Jan. 18, 1927. 1,614,766

A. ADERER

TRAFFIC SIGNAL FOR MOTOR VEHICLES

Filed Feb. 11, 1926 2 Sheets-Sheet 1

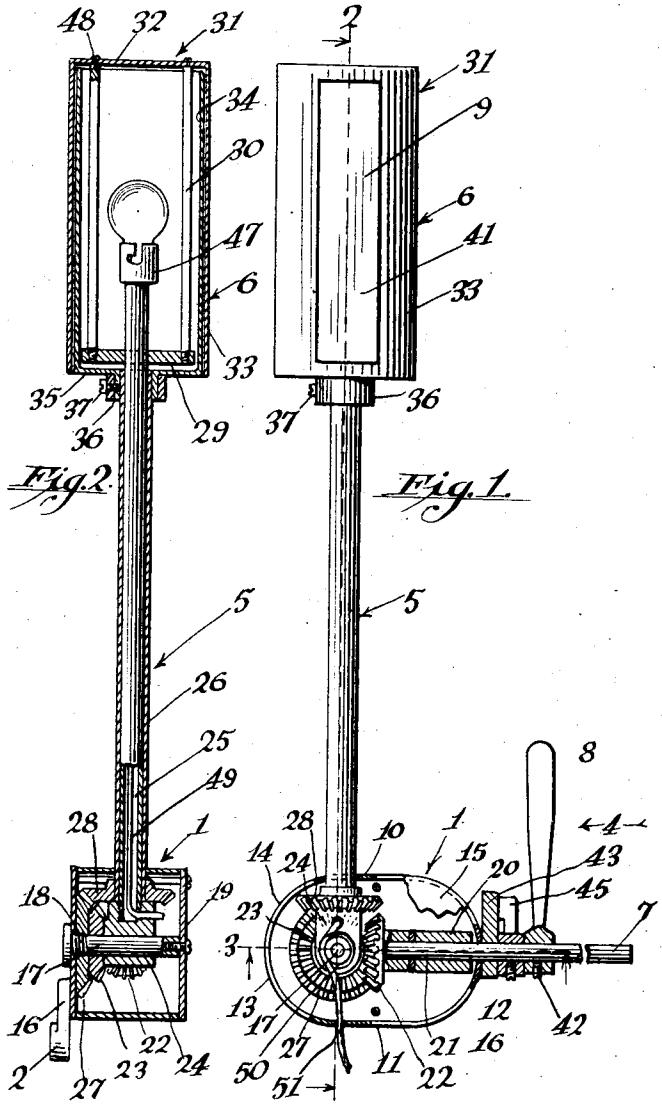


Fig. 2.

Fig. 1.

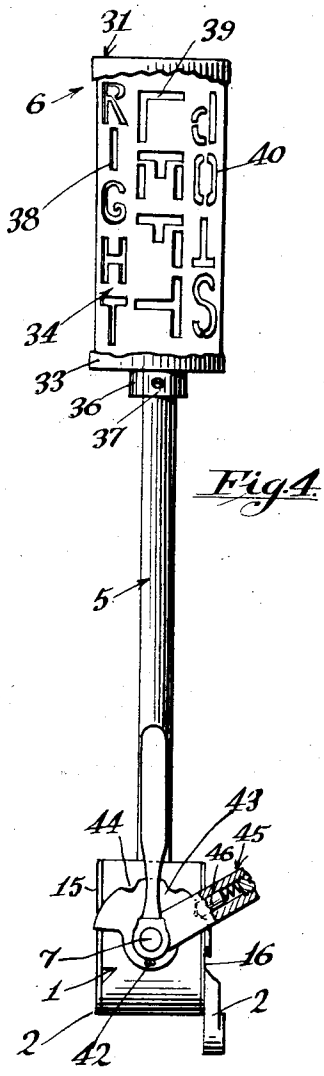


Fig. 4.

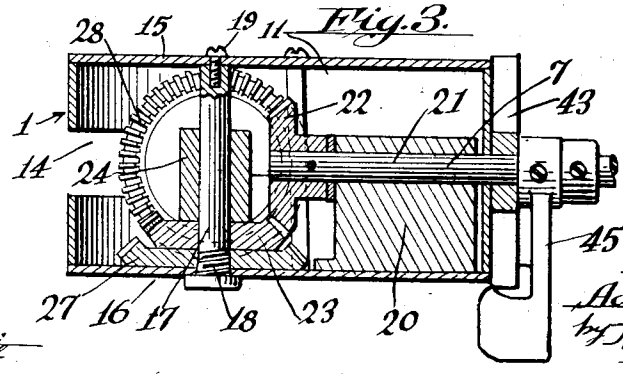


Fig. 3.

