

UNITED STATES PATENT OFFICE.

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ONE-HALF TO HARRIE B. HART, OF SAME PLACE.

BICYCLE-LAMP.

SPECIFICATION forming part of Letters Patent No. 551,083, dated December 10, 1895.

Application filed February 16, 1895. Serial No. 538,606. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. LEHMAN, a citizen of the United States, residing at the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Bicycle-Lamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

10 Figure 1 is a sectional side elevation of a bicycle-lamp in which my invention is embodied; Fig. 2, a plan view, the top being removed; Fig. 3, an elevation of the oil-receptacle and adjuncts detached, a slightly-different form of the cone C being shown in this figure; Fig. 4, a longitudinal section, enlarged, of the junction of the lens with the holder or cone, showing the devices for retaining the lens detachably in place; Fig. 5, a detail of the device for securing the detachable top to the lamp-cylinder.

25 The object of this invention is to improve the construction of bicycle-lamps in certain particulars, as hereinafter described and pointed out.

30 The main improvement relates to means for connecting the lamp to the bracket or arm which secures the lamp to the bicycle, whereby a yielding oscillating movement in the arc of a circle is permitted to the lamp by the jolting of the bicycle in passing over obstructions in a manner to obviate the extinguishing of the light, which frequently happens with the double-spring suspended lamps heretofore in use, which under similar circumstances vibrate vertically, or thereabout.

35 This feature of the invention consists in pivoting or hinging one end of the supporting-bracket to the lamp (the other end being secured or adapted to be secured to the bicycle) and maintaining the latter, so pivoted, in about a normally vertical position by means of a spring connecting the lamp and bracket or interposed between the same.

45 The invention consists finally in certain minor combinations and constructions, which will be hereinafter described and duly pointed out.

50 Now referring to the annexed drawings, A is the usual lamp-cylinder; B, the detachable oil-vessel; C, the burner.

D is a bifurcated bracket, the outer end of which is adapted to be clamped to a standard e, Figs. 1 and 2, of the bicycle or other brake-rod by means of clamp screws or bolts *d'* or otherwise. The other end of the bracket, which as a matter of convenience may be angular or bent downwardly, as seen in Fig. 1, is pivoted on a pin *a'* to the side of the cylinder A, or rather, in the present instance, to a lug *a''*, which is itself fastened to or projects from the cylinder.

S is a spiral spring, one extremity of which is attached to the cylinder, the other to the bracket, as shown in Figs. 1 and 2.

65 When the lamp is in place on the bicycle, it will be substantially in the position of Fig. 1—that is, vertical. When, however, the bicycle-wheels pass over an obstruction and thus cause a jolting or jarring of the lamp, and consequently the flame thereof, the lamp will swing in the arc of a circle of which the pivot-pin *a'* is the center, in contradistinction to the sharp nearly-vertical vibrations in the constructions heretofore known to me, and I have found by numerous trials under varied conditions that the light will not be extinguished by the described oscillating motion, as is the case with the prior constructions above referred to.

80 I here remark that I do not wish to be understood as limiting myself to the arrangement of bracket and spring shown in the drawings, as it would seem obvious that various other arrangements, forms, and applications of spring may be employed without departing from the essential principle or mode of operation of this important feature of my invention. It is preferred, however, to pivot the bracket to the cylinder, as shown in the drawings—that is, at a point below the plane of the burner.

85 F is the holder for the lens L and is of the usual tapering or conical form. On the inner side of the periphery of this holder or cone frustum I make a continuous groove *f'*, back of which is an offset *f''*, Figs. 1 and 4, which forms a stop for the lens. In this groove when the lens is in place I spring a split ring R, which, it is obvious, serves to retain the lens in place, yet allowing it to be readily detached for cleaning or other pur-

poses by simply removing the ring by contracting its diameter, which is done by springing the free ends together.

