

G. S. SHERMAN.
LAMP ATTACHMENT FOR VEHICLES.
APPLICATION FILED JAN. 2, 1909.

1,028,144.

Patented June 4, 1912.

2 SHEETS-SHEET 1.

Fig. 1.

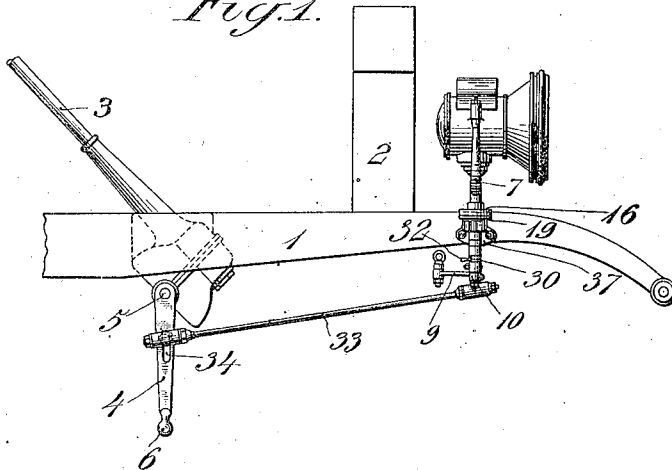


Fig. 2.

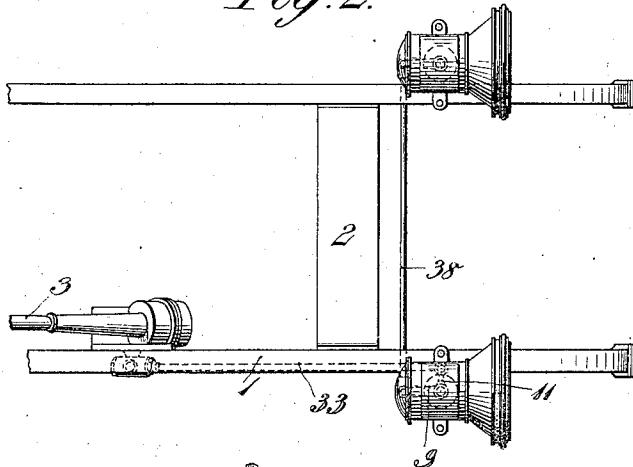
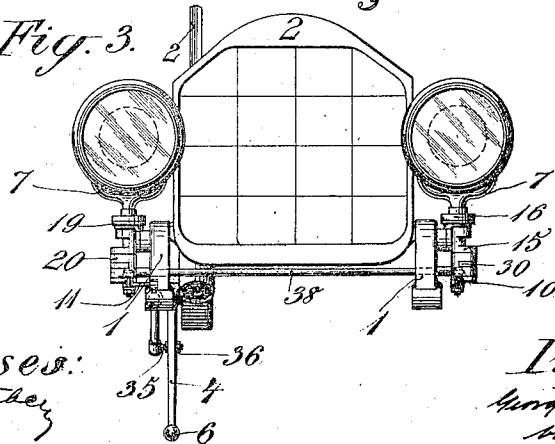


Fig. 3.



