(No Model.)

A. C. DAVISON.

LAMP FOR VELOCIPEDES.

No. 488,626. Patented Dec. 27, 1892.

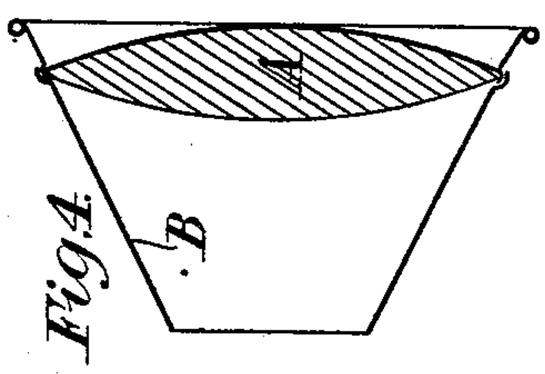

Fig.4.

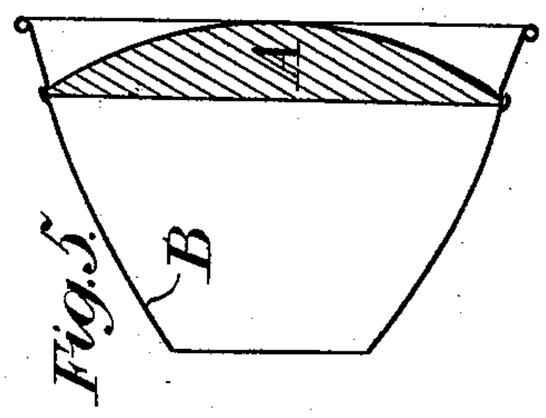

Fig.5.

