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LOCOMOTIVE CAB LAMP.

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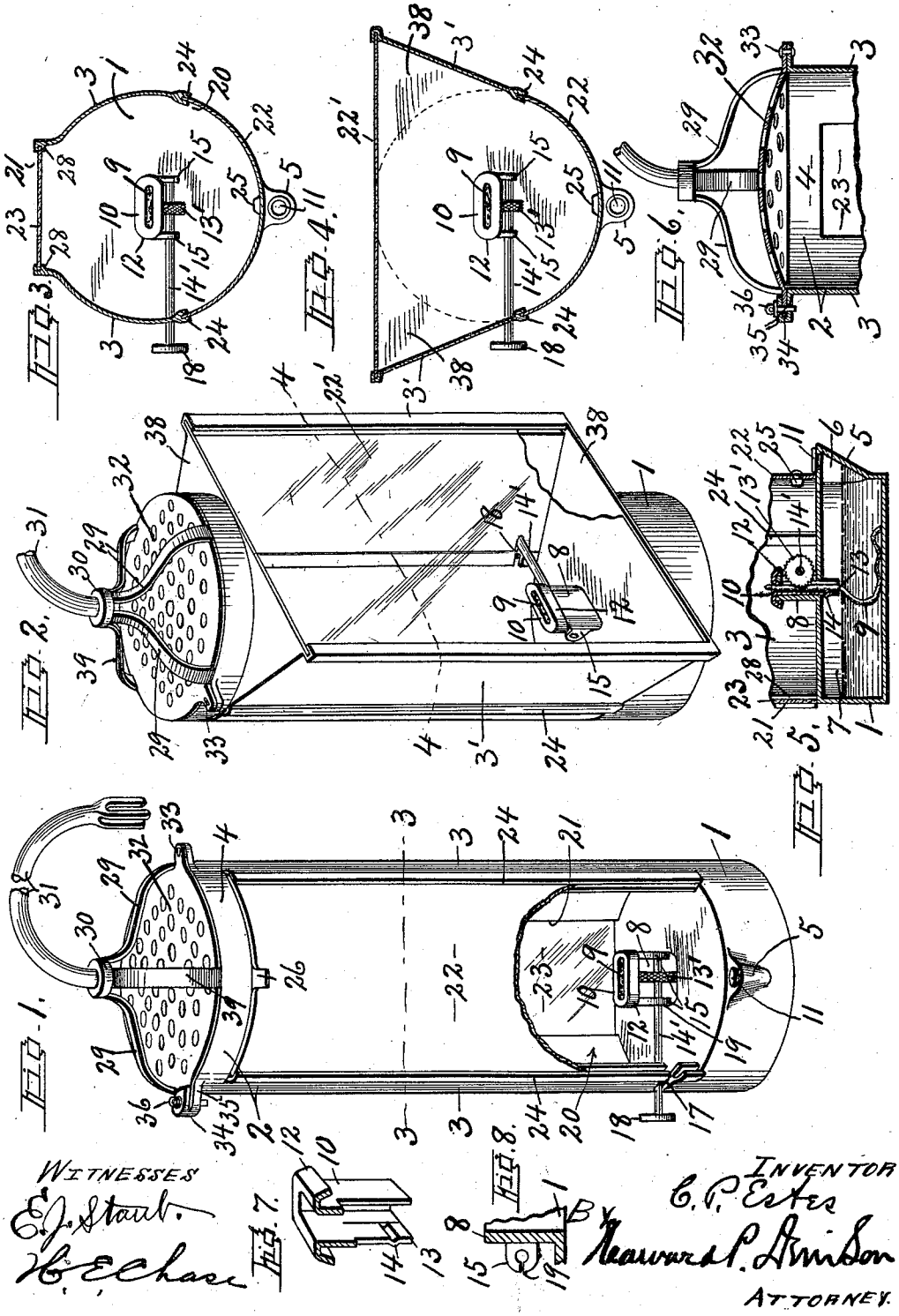
1,000,502. Patented Aug. 15, 1911.



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LOCOMOTIVE-CAB LAMP.

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To all whom it may concern:

Be it known that I, CYRUS P. ESTES, of Oswego, in the county of Oswego, in the State of New York, have invented new and useful Improvements in Locomotive-Cab Lamps, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in locomotive cab lamps of an oil burner type adapted to be suspended or supported from its upper end in such position as to concentrate its light upon the water gage and various pressure indicators which are usually located in the cab of railway locomotives. These lamps necessarily involve the use of an oil cup carrying a burner and a suitable upright frame rising therefrom for receiving and supporting a sight glass, reflector and ventilating cap or hood, all of which parts are usually made in separate pieces and it frequently happens that one or more of such parts will become displaced or lost by careless handling while the engine is out on the line with no means for resupplying these parts until some station is reached where a new lamp may be obtained. This of course is detrimental to the service and increases the dangers resulting from low water in the boiler or from ineffective steam, air and water pressures. Furthermore it is frequently necessary to clean the lamp from accumulations of its own soot and other foreign matter while the engine is in motion. In the use of the ordinary lamp, this operation is practically impossible without liability of extinguishing the flame by exposing it to the wind or blasts of air.

