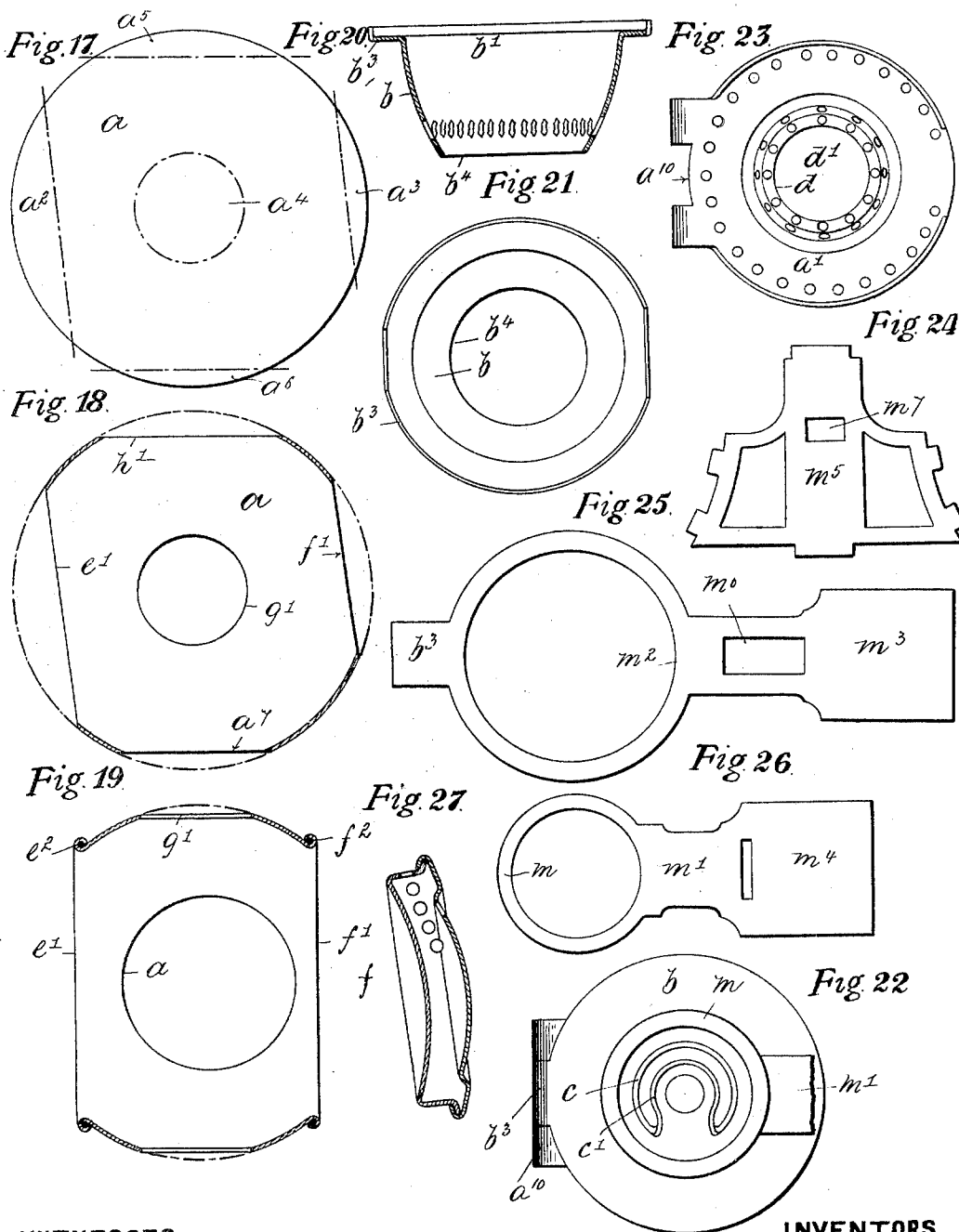
(No Model.)

4 Sheets—Sheet 4.

C. A. & F. J. MILLER.
CYCLE LAMP.

No. 595,191

Patented Dec. 7, 1897.



WITNESSES.

J. B. Keyser
Geo. W. Rea.

INVENTORS.

Charles A. Miller
Frederick J. Miller
by *James C. Morris*
attorney

UNITED STATES PATENT OFFICE.