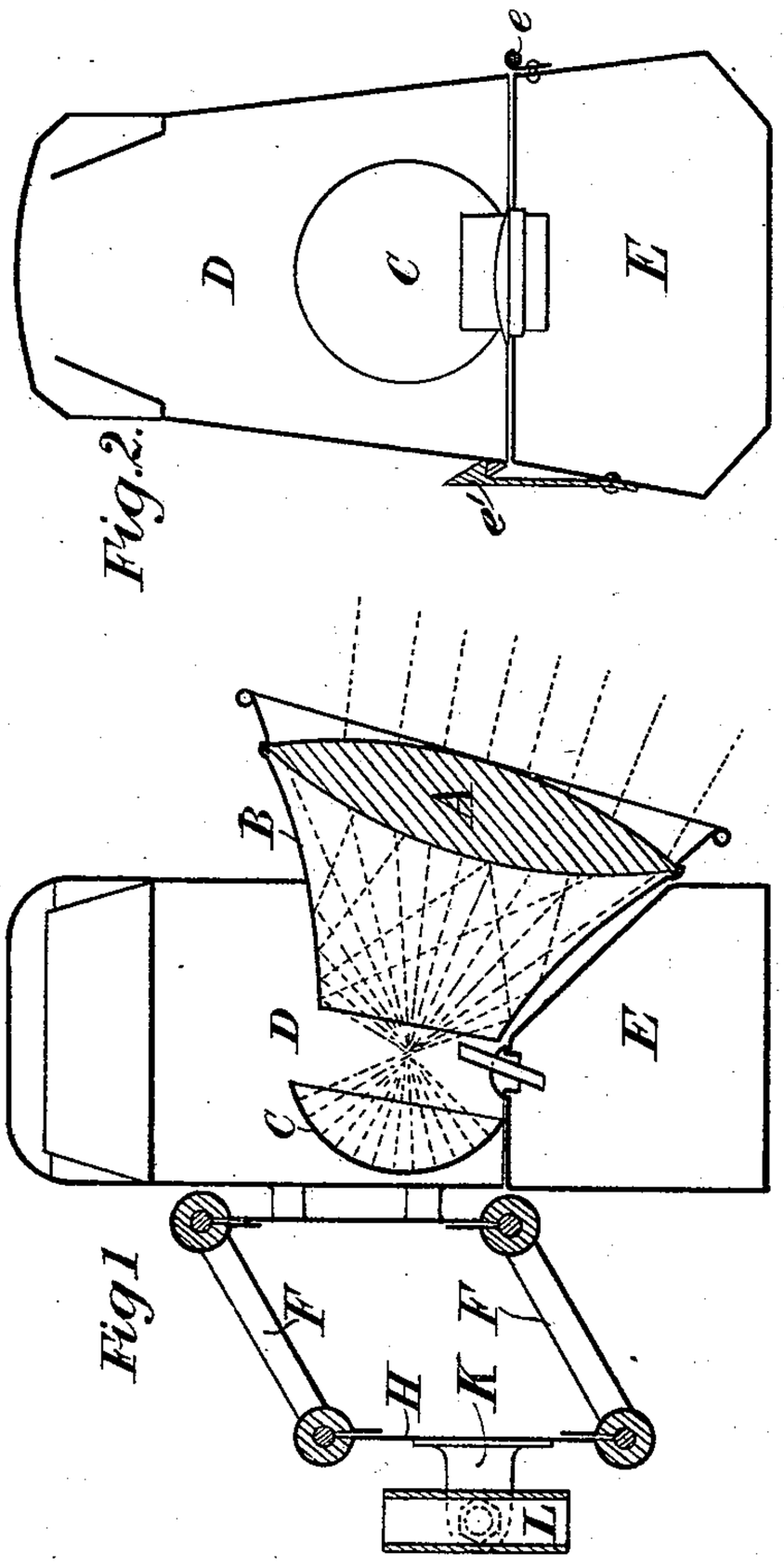

Fig 1

Fig.2.

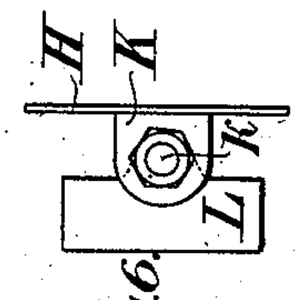

Fig.6.

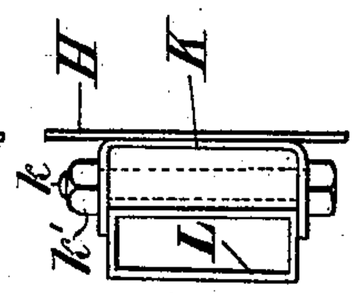

Fig.7.

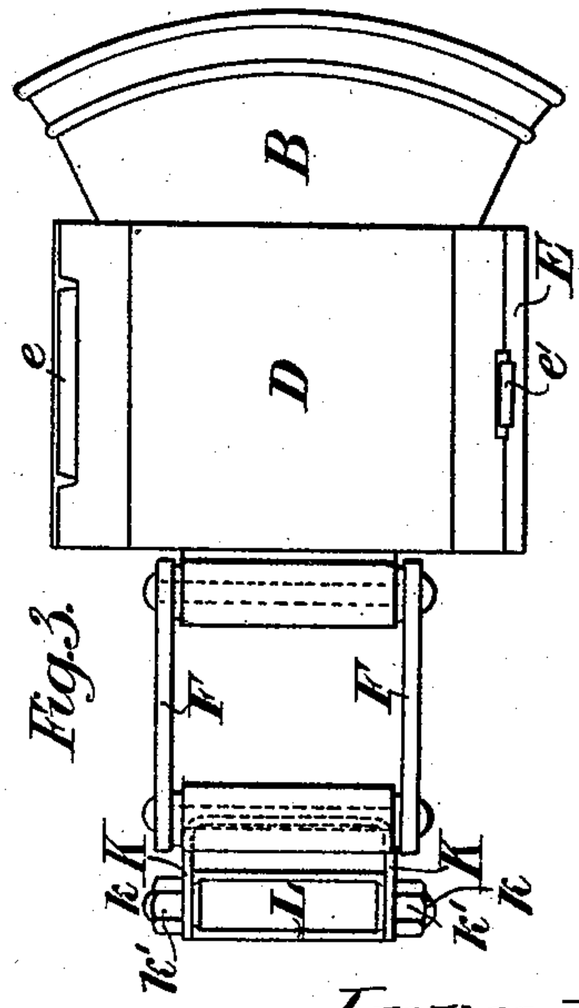

Fig.3.

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UNITED STATES PATENT OFFICE.

AUGUSTINE CAMPBELL DAVISON, OF LONDON, ENGLAND.

LAMP FOR VELOCIPEDES.

SPECIFICATION forming part of Letters Patent No. 488,626, dated December 27, 1892.

Application filed January 21, 1891. Serial No. 378,575. (No model.) Patented in England March 30, 1889, No. 5,470.

To all whom it may concern:

Be it known that I, AUGUSTINE CAMPBELL DAVISON, a subject of the Queen of England, residing at London, in England, have invented certain new and useful Improvements in Lamps for Velocipedes, (for which I have obtained Letters Patent of England, No. 5,470, dated March 30, 1889,) of which the following is a specification.

This invention relates to lamps for bicycles, tricycles, and other velocipedes and consists firstly in means for improving the light given by a lamp by collecting and uniformly distributing more of the rays of light than usual. Secondly in a method of constructing the body of a lamp so as to simplify it and to allow of a larger oil reservoir being used without increasing the size of the lamp. Thirdly in a means of setting the lamp at any vertical angle with respect to the carrying socket.

