

T. C. LUCE & C. R. SILVERNAIL.
LAMP WORKING APPARATUS.
APPLICATION FILED DEC. 14, 1908.

937,005.

Patented Oct. 12, 1909.
2 SHEETS—SHEET 1.

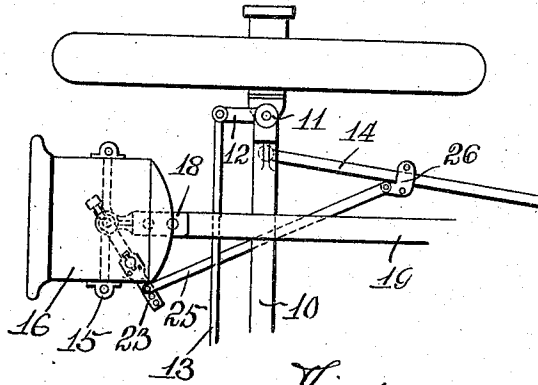


Fig. 1.

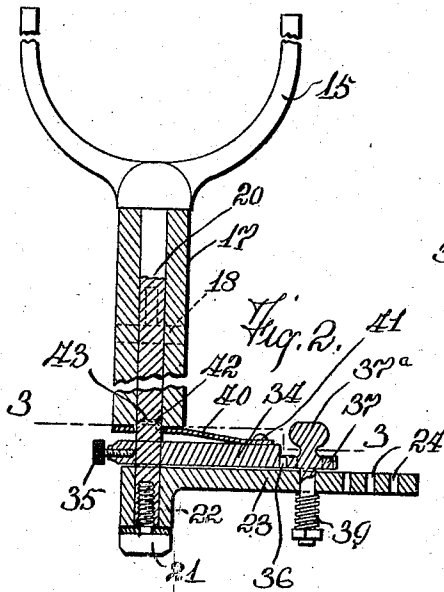


Fig. 2.

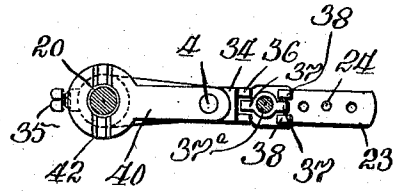


Fig. 3.

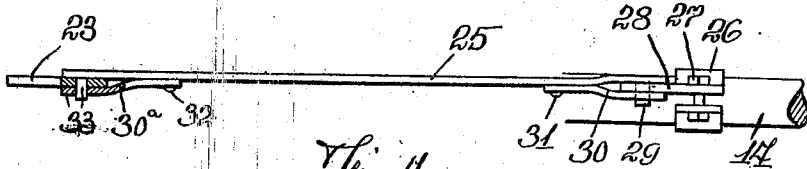


Fig. 4.

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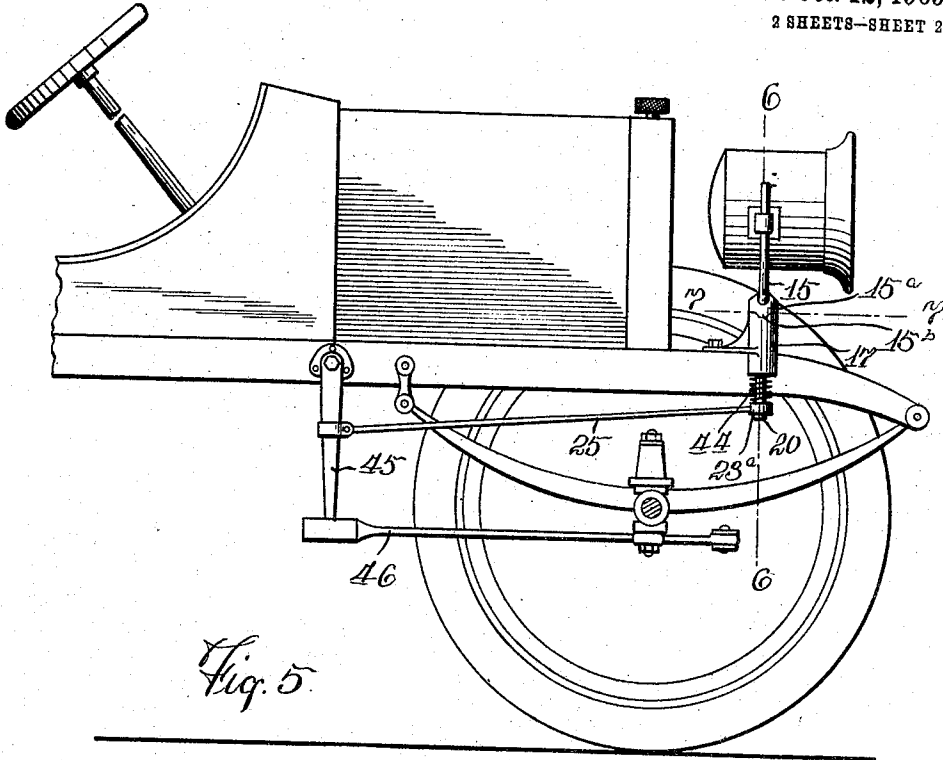


Fig. 5.

