

B. M. SHEETS.

HEADLIGHT.

APPLICATION FILED NOV. 17, 1910.

1,031,384.

Patented July 2, 1912.

3 SHEETS—SHEET 1.

Fig. 1.

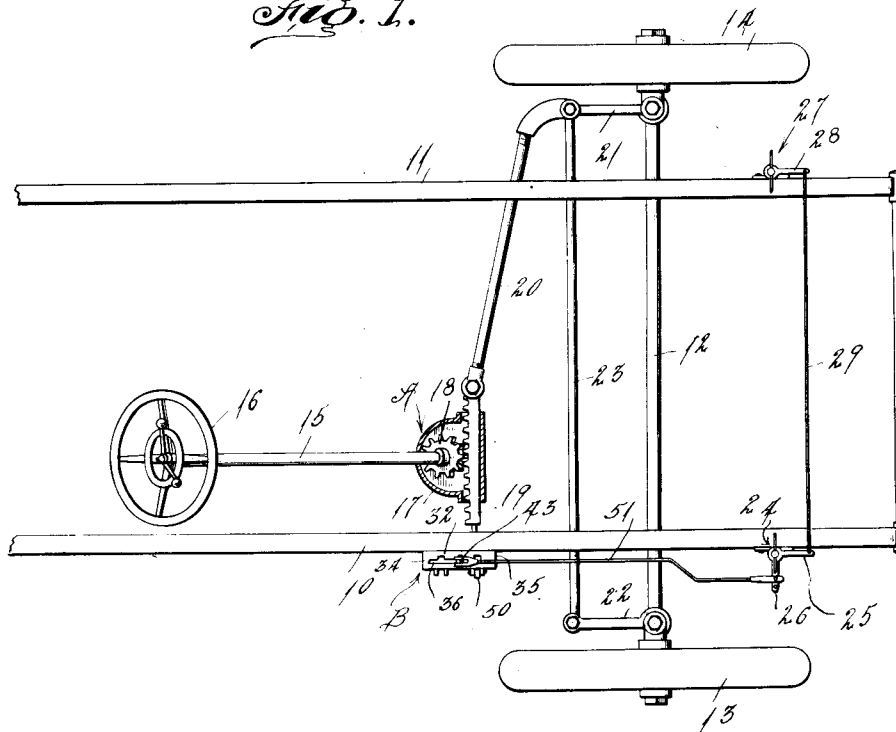


Fig. 2.

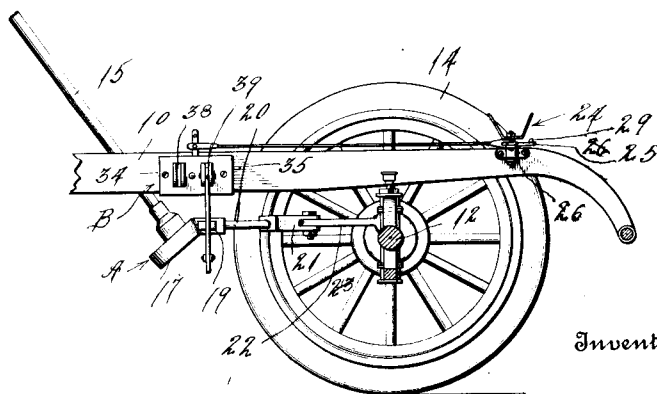
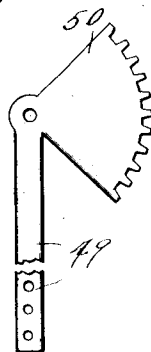


Fig. 11.



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3 SHEETS—SHEET 2.

Fig. 5.

