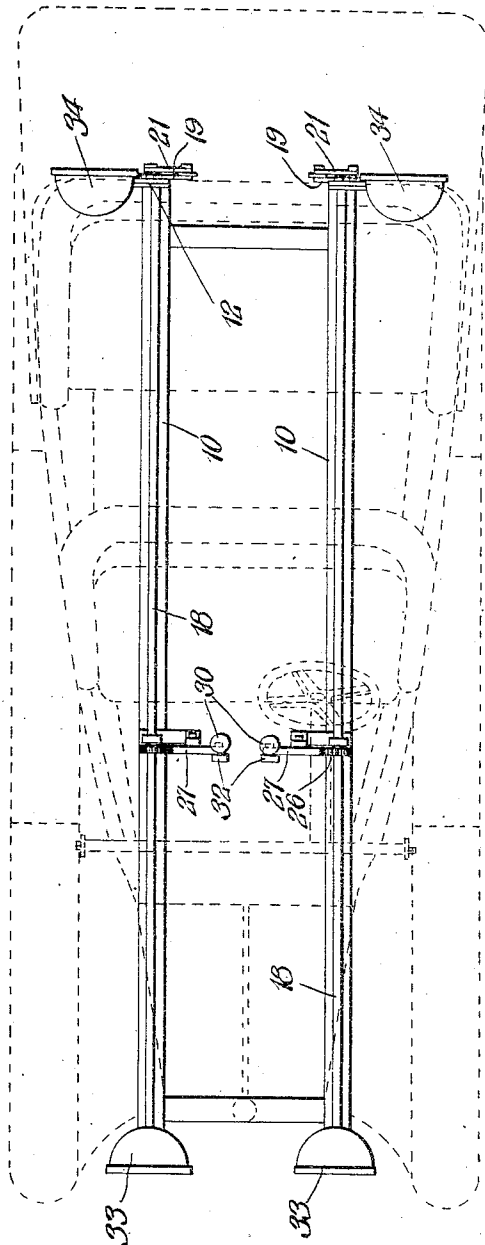


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DIRECTION INDICATOR FOR AUTOMOBILES.  
APPLICATION FILED JUNE 6, 1916.

1,234,975.

Patented July 31, 1917.  
3 SHEETS—SHEET 1.

Fig. 1.