The main object of my invention is to make an oil cup, burner and upright supporting frame for the reflector and sight glass in a single piece of metal or other equivalent material so that they cannot separate one from the other, thereby preventing misplacement or loss of the essential parts of the lamp.

Another object is to permanently attach the ventilating cap or hood to the upper end of the frame in such manner that it may be readily shifted or rocked to one side of the frame without detachment therefrom when necessary to clean it from soot or other foreign matter in order to keep the ventilating apertures open.

A still further object is to provide the burner with a separate wick guide capable of being removed when necessary to replace the wick and at the same time provide it with self-retaining means for holding it in its operative position in the wick opening in the oil cup.

Other objects and uses relating to the specific parts of the device will be brought out in the following description.

In the drawings Figure —1— is a perspective view of a water gage lamp embodying the various features of my invention. Fig. —2— is a similar perspective view of a slightly modified form of lamp adapted more particularly for concentrating its light upon the several pressure indicators. Figs. —3— and —4— are horizontal sectional views taken respectively on lines 3—3 and 4—4, Figs. —1— and —2—. Fig. —5— is an enlarged sectional view of the oil cup showing particularly the burner, inlet and limiting stop for the upward movement of the reflector. Fig. —6— is a vertical sectional view of the upper portion of the frame showing particularly the ventilating cap or hood and its attaching means. Fig. —7— is a perspective view, partly in section of the detached wick guide. Fig. —8— is a side elevation of a rear portion of the tubular projection for the wick opening showing the split bearing.

The lamp shown in Figs. 1, 3, 5 and 6 comprises an oil receptacle or cup —1—, and an open upright frame —2— rising therefrom and comprising opposite side bars —3— united at their upper ends by an annulus or ring —4—, all of such parts being made in one piece, preferably of cast metal so as to prevent any possibility of separation of the essential parts of the lamp.

The oil cup —1— which constitutes the base of the lamp is preferably cylindrical in top plan and hollow and is provided at one side with a laterally projecting integral boss —5— having an inlet —6— opening from the top and through which oil may be introduced into the chamber —7—. The top and bottom of the oil cup are substantially flat, the top being provided with a central tubular boss —8— rising a suitable distance therefrom and having a lengthwise opening therethrough also communicating with the oil chamber —7— for the reception of a wick —9— and wick retaining tube —10—. The inlet —6— is preferably located at the back of the oil cup —1—

where it is always available for refilling without removing the lamp from its fastening and is normally closed by a removable cap —1—.

The tubular wick guide —10— is preferably made of brass or other smooth material and is closely fitted within the cast metal tubular boss —8— for the purpose of affording a freer passage for the wick therethrough than would be possible if brought in direct contact with the more or less roughened inner surface of the tubular guide —8—. This wick guide —10— is preferably removable with the wick therein to permit the wick to be more readily inserted therethrough and for this purpose is provided at its upper end with overturned flanges —12— fitting around and upon the end of the tubular projection —8— while the lower end extends through and some distance beyond the under side of the top of the oil cup —7— and is provided with a spring tongue —13— having a laterally projecting shoulder —14— for engagement with the under side of the adjacent portion of the top for frictionally retaining the tube in its adjusted position against accidental upward displacement. The overturned flanges —12— serve as a convenient hand-piece whereby the operator may readily remove said tube when desired to remove the old wick and replace it with a new one.

The wick may be raised and lowered by means of a knurled wheel —13′— projecting through suitable slots in one side of the tubular wick guides —8— and —10— and secured to a suitable spindle —14′— which is journaled at its inner end in bearings —15— on the corresponding side of the tubular guide —8—, said spindle extending outwardly through an open side slot —17— in one of the upright sides —2— just above the oil cup where it is provided with a hand-piece —18— for rotating a spindle and its wick operating wheel —13′—. The bearing —15— nearest the handle is preferably split through one side at —19— to permit the insertion of the spindle with the wheel thereon after which the opposite portions of the bearing are pinched together to retain the spindle therein.

The slot in the tubular wick guide —10—, into which the wick operating wheel —13′—, projects preferably extends to the bottom thereof to allow said tube to be removed and reinserted when necessary without disturbing the position of said wheel.

The frame —2— is provided with vertically elongated openings —20— and —21— in the rear and front thereof extending from the top of the oil cup —1— to the under side of the ring —4— between the rear edges and front edges respectively of the upright frame bars —3—, said openings being normally closed by a reflector —22— and a glass plate —23—. The reflector —22— preferably consists of a nearly semi-cylindrical plate of sheet metal or other suitable material movable vertically in upright guide-ways or grooves —24— in the rear edges of the frame bars —3— as best seen in Figs. —1— and —3—. It is prevented from being withdrawn by one or more stop-shoulders —25— preferably projecting inwardly from one or more sides thereof as best seen in Fig. —5— and adapted to engage the lower edge of the annulus —4— just before the lower edge of the reflector is withdrawn from the upper ends of the guides —24—, thereby preventing removal of said reflector from the lamp. The object of this relative mobility of the reflector is to permit access to the interior of the lamp when desired for cleaning purposes or for adjusting the wick and for this purpose it is provided at its upper end with a suitable lip or hand-piece —26—, it being understood that the reflector is normally closed and has its inner face coated with a reflecting medium.