In order to protect the inside face of the lens from smoke from the lamp I secure in any suitable manner a disk G, of translucent glass or the like, to the inner end of the holder F. *xx* are a series of small orifices in the side of the latter, each series communicating with the space between the glass disk and the lens, whereby the outside air may pass into the cylinder A.

The reflectors of bicycle-lamps in general use are liable to be injured or dulled from the considerable heat of the lamp. In order to obviate this, I secure in front of the reflector H a protecting-disk I, of glass or the like transparent material, whereby, also, an air-space *y* is left between the disk and the reflector. In this way the surface of the latter is protected and its brightness preserved. The means I usually adopt for securing the said glass disk to the reflector-plate is by a series of lugs *z* in the latter, which are bent over the edge of the disk.

J is a circular plate adapted to enter the bottom of cylinder A and to fit snugly therein, and to which it is detachably secured by means of a suitable spring-catch *a*³. This plate is provided with posts *j*¹, whereby it is sustained by and secured to the top of the oil-receptacle. It has also, usually, a downwardly-projecting circumferential flange *j*², the lower edge of which is some distance above the oil-receptacle, as shown, so as to allow free passage of air between the two. I usually make this plate with its flange of an integral piece struck up from sheet metal.

The oil-receptacle has the usual central-draft tube *k*. *t* is the wick-tube, which is surrounded by the plate J, through which said tube passes and above which it extends. The wick *w* is adjusted by the ordinary toothed wheel operated by a nut *n*. The burner or hood C is secured to the top of the plate J to one side of the center thereof. In the center of the plate is a small orifice *o*, whose purpose is to allow the passage of a quantity of air from the draft-tube and the open space between the plate and the top of the oil-receptacle into the cylinder adjacent to the wick.

Another minor improvement consists in providing near the top of the lamp-cylinder a teat or offset *q*, Figs. 1, 2, and 5, in connection with a circumferential groove *q*¹, near the lower end of the detachable top portion U. The object is to facilitate the attaching of the latter to the cylinder. This may be quickly done by bringing the part U over the top of the cylinder at an angle, so as to allow the teat *q* to enter the groove at any point,

the top being also held by the usual spring-catch *r*, which is opposite to the said teat or offset.

In previous constructions known to me there was used a pin projecting from the side of the cylinder near the top and an aperture in the side of the detachable part U. This, however, necessitated the bringing of the latter around to a particular point before it could be secured to the cylinder. In my improved construction this is obviously unnecessary. This improvement may also be applied with the detachable oil-vessel B.

Having thus described that form of my invention which I believe to be most desirable, I claim as new and desire to secure by Letters Patent—

1. The herein described means for attaching a lamp to a bicycle, which consists in the combination with the lamp of the fixed bracket having one end pivoted to the lamp, and a supporting spring, whereby the lamp may oscillate in the arc of a circle whose center is the axis of the connection between said bracket and lamp.

2. The combination with a bicycle lamp, and with the bicycle frame, of a forwardly projecting bracket whose rear portion is fixed, or designed to be fixed, rigidly to said frame, and whose forward end portion is pivoted directly to the lamp, or to rigid projections thereof, below the plane of the burner, together with a spring having one end thereof secured to the bracket, and the other end to the lamp above the pivoted connection with the bracket, said lamp being arranged to oscillate in the arc of a circle whose center is the axis of the said pivotal connection, substantially as specified.

3. The combination with a bicycle frame having a rigid, forwardly projecting bracket fixed thereto, of a lamp pivoted directly to the said bracket and a spring attached to the lamp and to the bracket, said lamp being thereby capable of oscillating in an arc of a circle whose center is the axis of its pivotal connection with the said bracket, substantially as specified.

4. In a bicycle lamp, the combination of the cylinder provided with an off-set on one side, a suitable catch opposite thereto, and the detachable portion having a circumferential groove adapted to receive said off-set on the cylinder, as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

JOSEPH H. LEHMAN.

Witnesses:

WALTER C. PUSEY,
GEO. W. REED.