

W. TRABUE.
LANTERN FOR BICYCLES.

No. 564,662.

Patented July 28, 1896.

Fig. 1.

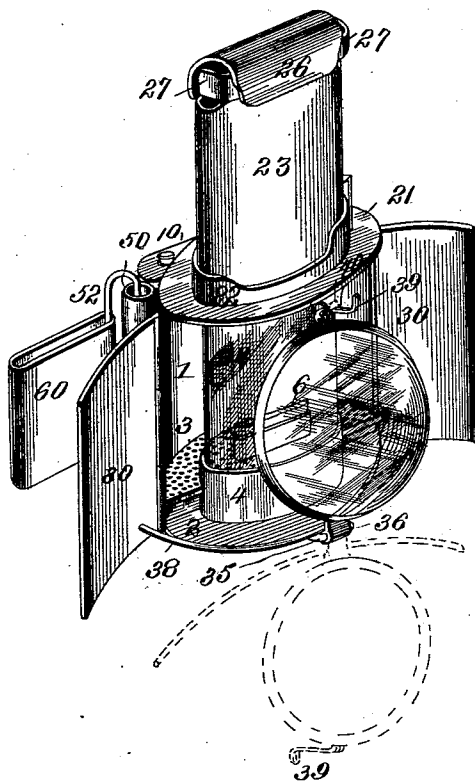


Fig. 2.

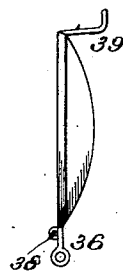


Fig. 3.

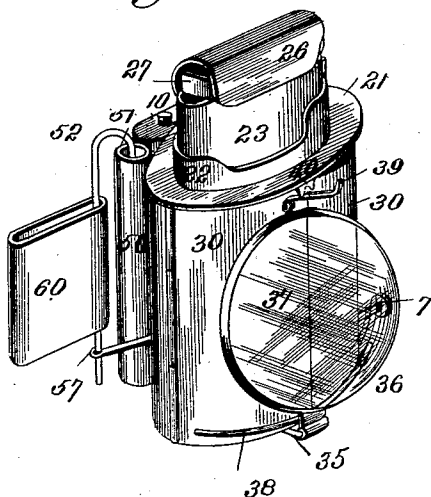
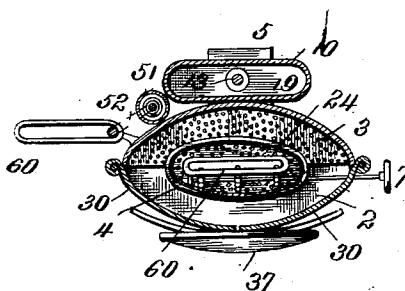


Fig. 4.