The transverse width of the front opening —21— and its sight glass or other transparent closure is somewhat less than the rear opening —20— so as to more effectively concentrate the reflected rays of light throughout the length of a water glass with which this lamp is more particularly adapted to be used. This glass —23— is also movable vertically and adapted to be removed and replaced by a new one when broken or otherwise impaired and for this purpose is mounted in suitable guides or grooves —28— in the front edges of the frame bars —3—, the lower edge of the glass plate normally resting at the bottom upon the upper face of the top of the oil cup —1— or upon suitable stops at the bottom of the guide grooves —28—.

Rising from the upper edge of the frame —2— and preferably integral therewith is a series of, in this instance, three arched bars —29— united to each other directly over the center of the frame by a suitable hub —30— having a central aperture for the reception of a supporting arm —31— adapted to be secured to a bolt or other suitable fixture in the cab or upon the boiler in such manner as to concentrate the rays or light from the lamp directly upon the water tube.

In this class of lamps it is necessary to provide some means for ventilating the heat produced by the burner and for this purpose I have provided the upper end of the frame —2— with a perforated cap —32— resting on the top edge of the frame below and between the lower ends of the arched bars —29— and normally covering the upper open end of said frame except for the perforations therein, said cap being preferably

concavo-convex in cross section with its concave face at the bottom for the reception and collection of any soot which may accumulate thereon. In order that the under side of the plate may be cleaned from such soot or other foreign matter, it is movable laterally from its normal position to one side of the frame where the soot may be readily removed by any suitable means without liability of its falling into the interior of the lamp and for this purpose the cap is hinged at —33— to one side of the lamp and has its opposite side provided with a laterally projecting apertured lug —34— which rides between suitable ears or lugs —35— on the corresponding side of the frame —2— to normally hold the cap against vertical vibration, said cap being additionally held in place by a locking pin —36— which is passed through apertures in the lugs —35— and through the corresponding aperture in the lug —34— as best seen in Figs. —1— and —6—.

The lamp shown in Figs. —2— and —4— is substantially the same as that shown in Figs. 1, 3, 5 and 6 except that the glass front and opening therefor is considerably wider so as to afford a wider divergence of the reflected rays of light and for this purpose the upright frame is provided with forwardly diverging sides —3'— extending from the top of the cup —1— to the under side of the ring —4— forming an intervening opening across the front considerably wider than the opening —21— for receiving a larger plate glass —22'— which is of greater width than the diameter of the cup —1— or ring —4— and therefore the front edges of the side pieces —3— extend some distance laterally beyond the corresponding sides of the cup and ring and are connected thereto at the top and bottom by webs —38—.

The ventilating cap —32— is provided with an upwardly projecting arched arm —39— similar to the arms —29— but separate from the hub —30— so as to open with the cap, the only object in providing this arm being to preserve the symmetry in the arrangement of the arms.

The object in making the cap —32— concavo-convex with its concave side at the bottom is to allow said cap to be opened across the upper edge of the ring —4— without liability of scraping the soot therefrom into the interior of the lamp so that when the cap is swung laterally to its full open position to one side of the lamp, the soot may be readily removed therefrom by any suitable cleaning means.

It will also be observed that by supporting the lamp from the top by means of the supporting member —31—, a clear vision is afforded from below to the water gage through the space between the lamp and said gage which are generally located overhead in the cab.

It is now clear that by making the essential parts of the lamp, namely, the oil cup —1—, side pieces —3— and top ring —4— in a single piece of cast metal, there is no liability of these parts becoming detached and misplaced and that by securing the several movable parts in the manner described, such parts will also remain in operative connection with more essential elements of the lamp, thereby reducing the liability of any of the parts becoming misplaced either maliciously or accidentally.

The operation of the device is clearly set forth in the foregoing description and while I have shown and described specific forms of the several parts, it is evident that they may be changed somewhat without departing from the spirit of this invention.

What I claim is:

1. A locomotive cab lamp comprising a one-piece frame having an oil chamber in its bottom and vertical openings in its front and rear sides, a reflector movable across the rear opening, a transparent plate across the front opening and a ventilator cap across the top of the frame.

2. A locomotive cab lamp comprising a one-piece frame having an oil chamber in its bottom and a vertically elongated opening in one side, a transparent plate covering said opening, and a ventilator cap hinged to the top of the frame.

3. A locomotive cab lamp comprising a one-piece frame having an oil chamber in its bottom and vertical openings in its front and rear sides, a reflector movable across the rear opening, a transparent plate across the front opening, a ventilator cap hinged to the top of the frame, arms secured to the frame and converging upwardly above the ventilator cap, a hub joined to said arms above said cap, and supporting means for the lamp secured to said hub.

In witness whereof I have hereunto set my hand on this 22d day of September 1910.

CYRUS P. ESTES.

Witnesses:
H. E. CHASE,
E. A. SPEARING.