Witness:

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Fig. 5.

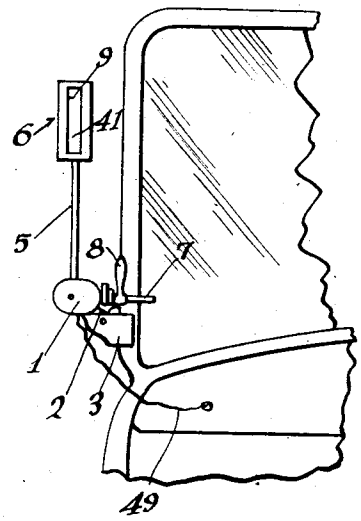


Fig. 6.

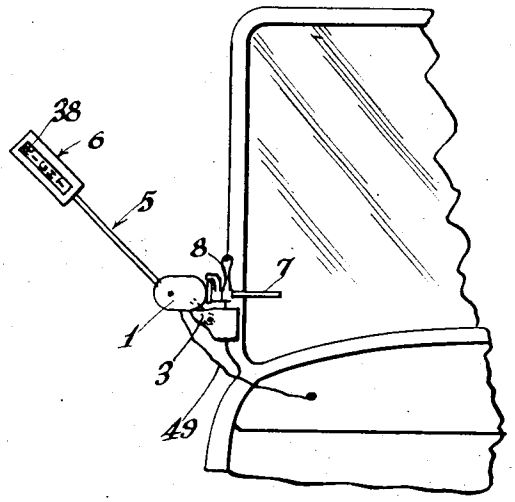


Fig. 7.

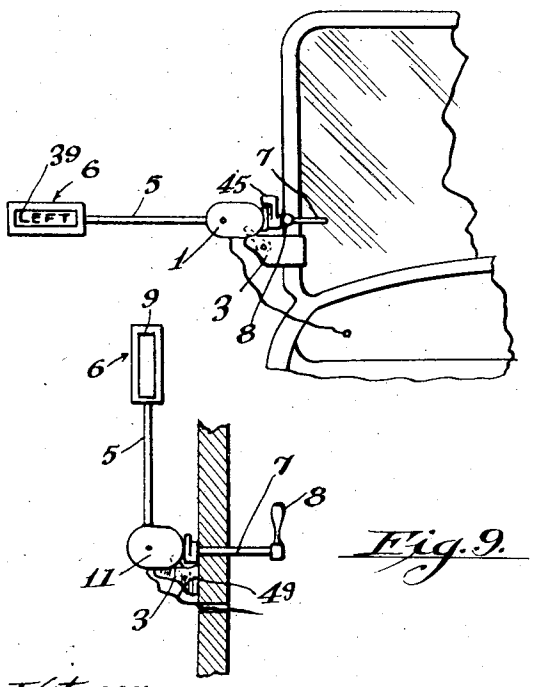
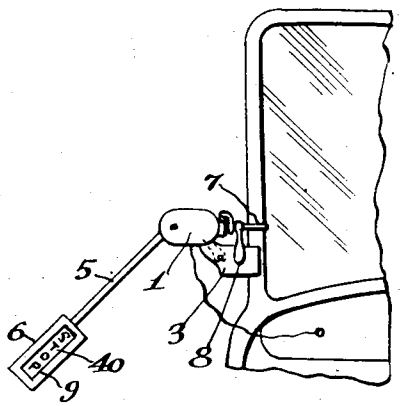


Fig. 9.

Fig. 8.



Witness:

Inventor:
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Patented Jan. 18, 1927. 1,614,766

UNITED STATES PATENT OFFICE.

ADOLPH ADERER, OF LOS ANGELES, CALIFORNIA.

TRAFFIC SIGNAL FOR MOTOR VEHICLES.

Application filed February 11, 1926. Serial No. 87,565.

My invention is a traffic signal for motor vehicles of the combined swinging semaphore arm, having a moving stencil incorporated therewith to give different definite designations to the signals.

An object of my invention is to use a swinging semaphore arm to give signal indications by position and to incorporate therewith a stencil signal which will give the various indications by letters when illuminated by a light.

A further object of my invention is to form the word signal of such construction that the swinging of the semaphore arm automatically turns the words or letter signal so that the proper word is indicated in accordance with the position of the semaphore.

A further object of my invention is to operate the swinging semaphore arm and the rotating stencil or illuminated signal by a single movement of an operating lever.