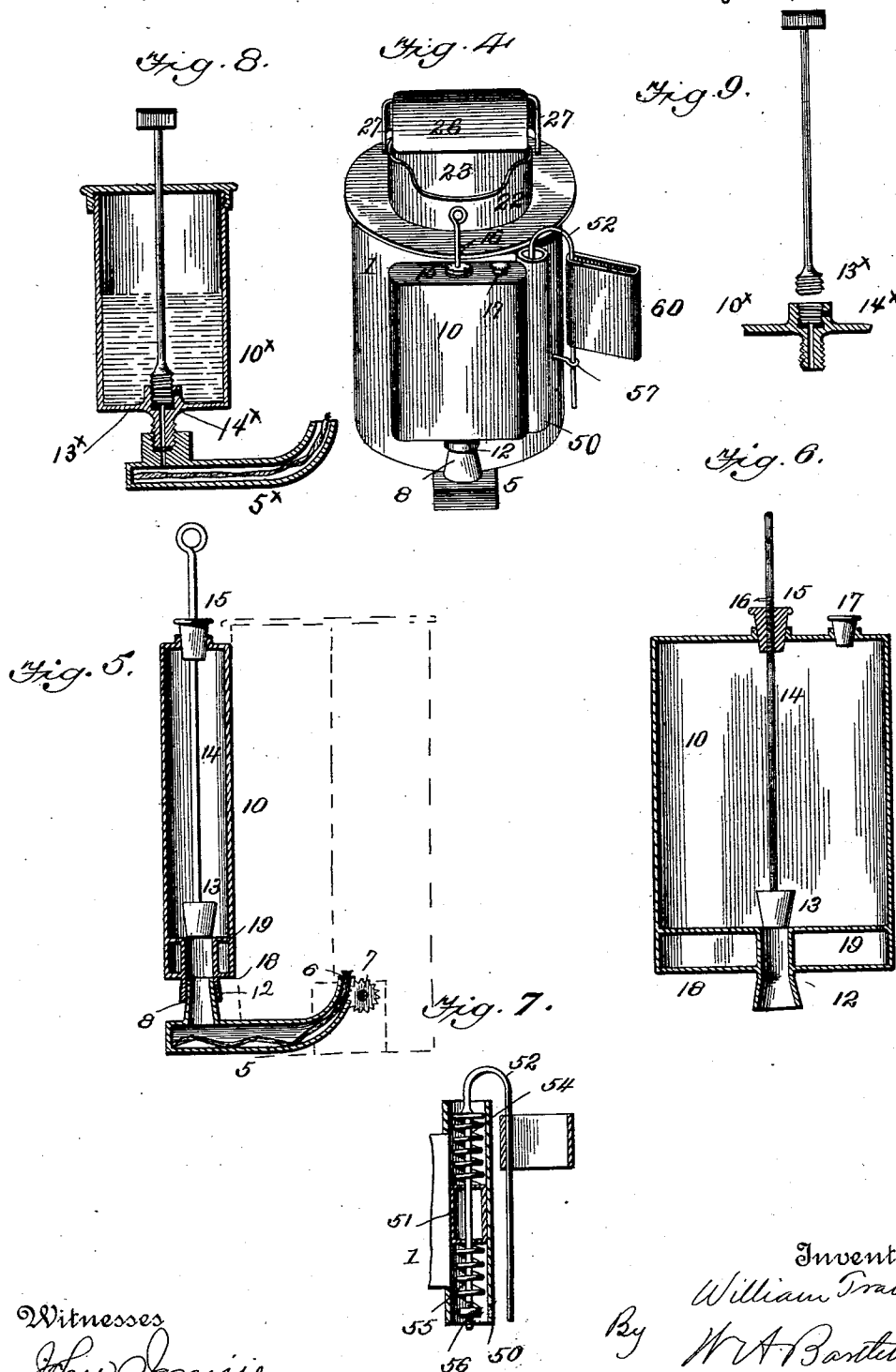
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UNITED STATES PATENT OFFICE.

WILLIAM TRABUE, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO CURRAN POPE, OF SAME PLACE.

LANTERN FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 564,632, dated July 28, 1896.

Application filed August 15, 1895. Serial No. 559,415. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM TRABUE, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Lanterns for Bicycles, &c., of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to lanterns especially intended for use on bicycles.

The object of the invention is to produce a lantern which may be closed to prevent the radiation of light, or be thrown open and the doors or shutters act as reflectors; also, to make a lantern in which the oil-supply may be regulated from outside the body of the lantern; also, to improve the chimney, supports, and various other parts of the lantern, as will be hereinafter explained.

Figure 1 is a perspective view of the bicycle-lantern with reflectors thrown out and chimney extended. Fig. 1^a is a detail section of the lens and door holding device. Fig. 2 is a perspective of the lantern in closed position. Fig. 3 is a cross-section near the bottom of the lantern. Fig. 4 is a rear perspective of the lantern with chimney closed down. Fig. 5 is a detail section or diagram of oil chamber, reservoir, and connections. Fig. 6 is a vertical central section of oil-reservoir at right angles to the same parts shown in Fig. 5. Fig. 7 is a detail section of the supporting spring link or attachment. Figs. 8 and 9 are sectional details of a modification of the oil-reservoir.

The lantern-back 1 is preferably a curved plate of thin metal.