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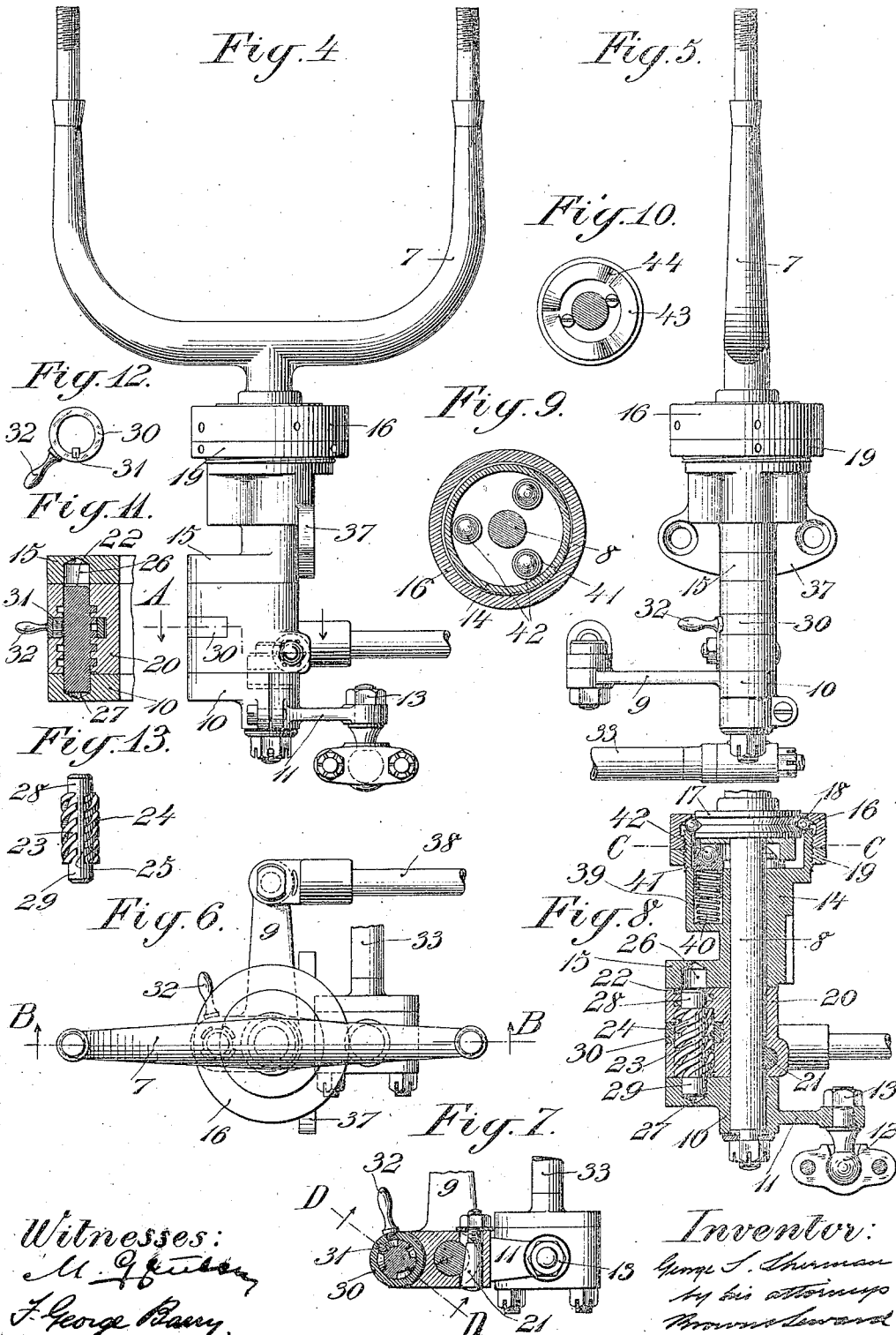
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George S. Sherman
by his attorneys
Brown & Howard

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UNITED STATES PATENT OFFICE.

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LAMP ATTACHMENT FOR VEHICLES.

1,028,144.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE S. SHERMAN, a citizen of the United States, and resident of Great Neck, in the county of Nassau and State of New York, have invented a new and useful Improvement in Lamp Attachments for Vehicles, of which the following is a specification.

My invention relates to lamp attachments for vehicles and in particular to attachments for automatically swinging the head lights of automobiles with the steering wheels.

One object of my invention is to provide novel means for accomplishing the projection of the light in the direction the vehicle is about to take under the guiding action of the steering wheels.

A further object is to provide means for swinging the lamps in greater or lesser arcs than the steering wheels and for independently locking or releasing the lamp brackets to and from the swinging mechanism without interfering with the steering mechanism and without the necessity of disconnecting any of the parts.