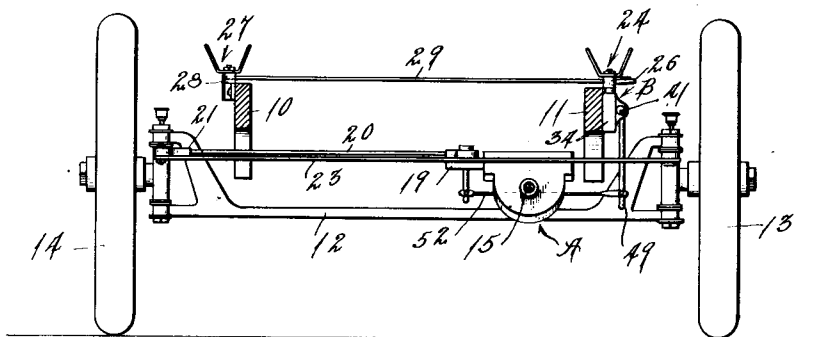


Fig. 4.

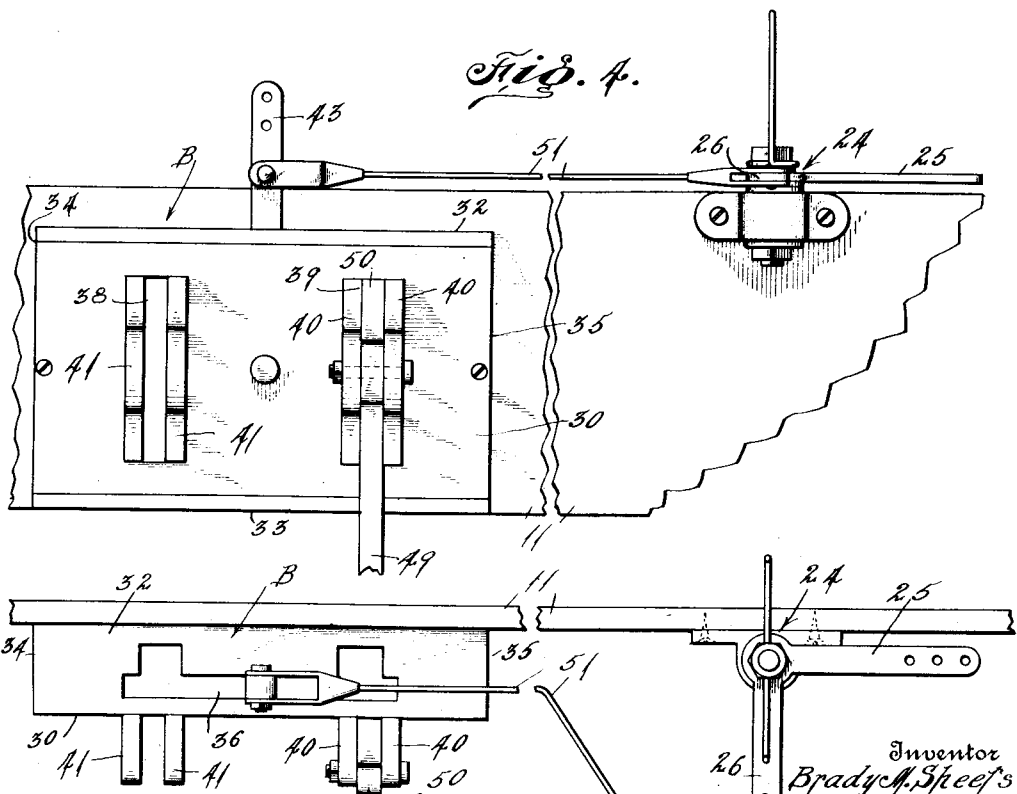


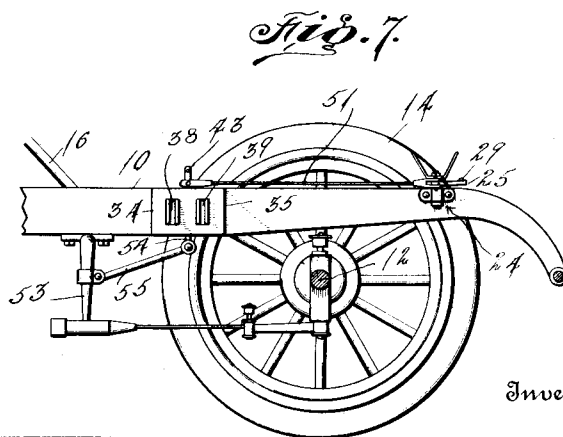
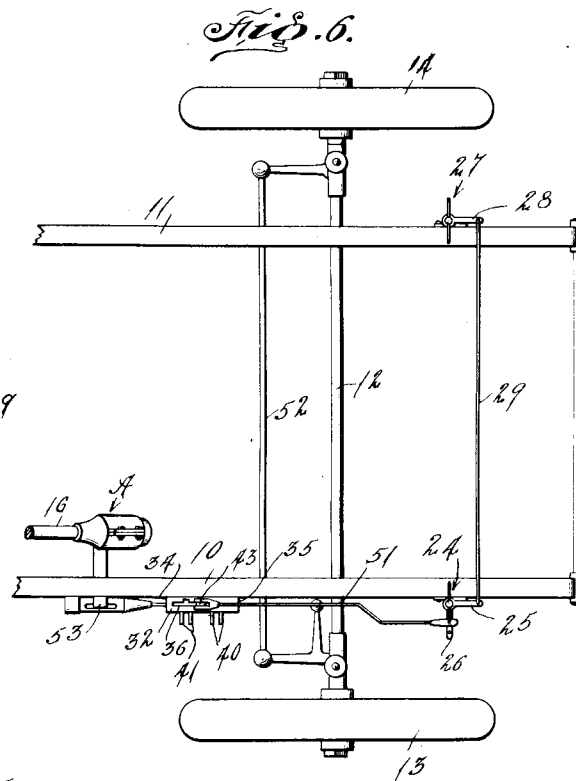
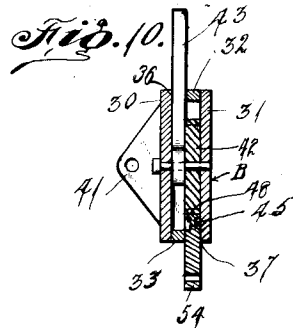
Fig. 5.

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3 SHEETS--SHEET 3.



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UNITED STATES PATENT OFFICE.

BRADY M. SHEETS, OF MILTON, WEST VIRGINIA.

HEADLIGHT.

1,031,384.

Specification of Letters Patent.

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Application filed November 17, 1910. Serial No. 592,376.

To all whom it may concern:

Be it known that I, BRADY M. SHEETS, a citizen of the United States, residing at Milton, in the county of Cabell, State of West Virginia, have invented certain new and useful Improvements in Headlights; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to head lights, and particularly to means for controlling the same whereby the lights may be shifted so as to throw their rays directly ahead of the vehicle to which they are attached when the latter is rounding a curve.

The object of the invention resides in the provision of an improved means for effecting the shifting of a head light of automobiles, vehicles, electric railway cars, and steam locomotives when the same are rounding a curve so that the rays of said head lights will be thrown directly ahead and thus prevent the possibility of accident by collision with unseen objects as is often the case when a stationary head light is used.

A further object of the invention resides in the construction of improved means for shifting the head light under the conditions named which will be simple, efficient in use, easily applied irrespective of the general construction of the associated vehicle and which may be manufactured at an exceedingly small cost.