CHARLES ALBERT MILLER AND FREDERICK JOHN MILLER, OF BIRMINGHAM,
ENGLAND.

CYCLE-LAMP.

SPECIFICATION forming part of Letters Patent No. 595,191, dated December 7, 1897.

Application filed February 16, 1897. Serial No. 623,642. (No model.) Patented in England September 19, 1896, Nos. 20,740 and 20,741.

To all whom it may concern:

Be it known that we, CHARLES ALBERT MILLER and FREDERICK JOHN MILLER, managing directors of W. Miller & Company, Limited, subjects of the Queen of Great Britain, residing at Miller Street, in the city of Birmingham, England, have invented certain new and useful Improvements in Cycle-Lamps, of which the following is a specification, and for which Letters Patent of Great Britain have been obtained dated, respectively, the 19th day of September, 1896, and numbered, respectively, 20,740 and 20,741.

This invention relates to lamps principally adapted for burning light volatile oils, such as paraffin, and employed on cycles, motor-carriages, and other road-vehicles, and has for one of its objects a smokeless lamp not liable to be extinguished by ordinary vibration, for another object screening the reflector and other bright interior parts of the lamp from the products of combustion of the flame, and for a further object a new construction of lamp whose component parts admit of being easily assembled.

Figure 1 of the accompanying drawings represents a complete vertical section of a cycle-lamp constructed and made according to our invention. Fig. 2 is a horizontal section of Fig. 1 upon the dotted line x . Fig. 3 represents a front elevation of the said lamp. Fig. 4 represents the body of the lamp, with its burner-cone and chimney turned from off the gallery and from over the wick tube or casing. It also shows the reservoir and the head and guard-ring detached. Fig. 5 represents a cross-section of the lamp upon the dotted line x' , Fig. 4. Fig. 6 is an elevation of the chimney separately. Fig. 7 shows the component parts of the head separated. Fig. 8 represents the component parts of the gallery, brackets, and back-strap separately. Fig. 9 represents the ring parts surmounting the body. Fig. 10 illustrates the body separately. Fig. 11 shows the reflector; Fig. 12, the front bell and its glazed bezel; and Fig. 13 shows the burner-cone, which is made fast to the inside bottom of the body. Fig. 14 shows the component parts of the oil-reservoir. Fig. 15 shows the inner and outer

tubes of the wick-casing. Fig. 16 represents the annular baffle-tube surrounding the wick-casing. Fig. 17 represents a hollow sphere of spun metal from which the lamp-body is made by slicing segments off on the dotted lines, which converts the sphere into the form shown in Fig. 18. Fig. 19 represents the said blank with the cut edges rolled over into beads which are stiffened by inside wires which both support the edging and form a joint. Fig. 20 represents a section, and Fig. 21 a plan view, of the gallery part. Fig. 22 shows an under side plan of the gallery with the wick-casings in position. Fig. 23 is an under side plan of the foot of the lamp-body, which carries the cone of the burner. Fig. 24 is a plan of the blank from which the back-strap is made. Fig. 25 shows the blank from which the upper bracket-plate is made, while Fig. 26 is a like view of the lower bracket-plate blank. Fig. 28 is a detail view illustrating the means employed for connecting the inner and outer rings h' h^3 .

The same letters of reference indicate corresponding parts in the several figures of the drawings.

The lamp consists of a shell-body part or light-chamber a , having a foot a' upon its under side supported from the top b' of the gallery b , wherethrough the hollow and circular wick-tube c or casing and central air-shaft c' up its middle axially pass, with their upper ends c^2 c^3 extending into the mouth or circular opening d' of the cone or burner d , located within and made a stationary part of the body or light-chamber, which is formed from a spherical shell having parts or sections a^2 a^3 a^4 a^5 a^6 removed to form openings e' f' g' h^{11} a^7 for the hinged bell or front light e , the reflector f , the side lights g , the crown or head h , and foot a' of the lamp to fit within. Thus the body, which is made from a spherical shell, has at its inside bottom a burner-cone d , with a circular burner-hole d' through its middle coming coincident with the wick and with the walls stepped or shouldered at d^2 to receive and form the rest for a glass chimney i , which extends upwardly through the middle of the body and terminates in an upper and inner ring h' , having inside spring

holders or bearings h^2 and being carried by an outer and separated ring h^3 , made fast to the top a^3 of the shell-body, connected to the inner ring h^1 by bridging-webs h^{13} . A space 5 or passage j is left between these rings open to the atmosphere to admit of cooling-currents passing through the body of the lamp and of the removal therefrom of all moisture, which in ordinary lamps dulls the glazings 10 and polished surfaces, and which currents may be utilized also to promote the combustion of the burner-flame.