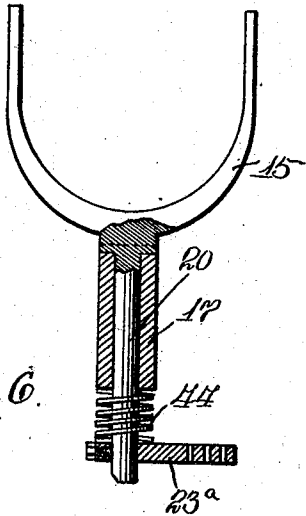


Fig. 6.

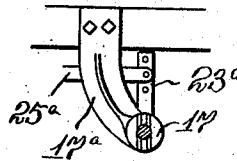


Fig. 7.

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UNITED STATES PATENT OFFICE.

THOMAS C. LUCE AND CHARLES ROY SILVERNAIL, OF DALTON, MASSACHUSETTS.

LAMP-WORKING APPARATUS.

937,005.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed December 14, 1908. Serial No. 467,378.

To all whom it may concern:

Be it known that we, THOMAS C. LUCE and CHARLES ROY SILVERNAIL, both of the town of Dalton, Berkshire county, Commonwealth of Massachusetts, have invented a new and useful Improvement in Lamp-Working Apparatus, of which the following is a full, clear, and exact description.

Our invention relates to improvements in lamp working apparatus, which apparatus is adapted to be attached to vehicles, and especially automobiles or similar cars, so as to direct the lamp or head light in a way to have the rays follow the direction of the wheels as the latter are steered, instead of following the course of the vehicle body.

Our invention is especially intended to produce a very simple attachment which can be applied to any ordinary form of car, which can be adjusted so as to give the desired amount of throw or turn to the lamp, which has a little lost motion so that the lamp will not wiggle with the lateral vibrations of the car as it moves over the road, and which is provided with means for easily putting the lamp out of gear so that during the day time the operating mechanism may be out of use, all to the end that an efficient, simple lamp working apparatus can be used which will not be objectionable in any way but will cause the light to turn automatically with the steering of the wheel so as to project the rays at the desired angle.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a broken plan view of the apparatus embodying our invention. Fig. 2 is an enlarged detail vertical section of a part of the lamp connections. Fig. 3 is a sectional plan on the line 3—3 of Fig. 2. Fig. 4 is a broken detail view on an enlarged scale showing the connecting rod and attachments for operating the lamp. Fig. 5 is a sectional elevation showing a modification of our improved apparatus as applied to a car, Fig. 6 is a detail section on the line 6—6 of Fig. 5, and Fig. 7 is a sectional plan on the line 7—7 of Fig. 5.

In the drawings we have shown the usual axle 10 connecting by a knuckle 11 with the wheel, and this knuckle has the customary arm 12 projecting forward and provided with a connecting rod 13 which leads across to a similar arm on the opposite steering

knuckle. We have shown the customary steering rod 14 connecting as usual with the crank on the under side of the steering knuckle 11. All this is common to most makes of cars, and forms no part of our invention. We have also shown the customary lamp bracket 15 which is a forked bracket, and this carries the lamp 16 which can be of any approved kind. The lamp bracket is supported on a vertical sleeve 17 which is carried by the bracket 18, and this is fastened to the car frame 19. The bracket 15 is, however, provided with a vertical shaft 20 which extends down through the bearing 17 and is locked by means of the screw 21 or equivalent fastening. Turning loosely on the lower end of the shaft is the hub 22 of the crank arm 23, and the latter has holes 24 therein so that an adjustable connection can be made with the connecting rod 25 which is coupled to the steering rod 14 by means of a two-part coupling 26, the parts being clamped to the rod 14 by means of bolts 27, and the top part of the coupling has a tongue 28 which is pierced by a pin 29 on one end of the steering rod 25. The spring plate 30 also pierced to receive the pin 29, is held to the connecting rod by means of the rivet 31, and by springing out the spring 30 and turning it on its pivot 31, the pin 29 can be removed from the tongue 28 and the connecting rod thus disconnected at this point. A similar connection is made between the connecting rod 25 and the crank arm 23, in which case the connecting rod has a pin 33 extending through the crank arm and from a plate spring 30^a, the latter being like the spring 30 already referred to, and it is pivoted on the pivot 32. It will be seen that it is thus an easy matter to connect or disconnect the rod 25, and by adjusting the pin 33 in either one of the desired holes 24, the amount of throw to give to the crank arm 23 can be regulated. Just above and in close contact with the crank arm 23 is a second crank arm 34 which is fixed to the shaft 20 by means of the set screw 35, or equivalent fastening. The arm 34 is provided with teeth 36 between which fit loosely one of the lugs 37 on the pin 37^a (see Fig. 3) and the second lug on said pin fits between the teeth 38 which rise from the crank arm 23 already referred to. The pin 37^a is held down normally by means of a spring 39. It will be seen, therefore, that when the rod 14 is moved to steer the machine one way or the other, the move-