A further object is to provide new and improved means for locking and releasing the lamp brackets to and from the swinging mechanism.

A further object is to provide mechanism for directly connecting the lamp brackets to the drop arm of the steering gear.

A further object is to provide means for causing the brackets to automatically return to their normal position when the lamp swinging mechanism has turned them approximately to that position and to firmly retain them in such position irrespective of minor movements of the steering mechanism.

A still further object is to provide certain improvements in the construction, form and arrangement of the various parts whereby the objects above enumerated may be obtained in a simple and effective manner.

A practical embodiment of the invention is shown in the accompanying drawings in which,

Figure 1 is a side view of my lamp attachment in position on the frame of an automobile, showing the connection between the steering gear and the lamp brackets. Fig. 2 is a top plan view of the same. Fig. 3 is a front view of the same. Fig. 4 is a front elevation of one of my lamp brackets with a portion of its rod connections. Fig. 5 is a side elevation of the same. Fig. 6 is a

top plan view of the same. Fig. 7 is a horizontal section in the plane of the line A of Fig. 4, looking in the direction of the arrows. Fig. 8 is a vertical central section in part in the plane of the line B—B of Fig. 6, looking in the direction of the arrows. Fig. 9 is a horizontal section of the bearing support taken in the plane of the line C—C of Fig. 8, looking downwardly. Fig. 10 is an inverted section of the lamp carrying member, taken slightly below the plane of the line C—C of Fig. 8. Fig. 11 is a detail vertical central section of the locking mechanism, taken in the plane of the line D—D of Fig. 7, looking in the direction of the arrows. Fig. 12 is a plan view of the operating collar, and Fig. 13 is a side view of the locking pin.

The frame of the automobile is denoted by 1, and a radiator 2 is shown, in the present instance, in order to indicate more clearly the relative positions of the parts to be described.

The steering gear is supported by the frame and consists of the steering post 3 and the drop arm 4, a suitable gearing connecting the two for causing the drop arm to be swung in a vertical plane on its pivot 5 by the rotation of the steering post. The drop arm 4 is shown, in the present instance, as provided with a ball 6 at its lower end for engagement with the usual rod (not shown), connecting the steering gear with the steering wheel (also not shown). The bifurcated lamp carrying member is denoted by 7 and its shank by 8. The lower end of this shank may be screw-threaded and provided with a washer and nut for retaining the parts to be hereinafter described, in assembled position.

The lamp swinging member comprises the sleeve 10 and the arms 9 and 11. A ball 12 is secured by a nut 13 to the arm 11, the said ball being of the kind used for ball and socket joints. When in position, the sleeve 10 is loosely mounted on the lower portion of the shank 8, while the arm 11 extends at right angles to said shank and the ball 12 depends from the outer end of the arm 11.

The bearing support for the lamp carrying member is provided with an enlarged upper portion 14 and a lower laterally extending flange 15. The upper part of the enlarged portion is of cup shape and its inner upper edge is beveled to form one part of a ball bearing. This part is exteriorly

screw threaded for engagement with the bearing cap 16, and the inner under edge of the said cap is also beveled to form another part of the ball bearing, so that when the cap is screwed into position on the enlarged portion, the two beveled edges above mentioned, will form an annular V-shaped horizontal groove. The shank 8 has a disk-shaped portion 17 near its upper end, and this disk is provided with an annular V-shaped groove. When the parts are in assembled position, the two above mentioned V-shaped grooves lie in juxtaposition in the same plane and together form an annular race for the balls 18, thus providing the ball bearing for the antifriction support for the lamp carrying member. A locking ring 19 serves to secure the bearing cap 16 in its proper adjustment.