The bottom 2 of the lantern conforms to the shape of the back and shutters, and is preferably imperforate at the front part of the lantern, while it is perforated at the rear part or behind the wick-tube, as indicated at 3. The back or perforated part 3 of the lantern-bottom may also be on a higher plane than the front part, leaving a convenient space for the wick-tube to pass under the same. A collar 4 extends upward from the lantern-bottom, and the wick-tube is within this collar, which is at the base of the chimney and is ventilated at suitable points, especially behind the wick-tube.

The integral wick-tube 5 passes under the perforated part 3 of the floor and has an up-turned burner 6, which is as nearly central as may be in the collar 4. This burner is provided with usual means, as 7, for lifting or lowering the wick. The wick-tube 5 extends to the rear of the lantern, under the bottom thereof, and turns up at front to form the burner and at the rear to connect with the fuel-reservoir, as indicated at 8. The wick-tube is therefore the oil-chamber, but of small capacity, being in effect an inverted siphon, and communicating at one end with the burner and at the other end with the oil-reservoir. The upper end of the extension 8 of the wick-tube is preferably tapered, as shown, so as to make a tight joint with the oil-reservoir when the same is applied thereto.

The detachable oil-reservoir 10 is a vessel of any suitable form, having an opening through its bottom, and preferably a tapered collar 12, which will tightly fit the tapered extension 8 of the wick-tube.

I have devised several means for making a close joint between the detachable oil-reservoir and the extension of the wick-tube, as by the use of rubber or other packing, or by screwing the reservoir onto the extension. It is deemed sufficient to state that the reservoir 10 is detachable, but when applied to the extension of the wick-tube the reservoir will be held firmly and a tight joint be had.

The hole in the bottom of reservoir 10 is provided with a valve 13, which can be raised or lowered by turning rod 14, attached to the valve and extending through the stopper 15, at the top of the reservoir, the valve-stem having screw-thread engagement with said stopper. The valve-stem may have an indicator 16 attached, to show approximately the amount of oil-supply due to the position of valve 13.

The reservoir 10 is shown with a double or false bottom 18 19, but the reservoir may be made without this feature. The reservoir is also shown with a filling-stopper 17.

In the Figs. 8 and 9 the valve 13^x engages a screw-threaded seat 14^x, and the reservoir 10^x may be attached to the wick-tube 5^x by a screw-thread.

By reason of having a separate reservoir,

it is unnecessary to have a large oil-supply in the wick-tube, and the oil in the reservoir is kept relatively cool. By reason of the detachability of the reservoir, it is but little trouble to renew the oil-supply, and combustion can be regulated not only by turning the wick up and down, but by regulating the supply to the wick.

The top 21 of the lantern has an opening therein, which opening is preferably surrounded by a chimney-guard 22. The chimney 23, of thin metal, fits inside this guard and may be raised up to project almost its entire length above the lantern-top, thus increasing the draft, or the chimney may be telescoped into the body of the lantern, as in Fig 2. The fit is generally close enough to retain the chimney up or down without fastening devices.

A transparent glass or mica chimney 24 surrounds the burner and enters the lower end of telescope-chimney 23, and is supported by collar 4. This transparent chimney need seldom be removed.

The chimney 23 has a cowl or cover 26, and wind-guards 27 extending backward over the open ends of the cowl.

The front part of bottom plate 2 forms a support for the doors or reflectors 30. These doors are hinged at the edges of the lantern-back 1, and are swung open when it is desired to show a light. The doors are concave on the inside, and when thrown open form extensions of the back. The doors and back should be bright on their inner surfaces.

A hinge-piece 35 projects from the bottom of the lantern forward in front of the closed position of the doors. A frame 36 is hinged to this extension, and said frame carries a lens 37. The frame and lens may be turned down, as indicated in dotted lines, Fig. 1, when the doors 30 may be opened or closed. When the doors are opened, a brace pin or wire 38, which is swiveled to turn on the frame 36, may be turned so as to hold the doors open. (See Fig. 1.) The frame 36 can be held up by a catch 39, engaging a lug 40 at the front of the lantern, and when so engaged the lens will be in front of the burner of the lamp.

It is intended that the lens shall be carried in turned-up position habitually, whether the reflecting-doors are open or closed, the lens being turned down only for the purpose of opening or closing the doors, unless it be desired to use the lantern without the lens or bull's-eye.