ment will be imparted to the connecting rod 25 and through it and the crank arms 23 and 34 to the shaft or post 20 and to the lamp bracket 15 and the lamp 16 which it carries. It will be observed, however, that there is a little lost motion between the lugs 37 and the teeth 36 and 38, so that as the steering gear moves slightly owing to obstructions in the road, such movement will not be imparted to the lamp, and to further provide against such accidental movement, a plate spring 40 is used which is secured to the arm 34 as shown at 41 in Fig. 2, and which has bosses 42 formed thereon, which enter recesses 43 in the fixed sleeve 17. Thus it will be seen that the spring 40 will serve to hold the lamp steadily under ordinary circumstances, but the engagement between the spring 40 and the sleeve is only frictional, and so when the steering gear is worked to any considerable extent, the movement will be imparted to the crank arms 23 and 34 with sufficient force to overcome the tension of the spring 40, and the post 20 and the lamp bracket will be turned co-incidentally with and correspondingly to the wheel.

If it is desired to throw the parts out of gear during the day time, the pin 37^a can be raised against the tension of the spring 39 and turned around to right angles to the position shown in Fig. 3, so as to be out of engagement with the teeth 36 and 38, and then it will be seen that the movement of the rod 14 will be only imparted to the arm 23 which will turn freely on the post 20 without affecting the lamp, or if desired the connecting rod 25 can be wholly disconnected, as already described, when the lamp is not to be used. We have shown a connection between the crank arm 23 and the rod 14, but it will of course be understood that with different steering gears it might be necessary to connect the arm 23 with some other reciprocating or moving part of the gear, but this would require no invention, simply ordinary adjustment to various gears.

In Figs. 5 to 7 we have shown some slight modifications which illustrate the fact that the invention is applicable to various forms of steering gear. As here shown the sleeve or bearing 17 is arranged on a bracket 17^a, and the lamp bracket 15 has a spindle 20 already referred to, and has a boss 15^a at the base of the bracket, which boss has an extension 15^b fitting in a corresponding socket on the top of the sleeve or bearing 17. A spiral spring 44 is coiled around the spindle 20 between the bearing or sleeve 17 and

the crank 23^a, and keeps the boss 15^a in close contact with the sleeve 17, and when the parts are in the position shown in Fig. 5, the lamp is held ready for use, but by lifting the lamp bracket against the tension of the spring 44 and turning it around, it can be thrown out of use if desired. The crank 23^a may be a plain crank or may be like the one already described, and it connects by a pitman 25 with the crank 45 of the steering gear, this connecting with the steering rod 46, as usual in some types of machine. It will thus be seen that when the steering gear is used, as the crank 45 moves backward and forward to turn the wheels, the lamp bracket will be correspondingly turned and the light will follow the direction of the wheels.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent:—

1. In an apparatus of the kind described, the combination with the lamp bracket, of a crank loosely connected therewith, a second crank tightly connected with the bracket, teeth arranged in pairs on the two cranks, and a pin extending through one of the cranks and having lugs to engage both pairs of teeth.

2. The combination with a wheeled vehicle having steering gear, of a supporting sleeve, a lamp bracket having a spindle extending downward through the said sleeve, a spring pressed boss and socket connection between the lamp bracket and the sleeve, a crank arm loose on the bracket spindle, a second crank arm lying near the first crank arm, the second arm being tight on the spindle, a detachable connection between the two crank arms, and means for operating one crank from the steering gear of the vehicle.

3. In an apparatus of the kind described, the combination with the lamp bracket having a depending spindle and a support for the spindle, of a crank arm loosely connected with the spindle, a second crank arm tightly connected with the spindle, teeth on the two crank arms, said teeth being arranged in pairs and spaced apart, and a pin having lugs thereon, said pin extending through one crank arm and having its lugs adapted to engage both pairs of teeth or to lie between the said pairs of teeth.

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