With these and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully described and particularly pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings, wherein like characters of reference denote corresponding parts in the several views; and in which,

Figure 1 is a plan view of the forward end of an automobile with the body removed, showing the invention associated therewith; the steering gear of the automobile illustrated being operated primarily by the movement of a bar adapted for reciprocation transversely of the automobile; Fig. 2, a side elevation of what is shown in Fig. 1, with the near wheel removed; Fig.

3, a rear elevation of what is shown in Fig. 1; Fig. 4, an enlarged side elevation of the connections between the steering gear of the automobile and the lamp supports; Fig. 5, a plan view of what is shown in Fig. 4; Fig. 6, a view similar to Fig. 1, showing the manner of arranging and connecting the parts of the invention when the steering gear of the automobile is operated primarily by an oscillating arm movable longitudinally of the automobile; Fig. 7, a side elevation of what is shown in Fig. 6, with the near wheel removed; Fig. 8, a detail view of a portion of the connections between the steering gear and the lamp supports as shown in Figs. 6 and 7, the side of the casing in which the connections illustrated are contained being removed; Fig. 9, a section on the line 9—9 of Fig. 4; Fig. 10, a section on the line 10—10 of Fig. 8; Fig. 11, a detail view of the lever used in the connections between the steering gear and the lamp supports when said connections are operated by a member movable transversely of the automobile.