Fitted upon the aforesaid inner ring is a loose sleeve or guard-ring k , with its lower 15 edge k' overhanging and standing away from the outer ring, being separated therefrom by an annular space k^2 , wherethrough air-currents may pass into the interior of the lamp or ascending currents may pass outwardly for 20 ridding the interior of moisture and while the upper edge k^3 rests upon a shouldered or stepped and screwed part k^4 of the inner ring, which also receives the head or external chimney h , consisting of a conical-shaped 25 neck h^5 open at top h^6 and bottom h^7 , with the latter fitting and screwing upon the aforesaid screwed part of the inner ring. Closed to the top of the neck is a breaker h^8 , and above the breaker comes the cowl h^9 , separated from the said breaker by a space h^{10} , 30 wherethrough the products of combustion from the internal glass chimney outwardly pass.

By employing a head screwing upon the 35 sleeve surmounting the body of the lamp the said head is made detachable and the internal chimney can be readily withdrawn from the lamp for cleaning.

The front opening e' in the body of the 40 lamp, whose boundary edge e^2 is wire-beaded, has an independent cone e of the figure of a bell gapped at its inside top and bottom edges at e^3 e^4 to clear the internal glass chimney i and the burner-cone d , while fitted to and 45 hinging upon the same joint e^5 is a bezel e^6 for carrying a lens e^7 or other glazing, both cone and bezel opening independently, socketing into the beaded front opening and being fastened in common by the same catch e^8 .

50 The front a^{10} of the foot of the lamp is extended and hinged to a like extended part or annular plate b^3 , carried on the gallery, while the opening f' in the back of the body, whose edge f^2 is wire-beaded, is closed by a hinged 55 reflector f , consisting of a hollow and pierced back f^3 and edges f^4 , with a set or shoulder f^5 , formed thereon for the reception of the edges of the silvered glass or other reflector f^6 , affixed in position by turning the said 60 edges f^4 of the hollow or box back, through which air-currents may pass over the edges f^7 of the reflector.

The side lights g consist of glazed rings g^2 , with necks passed through the openings g' in 65 the body sides and closed over the edges of the same.

The gallery b consists of an inverted-hat-

shaped shell pierced at its lower edges or at front and affixed to the lower part of the wick tube or casing c by the lower end c^4 of the 70 said tube having a screwed pommel c^5 and an upper shoulder c^6 up to which the pierced bottom b^4 of the gallery comes and is there affixed by a closing operation which at the same time secures a bracket-plate m , with a 75 rearwardly-extending and lower back-strap arm m' , in position. The upper back-strap arm m^2 is formed from a back extension of the flange b^3 at the top edge of the gallery, while coming between the sleeved ends m^3 m^4 80 of the said strap-arms is a back-strap m^5 , formed alike in shape to a chair-bracket fashioned from the blank of sheet metal and turned staplewise upon itself and through gaps m^6 m^7 , in which the releasing-arm n' and 85 catch end n^2 of a fastener n for fixing the body to the gallery pass, while the stand side part n^3 of the spring rests upon and is secured to the inside back of the strap. The combined oil-tank and base o screws upon 90 the screwed pommel c^5 at the bottom of the gallery.

The body of the lamp is connected to its foot or rest a' by obliquely cutting its bottom opening a' at a slight angle, so as to cause 95 the rays of the light to be directed slightly obliquely downward instead of horizontally.

The wick-casing c is surrounded by a pierced baffle-tube p' , fitted with an ordinary 100 winder p , and is circular at top, gradually opening out to a section comprehending two-thirds of a circle at the bottom, thereby gradually converting a flat wick into a circular one.

It is understood that when the body of the 105 lamp is turned or thrown forward on its gallery for gaining access to the wick for lighting and trimming the burner-cone and the whole of the cognate parts of the lamp above the burner are carried forward with it.