Secured to the shank of the lamp carrying member, intermediate the bearing support and the lamp swinging member, and forming a part of the lamp carrying member, is a sleeve 20; the means shown for securing the said sleeve to the said shank being the cotter 21, which bears against a flattened portion of the shank 8. This sleeve 20 is provided with an interiorly threaded vertical hole 22 therethrough, offset from the shank 8 of the lamp carrying member, for carrying the double ended locking bolt 23. The bolt 23 is exteriorly provided, intermediate its ends, with a screw thread 24 for engagement with the interior screw thread in the hole 22. This thread is of very high pitch and is provided with a channel 25, longitudinal of the bolt, therethrough. The flange 15 of the bearing support and the lamp swinging member 10 are provided respectively with sockets 26, 27, for receiving the ends 28, 29, of the bolt 23. An operating collar 30 is located in the sleeve 20, transversely of the hole 22, and surrounds the bolts 23. It is provided with a lug 31 for engagement with the channel 25, and a handle 32 for convenient manipulation of the collar.

The operation of the locking device is as follows:—When the handle 32 is moved to the right, the collar 30 turns, and as a result of the engagement between the lug 31 and channel 25, the locking bolt 23 also turns. As the bolt turns in this direction, the thread thereon causes it to rise until the end 28 engages the socket 26, thus locking the sleeve 20 on the shank 8 to the flange 15 of the bearing support. When, on the other hand, the handle 32 is moved to the left, the bolt 23 is withdrawn from the socket 26 and its end 29 enters the socket 27, thus locking the sleeve 20 on the shank 8 to the lamp swinging member. I thus provide an extremely simple and effective locking device which is very valuable in practice. A rod 33 has a ball and socket en-

gagement with the ball 12 of the arm 11 of the lamp swinging member, and the said rod extends to the drop arm 4 of the steering gear, for imparting a swinging motion to the lamp swinging member by the turning of the steering wheel and the consequent swinging movement of the drop arm. This rod 33 has a pin and slot connection with the drop arm, which connection consists, in the present instance, of a radially elongated slot 34 in the drop arm, through which a bolt 35, carried by the connecting rod 33, extends, a nut 36 being used for adjustably securing the bolt 35 at any desired point along the said slot. The farther away from the pivot 5 of the drop arm 4 the rod is clamped, the greater will be the swing of the lamp swinging member in proportion to any given swing of the drop arm. I provide the bearing support with a plate 37 for securing the lamp bracket to the vehicle frame. The lamp bracket at the other side of the vehicle is constructed substantially like the one hereinabove described, with the exception that the lamp swinging member does not have to have the arm 11 which is connected to the steering gear. The arms 9 of the two lamp swinging members are connected by a cross rod 38, so that, when one of the lamp swinging members is moved by the operation of the steering gear, the other lamp swinging member will be swung correspondingly.

In operation, when it is desired to swing both of the lamps simultaneously, the bolts 23 are both forced downwardly, as hereinabove described, into position to lock both of the lamp swinging members to their respective sleeves 20 fixed to the shanks of the lamp carrying members. When it is desired to disconnect both lamp carrying members from their swinging mechanism and at the same time lock the said members against rotary movement, both of the bolts 23 are forced upwardly into position to lock the sleeves 20 of the lamp carrying members to the bearing supports, this operation of the bolts serving to release the lamp swinging members from said sleeves of the lamp carrying members. If it is desired to connect one lamp to its swinging mechanism and keep the other lamp stationary, the locking bolt of the lamp bracket, which is to be swung, may be forced downwardly into position to lock its lamp swinging member to the lamp carrying member, while the other bolt may be retained in its position for locking the bracket which is to be held stationary, to its bearing support. In order to insure the return of the lamp carrying member 7, 8, exactly to its normal position, when the lamp swinging mechanism has brought it approximately thereto, I provide the enlarged portion 14 of the bearing support with one or more (in the present

instance, three) recesses 39, for receiving ball plungers consisting of springs 40, followers 41 and balls 42. The disk portion 17 is provided on its under side with a cam plate comprising, in the present instance, three raised faces 43 and three notches 44. This cam plate is so located that the balls 42 are held in yielding contact therewith by the springs 40.