Referring to the drawings, 10 and 11 indicate the side frame members of an automobile, 12 the front axle thereof which has hingedly connected therewith at each end wheels 13 and 14. The steering gear of the automobile illustrated is indicated generally at A and includes the steering post 15 operated by the hand wheel 16. This post has its lower end disposed in a casing 17 and has mounted thereon a pinion 18. Slidably mounted in the casing 17 in operative engagement with the pinion 18 is a rack bar 19. This rack bar has secured thereto one end of a link 20, the other end of which latter is connected to an arm 21 projecting from the stub shaft upon which the wheel 14 is mounted. The arm 21 is in turn connected with an arm 22 projecting from the stub shaft upon which the wheel 13 is mounted by a connecting bar 23. By this construction it will be apparent that as the bar 19 is reciprocated, the wheels 13 and 14 will be swung in unison so as to effect the proper steering of the automobile, all in the well-known manner.

Mounted upon the forward end of the side member 10 is a rotatable lamp support 24 which includes a pair of angularly disposed arms 25 and 26. A similar lamp support 27 is rotatably mounted on the side member 11 and includes a laterally projecting arm 28

which is connected to the arm 26 of the support 24 by a rod 29, whereby the rotation of the support 24 will produce a corresponding rotation of the support 27.

5 Mounted upon the outer face of the side member 10 is a casing B which includes side members 30 and 31, top and bottom members 32 and 33 respectively and end members 34 and 35. The top member 32 has formed therein a slot 36, while the bottom member 33 is also provided with a longitudinal slot 37. Formed in the side member 30 is a pair of spaced slots 38 and 39, and projecting outwardly from said side member at each side of the slot 39 are ears 40, while corresponding ears 41 project outwardly from the side member 30 at each side of the slot 38. Rotatably mounted in the casing B between the slots 38 and 39 is a toothed pinion 42, and fixed to this pinion is a lever 43, the free end of which projects through the slot 36 in the top member 32.

25 Mounted on the inner face of the side member 31 between the pinion 42 and the end member 35 is a rib 44, while another rib 45 is also mounted on the inner face of the side member 31 between the bottom member 33 and the pinion 42. These ribs 44 and 45 are adapted to enter a groove 46 in one face of a rack bar 47, whereby said rack bar is mounted for reciprocation in the casing B in operative engagement with the pinion 42; the rack bar being movable vertically with respect to the side member 10 when associated with the rib 44 and longitudinally of said side member when associated with the rib 45. One face of the rack bar 47 is provided with a plurality of teeth 48 which when said rack bar is associated with the rib 44 lie directly beneath the slot 39.

40 Pivoted between the ears 40 is a lever 49, one end of which is provided with a toothed segment 50 which projects through the slot 39 and operatively engages the teeth 48. By this construction, it will be apparent that an oscillation of the lever 49 will reciprocate the rack bar 47 which in turn will effect an oscillation of the lever 43. In order to transmit the oscillation of the lever 43 to the lamp support 24, a link 51 has one end connected to said lever and its other end connected to the arm 25 of the support 24, and this movement of the support 24 through the medium of the connecting link 51, will in turn be transmitted to the support 27 by means of the connecting rod 29. The lever 49 is actuated through the medium of the steering gear A and has its outer rear free end connected to the bar 19 by means of a link 52. By this construction it will be apparent that as the steering gear A is operated so as to reciprocate the bar 19 and thus swing the wheels 13 and 14, the same movement of the bar 19 will in turn cause the lamp supports 65 to be rotated in unison so as to throw the

rays of the lights carried thereby directly ahead of the vehicle when the same is traveling around a curve.