To secure the first essential I proceed as follows;—In place of the usual glass I use a lens. I prefer to make the said lens of the ordinary double-convex form but an ordinary plano-convex lens may be used. I place the aforesaid lens at a suitable distance from the flame so as to refract the divergent rays of light proceeding from the flame into a beam of light of a conical form and uniform distribution gradually widening from the lamp. I fix the aforesaid lens in the wider end of a truncated conical or nearly conical mount which forms a reflector, the truncated end of the said mount being close to the flame. At the back of the flame is a concave reflector, the curvatures of the said reflector and the inclination of the aforesaid conical mount, or the curvature of the aforesaid nearly conical mount being such that the light incident upon them, and reflected by them, conspires with the light refracted by the lens to produce the conical beam of light hereinbefore referred to.

To secure the second essential I proceed as follows;—I divide the lamp into two parts in a horizontal plane. The upper part consists of the lens or glass with its mount and reflector, with a casing forming the body of the lamp and holding the said parts in proper position. The lower part is formed by the oil reservoir with its burner, wick winder and fittings, and the said upper and lower parts are jointed together by a hinge placed horizontally at one side of the lamp and connecting the lower and upper edges of the upper and lower parts respectively, and are kept in juxtaposition by a spring catch, or they may be otherwise connected.

To secure the third essential I proceed as follows;—The socket plate on the back of the lamp is made to form or has attached to it two lugs projecting backward in the same horizontal plane, each lug being pierced horizontally and parallel to the back of the lamp with a hole. The hollow socket piece is of such size as to just fit between the aforesaid lugs, and has formed on it on each side a short screwed pin which passes through one of the holes in the lugs aforesaid, so that the socket piece oscillates in a vertical plane on the pins as trunnions. A nut is screwed on each of the aforesaid pins having the lug between it and the socket piece. The action is as follows;—The nuts being slackened the socket piece is turned on the pins or trunnions until the lamp makes the required angle with the said socket piece and the nuts are then tightened holding the whole firm in that position by friction.

I will now proceed to describe with reference to the accompanying drawings the manner in which my invention is to be performed.

Figure 1 represents in central vertical section a lamp constructed according to my invention. Fig. 2 is a vertical section of the lamp taken at right angles to the plane on which Fig. 1 is taken. Fig. 3 is a plan of the lamp. Figs. 4 and 5 are vertical sections of modifications of the cone and lens. Figs. 6 and 7 are an elevation and a plan respectively of a modification of that part of my invention appertaining to the socket and attachment.

Like letters of reference indicate like parts in the several figures of the drawings.

A is the lens refracting the divergent rays of light proceeding from the flame into a conical beam of light, the course of the rays being shown approximately by dotted lines in Fig. 1.

B is the cone or conical reflector containing the lens and reflecting rays of light onto the lens.

C is the concave reflector of such a shape that the rays incident on and reflected by it, are brought to a focus at the position of the

flame, the said rays then crossing and conspiring with the direct rays or with the rays reflected by the cone B to form the aforesaid cone of light beyond the lens A. The lens A and the cone B may be modified in form or outline as shown in Figs. 4 and 5 and according to the position of the light and reflector and extent of radiation of light required and still produce the desired result.

D is the upper part of the body of lamp to which are attached the cone B containing the lens A, and the reflector C.

E is the lower part of the body of lamp consisting of the oil tank or reservoir with its burner and fittings.

e is a hinge or catch connecting the parts D and E and *e'* is a spring catch keeping them in proper juxtaposition. It is obvious that the connecting parts *e* and *e'* may be modified.

The anti-vibrating attachment I make in the manner already known and as illustrated in Figs. 1 and 3, the carrying arms F terminating as usual at one or each end in a pivotal pin working through an indiarubber bushing or sleeve bearing.

The socket plate H has attached to it or formed on it two lugs K projecting backward and containing between them the socket piece L. On each side of the socket piece a short screwed pin *k* is formed and projects through a hole in the lug K. For convenience one or both of these screwed pins *k* may be independent of L and pass through L from the inside as indicated on one side of L in Fig. 3. Upon the pins *k* nuts *k'* are screwed, gripping when tightened the lugs K between themselves and the socket piece L, so that by tightening the nuts *k'* the socket piece L is fixed at any required vertical angle, within limits with regard to H. Figs. 6 and 7 show a modification of the arrangement in which one bolt *k* is substituted for the two short screwed pins before referred to.

It will be obvious that a plain glass may be substituted for the lens at a cost of some efficiency.

I claim;—

1. In a velocipede lamp, the combination with the lamp case and spring carrying arms therefor, of the socket piece adapted to support the whole lamp, and an adjustable connection between the carrying arms and socket piece formed by the lugs at each side of the socket and the bolt passing through the lugs to hold the lamp in adjusted position; substantially as described.

2. In a velocipede lamp the combination of a socket L lugs K screwed pins *k k* and socket plate H constructed arranged and operating substantially as and for the purpose hereinbefore set forth.

In testimony whereof I have hereto set my hand in the presence of the two subscribing witnesses.

AUGUSTINE CAMPBELL DAVISON.

Witnesses:

ALFRED J. BOULT,

HARRY B. BRIDGE.