Inventor,

P. W. Vanderhoff

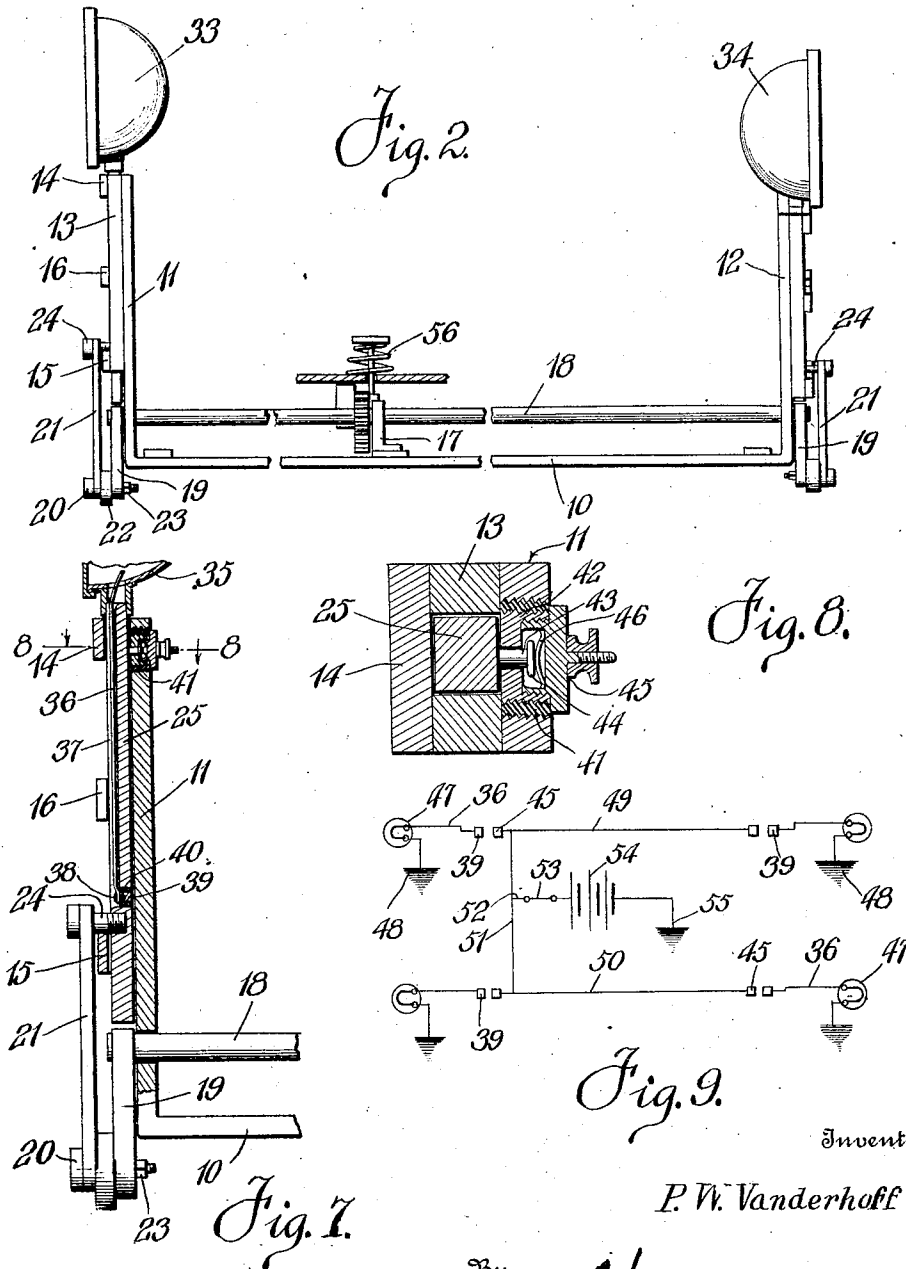
By

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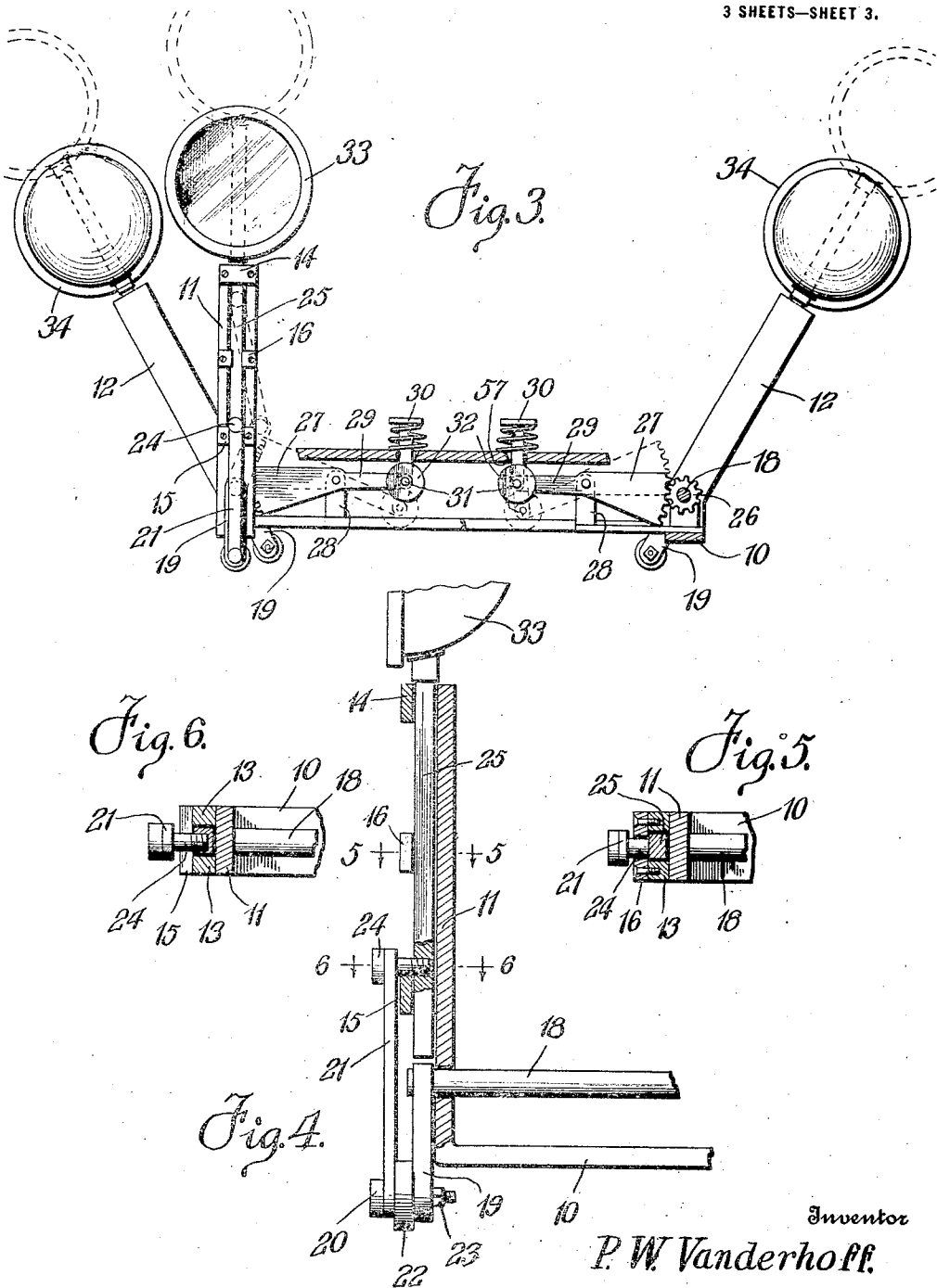
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Inventor  
P. W. Vanderhoff.