10 The operation of this device is as follows:—When the lamp carrying member is in its normal position and the lamp swinging member is locked thereto, the balls 42 rest in the notches 44; but when the lamp 15 carrying member is turned, the raised faces 43 depress the balls 42, thus contracting the springs 40. When the lamp swinging mechanism brings the brackets 7, 8, back approximately to their normal position, the 20 pressure of the balls 42 on the sloping cam surfaces causes the balls to seek the notches 44, and this force returns the bracket exactly to its normal position, even though the lost motion in the lamp swinging linkage 25 might otherwise permit it to remain askew. Furthermore, this device will hold the bracket firmly in its normal position until positively dislodged by the swinging mechanism. The lost motion in the lamp 30 swinging linkage and steering gear will permit the lamp bracket to remain immovable until some pronounced turn is imparted to the steering traction wheels, thus avoiding any unnecessary wobbling of the lamps due 35 to slight movements of the steering gear in ordinary travel along comparatively straight roads.

Thus it will be seen that I provide a device which is perfectly adapted for the use 40 for which it is intended, which may be quickly and effectively locked to rotate or against rotation, and in which the bracket is forced to yieldingly occupy a given position in the bearing support until positively 45 turned therefrom.

It will be understood from the foregoing description that by changing the position of the locking pins in the lamp brackets of the vehicle, either one of the brackets may 50 be caused to swing, by the operation of the steering gear, with the steering traction wheels; and by varying the adjustment of the rod 35 on the drop arm 4, the angle of movement of the brackets can be varied at 55 will.

The lamp brackets may be provided with any suitable or approved form of lamps which may be supported by the bifurcated portions of the lamp carrying members.

60 It is to be understood that I do not wish to confine myself strictly to the form and arrangement of the various parts herein

shown and described, as changes may be made without departing from the spirit and scope of my invention.

What I claim is:

1. A vehicle lamp bracket comprising, a lamp carrying member, a bearing support therefor having a socket therein, a lamp swinging member having a socket therein, a 70 sleeve intermediate the bearing support and lamp swinging member fixed on said lamp carrying member and having a hole therein, a double ended bolt mounted in said hole, and means for moving said bolt into 75 engagement with either the socket in the lamp swinging member or the socket in the bearing support, the said means comprising an interior screw thread in said hole, an exterior screw thread on the bolt, and means 80 for rotating the bolt.

2. A vehicle lamp bracket comprising, a lamp carrying member, a bearing support therefor having a socket therein, a lamp swinging member having a socket therein, 85 a sleeve intermediate the bearing support and lamp swinging member fixed on said lamp carrying member and having a hole therein, a double ended bolt mounted in said hole, and means for moving said bolt 90 into engagement with either the socket in the lamp swinging member or the socket in the bearing support, the said means comprising, an interior screw thread in the said hole, an exterior screw thread on the bolt 95 having a channel, longitudinal of the bolt, therethrough, a rotatable collar mounted in said sleeve and surrounding said bolt, a lug on said collar for engaging said channel, and a handle for rotating the collar. 100

3. A vehicle lamp bracket comprising, a lamp carrying member, a bearing support therefor, and means for causing the lamp carrying member to yieldingly occupy a 105 given position in the bearing support, the said means comprising a cam plate having raised faces and notches thereon, and spring pressed plungers co-acting therewith.

4. A vehicle lamp bracket comprising, a lamp carrying member, a bearing support 110 therefor, and means for causing the lamp carrying member to yieldingly occupy a given position in the bearing support, the said means comprising a cam plate having raised faces and notches thereon and spring 115 pressed ball plungers co-acting therewith.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this sixteenth day of December 1908.

GEORGE S. SHERMAN.

Witnesses:

F. GEORGE BARRY,
HENRY THIEME.