When the doors are closed, the lens turned up over them, and the chimney lowered, the lantern is exceedingly compact.

To prevent vibration the lantern is provided with an elastic attachment or means for connection with the bicycle. A small tube or cylinder 50 is rigidly secured to the lantern, preferably in the back thereof. This cylinder has a partition 51. A bent rod 52 passes through the cylinder and through this

partition, so as to permit an easy vertical movement of the rod. A coil-spring 54 is confined between an enlargement or collar on the rod and the partition and above said partition, and a coil-spring 55 is held below the partition above nut 56, which engages the rod. The rod 52 is thus held in balanced position or equilibrium between the two springs. Any excess of pressure tending to displace the rod relatively to the lantern, or vice versa, will be in opposition to the springs. The rod 52 is turned down through bracket 60, which represents a fixture on the bicycle, and the rod is supported below said bracket by a brace, catch, or hook 57. The bent or U-shaped rod 52 has one leg in the cylinder 50, which is held by the counterbalancing-springs. The other leg, which passes through catch or hook 57, may be lifted out of said catch by compressing the upper spring to a degree in excess of the ordinary vibration of said spring.

Many changes and modifications may be made without departing from the spirit of my invention, the description herein given relating to the best form of the device now known to me, but not the only form.

The arrangement to exclude the air from the bottom at the front side of the burner is particularly valuable in a bicycle lantern, which is carried swiftly through the air and with the illuminated side forward. In many lanterns as now constructed this draft from the front frequently blows out the light.

The extensible opaque chimney serves as a draft-regulator, and may also serve to obscure the light from the upper part of the transparent chimney when it is desired to prevent the light from shining upward.

The brace which supports the reflecting-doors can be made of such length to give the doors the proper direction to act as reflectors.

What I claim is—

1. In a bicycle-lantern, the lantern-bottom having its rear section on a higher plane than the front section thereof, said rear section being perforated and the front section imperforate, a collar within the lantern-bottom, and extending up from the perforated and imperforate portions, the wick-tube within the collar, and ventilating-apertures in the covering of said collar, around the wick-tube, all combined substantially as described.

2. In a lantern, the lantern-body having an opening therein surrounded by a chimney-guard, the imperforate chimney of thin metal adapted to slide up or down in said guard, and the burner inside the lantern provided with a permanent transparent chimney, all combined for operation substantially as described, so that the metallic chimney may close over and obscure, or form an extension of the glass chimney, as set forth.

3. In a lantern, the casing, the transparent chimney, the burner in said chimney, and the imperforate metallic tube telescoping with said chimney, said tube passing through an

opening in the top of the casing and provided with wind-guards at its upper end, all combined substantially as described.

4. In a lantern, the combination of the back and burner, the doors hinged to the back and closing the front of the lantern to obscure the light, and the locking-brace whereby the doors may be held extended to act as reflectors about at the sides of the burner, substantially as described.

5. In a lantern, the combination of the casing having hinged doors or shutters, closing to cover the entire front of the lantern, and the lens hinged to the frame in front of the doors in position to swing out of the way thereof, substantially as described.

6. In a lantern, the combination of the casing, hinged doors, and lens hinged in front of the doors, and the door-brace connected to the lens-support, all substantially as described.

7. In a lantern, the casing, burner, and transparent chimney over the burner, the doors hinged to the side of the casing and closing or obscuring the lantern in front of the chimney, or opening outward to form re-

flectors, and the lens hinged to the bottom of the casing to swing downward out of the way of the doors, all combined substantially as described.

8. The combination with the lantern-body of the integral wick-tube having upturned ends, the detachable oil-reservoir making a close joint with the upturned rear end of the wick-tube, and the valve controlling the passage of oil from said reservoir to said wick-tube, all substantially as described.

9. The combination with the lantern-body of the integral wick-tube having upturned ends, the front end serving as a burner, the rear end of said tube upturned outside the lantern-body and tapered, and the detachable oil-reservoir having a tapered collar forming a close joint with said tapered wick-tube, all substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM TRABUE.

Witnesses:

T. E. DENNIS,
J. T. FUNK.