In my traffic signal I secure a suitable gear housing or the like in a convenient place on an automobile; this housing has a signal or semaphore arm preferably held normally vertically for a non-signaling position. A shaft with an operating handle extends from the housing to a convenient position for the driver and by a system of gearing the partial rotation of the handle may partially rotate the semaphore arm into different signaling positions, being held in such positions by a suitable spring actuated detent engaging sockets or the like.

A further feature of my invention is mounting a lamp on the end of the semaphore arm in a lamp casing, having an illuminating slot and by a system of gearing rotating a stencil cylinder surrounding the lamp so that as the signal arm is moved to the different positions indicating the right, left or stop signal, the stencils allow illumination therethrough, thus giving the signal in words in addition to position.

While I have used the word stencil as indicating the type of word signaling, it is to be understood that these need not have cut-out letters but may be formed on a transparent surface with block letters.

My invention will be more readily understood from the following description and drawings, in which:

Figure 1 is a rear elevation of my signal as installed, showing a broken section part of the gear housing.

Fig. 2 is a vertical section on the line 2—2 of Fig. 1, in the direction of the arrows.

Fig. 3 is a horizontal section on the line 3—3 of Fig. 1, in the direction of the arrows.

Fig. 4 is a side view taken in the direction of the arrow 4 of Fig. 1, showing the lamp casing in broken section with the stencil cylinder showing.

Fig. 5 is a diagram illustrating the signal attached to a vehicle in the non-signaling position.

Fig. 6 is a diagram indicating the conventional right turn.

Fig. 7 is a further diagram indicating a left turn.

Fig. 8 is a diagram illustrating the stop signal.

Fig. 9 is a diagram indicating the manner of attaching my signal to a closed car.

The general construction of my signal is substantially as follows, having reference particularly to Figs. 5 to 9:

The signal has a gear housing 1 to which is attached a rigid arm 2, this being of such construction that it may be fastened to a suitable clamp 3 adapted to be attached to the windshield of an automobile or to a bracket on the outside of a closed vehicle as indicated in Fig. 9. A swinging semaphore arm 5 has a light signal 6 attached thereto, the arm being operated by an operating shaft 7 having an operating handle 8. The movement of the handle 8 in a partial turn by means of a system of gearing swings the semaphore arm and at the same time rotates a stencil cylinder so that a light signal is indicated through the signal slot 9.

The detail construction of my semaphore operating arrangement is substantially as follows, being shown particularly in Figs. 1 to 4:

The gear housing 1 is formed of a box-like structure having top, bottom and end walls 10, 11 and 12 and 13 preferably formed as an oval, the outer end 13 having an arcuate slot 14 therein. Front and back plates 15 and 16 are attached to the housing, the back plate 16 being preferably permanently secured to the walls. The transverse shaft 17 is secured to the plates having a screw thread 18 through the back plate and being

secured to the front plate by a screw 19. A bearing block 20 having a bearing 21 is secured to the back plate and to the rear wall 12 and forms a journal for the operating shaft 7. This shaft carries a bevel pinion 22 on the end in the housing, this pinion meshing with an inner gear 23 keyed on the cross-shaft 17.

A hub 24 is rigidly connected to the gear 23 and carries the semaphore arm 5, this arm being formed of an inner tube 25 and an outer sleeve 26, the inner tube being rigidly secured to the hub 24 in any suitable manner. A fixed gear 27 is secured to the rear wall or to the stationary transverse shaft so as to be held from moving. The sleeve 26 carries a bevel gear 28 in mesh with the gear 27 to rotate the sleeve as hereunder described. Preferably the plate 15 is detachable to form an open side for the housing to allow inspection, assembly and oiling of the gears, the arm 2 being preferably formed with integral with the rear plate 16.

The construction of the light signal 6 is substantially as follows, being illustrated particularly in Figs. 1, 2 and 4:

A cross bar 29 is secured to the inner tube 25 near its upper end and supports a pair of rods 30. These rods have an inverted cup 31 forming a lamp casing attached at their upper ends to the inner part of the cup; thus having a closed top 32 and preferably cylindrical side walls 33, these side walls having the opposite signal slots 9.

The stencil cylinder 34 is formed with a base 35 with a flange 36 thereon, said flange having a set screw 37 therethrough to allow adjustable clamping on the rotatable sleeve 26. The stencil cylinder is provided with stencil cuttings indicating the different signals as right, left and stop, indicated by the numerals 38, 39 and 40 and also has an uncut section 41. Each side of the cylinder is formed the same so that the above signal words may show to the front and to the rear of the vehicle and the uncut section cutting off the signal when desired.

The operating handle 8 is adjustable longitudinally on the operating shaft 7, being keyed thereto by a set screw 42 and a stop mechanism comprising a segment 43 with notches 44 therein engaging a slidable block 45 having a spring pressed detent 46 slidably mounted therein; the detent engaging the notches and restraining the signal in any desired position.