In Figs. 6 and 7, the steering of the automobile is shown as accomplished primarily through the medium of an oscillating arm 53 movable longitudinally of the automobile. When the invention is associated with this type of steering gear, the rack bar 47 is in turn associated with the rib 45 so as to be movable longitudinally of the automobile. For this purpose, the rack bar is provided with the stem 54 which projects through the slot 37 and is connected to the arm 53 by means of a link 55. By means of this construction, it will be apparent that as the arm 53 is oscillated to effect the steering, the rack bar 47 will be reciprocated in unison therewith and effect the necessary shifting of the lamp supports, all in the manner heretofore described.

The side 31 of the casing B also has mounted thereon another rib 44' disposed on the opposite side of the pinion 42 from the rib 44 and through the medium of which the rack 47 may be slidably mounted so as to be operatively engaged by the segment 50 when the lever 49 is pivoted between the ears 41. This mounting of the rack 47 and the lever 49 may be utilized when reverse movements of the apparatus are necessary to obtain the proper movement of the lamp support.

While one particular form of carrying the invention into practice has been shown and described, it will be apparent that various changes may be made in the details of construction without in any manner departing from the scope of the invention, as set forth in the appended claims.

What is claimed is:—

1. In combination with an axle, the side frame members and the steering gear of an automobile, of wheels hingedly mounted on said axle, connections between said wheels and steering gear whereby the former may be correspondingly swung by the oscillation of the latter, a rotatable lamp support mounted upon each of the side frame members, connections between said supports whereby the rotation of one support will produce a corresponding rotation of the other, a casing mounted upon one of the side frame members, a pinion rotatably mounted in said casing, a lever fixed to said pinion for rotation therewith, a rack bar mounted for reciprocation in the casing and in operative engagement with the pinion, means for interchangeably mounting said rack bar in the casing for reciprocation in a vertical or horizontal direction with respect to the side frame members, and connections between the steering gear and rack bar whereby the actuation of the former will reciprocate the latter and in turn oscillate said lever so as to rotate the lamp supports in uni-

son with and in the same direction as the wheels are swung.

2. In combination with an axle, the side frame members and the steering gear of an automobile, of wheels hingedly mounted on said axle, connections between said wheels and steering gear whereby the former may be correspondingly swung by the oscillation of the latter, a rotatable lamp support mounted upon each of the side frame members, connections between said supports whereby the rotation of one support will produce a corresponding rotation of the other, a casing mounted upon one of the side frame members, a pinion rotatably mounted in said casing, a lever fixed to said pinion for rotation therewith, a rack bar mounted for reciprocation in the casing and in operative engagement with the pinion, a plurality of teeth formed in the face of the rack bar adjacent the outer side member of the casing, a lever pivoted on the outer side member of the casing, a toothed segment on one end of said lever operatively engaging the teeth on said rack bar whereby the oscillation of said lever will reciprocate the latter, and connections between the steering gear and the last named lever whereby the actuation of the former will oscillate the latter.
3. In a device of the character described, the combination with a frame, a rotatable lamp support mounted on said frame, a casing mounted upon said frame, a pinion rotatably mounted in said casing, a lever fixed

on said pinion for rotation therewith, a rack bar mounted for reciprocation in the casing and in operative engagement with the pinion, means for interchangeably mounting said rack bar in said casing in operative engagement with the pinion for reciprocation in a vertical or horizontal direction with respect to the frame, means for reciprocating said bar, and connections between said lever and the last support whereby the oscillation of the former will rotate the latter.

4. In a device of the character described, the combination with a frame, a rotatable lamp support mounted on said frame, a casing mounted upon said frame, a pinion rotatably mounted in said casing, a lever fixed on said pinion for rotation therewith, a rack bar mounted for reciprocation in the casing and in operative engagement with the pinion, a plurality of teeth formed in the face of the rack bar adjacent the outer side member of the casing, a lever pivoted on the outer side member of the casing, a toothed segment on one end of said lever operatively engaging the teeth on said rack bar, whereby the oscillation of the lever will reciprocate the rack bar, and means for oscillating said lever.

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

BRADY M. SHEETS.

Witnesses:

J. M. PERRY,
D. L. IRWIN.