The head or external chimney may be made 110 from three blanks of sheet metal, the neck h^5 being formed by a cupping process, with the middle of the bottom cut out and the other parts connected to it by closing the edges over one another. The crown is made from a hat- 115 shaped blank h^9 , while the sleeve, rings, and other junction parts of the head and body may be made by drawing and spinning processes. (See Fig. 7.)

The body or light-chamber is fashioned 120 from a die-formed or spun sphere of thin sheet metal, from which top, bottom, back, front, and side segments are removed to form openings for the bell, reflector, side lights, head and foot or base, as previously described. 125 (See particularly Figs. 17, 18, and 19.)

The foot a' is made from a circular stamping, with a neck a^{12} at the middle, (see Fig. 8,) which is passed through the hole a^7 in the foot of the body-shell and then clenched or 130 closed.

The gallery b is formed from a cup-shaped stamping (see Fig. 8) with a flanged mouth.

The wick-tube and air-shaft c c' may be

made by part stamping and part drawing-through processes and be put together without soldering by closing.

5 The oil-tank *o* is built up from two cupped stampings *o'* *o''*, (see Fig. 14,) with their meeting edges *o''* closed over each other, or it may be made from a single blank by a rolling process or by spinning.

10 The wires *q* of the beadings *q'*, surrounding the openings of the shell, which when pierced constitutes, as it were, a cage for the burner, form joints for the closure parts to turn upon. (See Figs. 10 and 12.)

15 The lamp described can be adapted for burning heavy oils, as well as paraffin and like light oils.

Having fully described our invention, what we desire to claim and secure by Letters Patent is—

20 1. In cycle and road-vehicle lamps, the combination with the lamp-body *a* provided with the burner-cone *d* and chimney *i*, of the gallery *b*, and the foot *a'* attached to the under side of the lamp-body and hinged to the gallery, substantially as described.

25 2. In cycle and road-vehicle lamps, the combination of the gallery *b* provided with wick-tubes *c*, *c'*, the lamp-body *a*, the foot *a'* fixed to the under side of the lamp-body and hinged to the gallery, the burner-cone *d* fixed to the upper open end of the foot *a'*, and the chimney *i* fitted on the burner-cone whereby, when the lamp-body is swung from off the gallery the wick-tubes are exposed, substantially as described.

30 3. In a lamp for cycles and road-vehicles, the combination with a spherical body part *a*, pierced with openings *e'*, *f'*, *g'*, *h''* and *a''*, fitted respectively with a cone *e*, reflector *f*,

side lights *g*, head parts *h*, and foot *a'*, and supporting at its upper part *a''*, inner and outer rings *h'*, *h''*, chimney-clips *h''*, guard-ring *k*, sleeve *h''*, breaker *h''* and cowl *h''*, of a gallery *b*, hinged at *a''*, to the said foot *a'*, and carrying the wick-casings *c*, *c'*, and oil-tank 45 *o*, substantially as described and set forth.

4. In cycle and road-vehicle lamps, the combination with a spherical body part *a*, pierced with openings *e'*, *f'*, *g'*, *h''*, and *a''*, fitted respectively with a cone *e*, reflector *f*, side lights 50 *g*, head parts *h*, and foot *a'*, and supporting at its upper part *a''*, the inner and outer rings *h'*, *h''*, chimney-clips *h''*, guard-ring *k*, sleeve *h''*, breaker *h''*, and cowl *h''*, of a gallery *b*, hinged at *a''* to the foot *a'* and carrying the wick-casings *c*, *c'*, baffle-tube *p'*, and oil-tank 55 *o*, and supported by bracket-plates *m'*, *m''*, in connection with a back-strap *m''*, substantially as described and set forth.

5. In a cycle or road-vehicle lamp, the combination with the bracket-arms *m'*, *m''* and back-strap *m''*, of a fastening-catch *n*, *n'*, *n''*, and clearance-gaps *m''*, *m''*, for the same, substantially as described and set forth.

6. In cycle and road-vehicle lamps, the combination with a glass reflector *f''*, of a pierced and hollow back *f''*, closed around the back edges of pierced sides *f''*, and a shoulder *f''*, turned over the edges of said reflector *f''*, substantially as described and set forth. 70

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

CHARLES ALBERT MILLER.

FREDERICK JOHN MILLER.

Witnesses:

ARTHUR T. SADLER,

ALBERT NEWBY.