A lamp socket 47 is secured to the upper end of the inner tube 25, the lamp being inserted by sliding the stencil cylinder downwardly on the outer sleeve 26 by loosening the screw 37 and by removing the screws 48 on the upper ends of the rods 30. Thus removing the lamp casing 31. One side of the socket is grounded and an electric lead wire 49 extends through the inner tube 25 and through the hub 24 having several loose turns 50 around the transverse shaft 17 and leads through an aperture 51 in the casing to a source of power.

The manner of operation of my signal is substantially as follows:

It is presumed that the normal non-signaling position is as indicated in Fig. 5, with the arm held vertically. Thus in pulling forward on the operating handle 28 the shaft 7 is rotated, thereby rotating the gear 22, which being in mesh with the gear 23 rigidly attached to the hub 24 and hence to the inner tube of the semaphore arm, operates the arm, swinging same through a partial circle, the arm being stopped and held in the desired position by the notches 44 and the cooperating detent 46 on the segment 43.

During this operation, on account of the gear 27 being stationary, the bevel gear 28 attached to the outer sleeve 26 is rotated and hence rotating the sleeve and the stencil cylinder attached thereto. The initial action is to rotate the cylinder so that the enclosed sections 41 which have been closing the signal slot 9 are moved out of register therewith and the word "right" brought into register with the signal slot. Thus when the semaphore arm is in the conventional position to give the right hand turn the stencil also indicates the word "right".

A continuing movement of the operating handle 8 swings the semaphore to a horizontal position, thus further rotating the stencil cylinder until the word "left" shows through the signal slot, thus giving the conventional left turn signal, both by position and by the word.

The "stop" signal is given by the extreme movement of the semaphore arm coupled with the further rotation of the stencil cylinder.

It will be thus seen that I have devised a simple form of swinging semaphore type of signal which gives the position indication as well as a word signal.

It is obvious that the arrangement may be adapted for right and left hand sides of a vehicle and also that instead of using a stencil cylinder with stencilled cuts to indicate the words, that a transparent cylinder could be used, the words and letters being opaque.

I have indicated only one type of gearing or manner of swinging the semaphore arm and rotating the stencil cylinder, however, these may be considerably changed to suit certain circumstances. Moreover, it is not necessary that my gear casing or signal be attached to a part of the vehicle as the gear housing may be incorporated directly in the structure of the vehicle and thereby form a neat and permanent arrangement.

From the above description it will be obvious that my invention may be considerably changed in general construction and in specific details without departing from the spirit thereof as set forth in the description, drawings and claims.

Having described my invention, what I claim is:

1. A traffic signal comprising in combination a gear housing having a slot, a transverse shaft therein, a semaphore arm rotatable on said shaft, said arm having an inner tube and an outer sleeve, a lamp casing supported by the inner tube, a lamp supported on said tube, a stencil mounted inside the lamp casing and supported on the sleeve, a fixed gear on the transverse shaft, a gear on the sleeve and means to rotate the semaphore arm, the movement of the semaphore arm rotating the sleeve and hence the stencil.

2. A traffic signal comprising in combination a gear housing, an operating shaft journaled therein having a gear in the housing, a transverse shaft, a gear having a hub connected thereto journaled on said shaft, a semaphore arm having an inner tube and an outer sleeve, the tube being secured to the hub, a lamp on the outer end of the tube, the said gears being in mesh, a stencil mounted on the sleeve and means operated by the movement of the semaphore arm to rotate the sleeve and hence the stencil.

3. A traffic signal as claimed in claim 2, in which the means to rotate the sleeve comprises a gear on said sleeve and a gear fixed in the housing.

4. A traffic signal as claimed in claim 2, having in addition a lamp casing attached to the inner tube extending downwardly over the stencil, the lamp casing having signal slots therein and the stencil having cut-out stencilled words and uncut sections adapted to register with the signal slot.

5. In a traffic signal a semaphore arm having a rotatable sleeve thereon, a lamp mounted on the end of the arm, a cross-bar attached to the arm having a plurality of rods extending beyond the arm, a cylindrical lamp casing attached to said rods, and extending downwardly over the lamp, the casing having a plurality of lamp slots therein, a stencil cylinder having stencilled cut-out words and uncut portions attached to the sleeve and extending into the lamp casing, means to swing the semaphore arm and means to rotate the sleeve and hence the stencil.

6. In a traffic signal as claimed in claim 5, having in addition means adjustably supporting the stencil cylinder on the sleeve.

In testimony whereof I have signed my name to this specification.

ADOLPH ADERER.