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# UNITED STATES PATENT OFFICE.

PAUL W. VANDERHOFF, OF TOPEKA, KANSAS.

DIRECTION-INDICATOR FOR AUTOMOBILES.

1,234,975.

Specification of Letters Patent.

Patented July 31, 1917.

Application filed June 6, 1916. Serial No. 102,043.

*To all whom it may concern:*

Be it known that I, PAUL W. VANDERHOFF, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Direction-Indicators for Automobiles, of which the following is a specification.

My invention relates to new and useful improvements in direction signaling systems and more particularly to signaling systems of this character for use upon motor vehicles, the primary object of my invention being the provision of a system in which the signal is given by the vertical or substantially vertical movement or raising of a suitable signal.

In this connection, a further object of my invention consists in equipping the vehicle with a pair of signals at the front and a pair at the rear and in providing a mechanism by means of which the signals at the right or the signals at the left of the vehicle may be selectively operated, the operation of both signals upon the same side of the vehicle being simultaneous.

While any suitable type of signal, such as a hand, pointer or other device may be employed, I preferably provide signal lights, one of the objects of the present invention consisting in the utilization of the usual head and tail lights of the vehicle for signaling purposes, although separate and independent lights may be employed, if preferred.

Another object which I have in view is the provision of a simple and durable mechanism by means of which the signal lights may be raised and lowered, as desired.

My invention further comprehends, in case lights other than the head and tail lights of the vehicle are employed as signals, the provision of means for automatically closing circuits through any lights which are raised for signaling purposes and for automatically opening such circuits when the lights are lowered.

With these and other objects in view, my invention will be more fully described, illustrated in the accompanying drawings, and then specifically pointed out in the claims which are attached to and form a part of this application.

In the drawings:

Figure 1 is a top plan view of my im-

proved signaling system applied to a conventional form of motor vehicle, the vehicle being shown in dotted lines;

Fig. 2 is a side elevation of the signaling system removed from the vehicle, parts being broken away to permit a showing upon a suitable scale;

Fig. 3 is a front elevation, partially in section, of the signaling system;

Fig. 4 is a vertical sectional view taken through one of the light standard supporting guides;

Figs. 5 and 6 are transverse sectional views taken on the corresponding lines of Fig. 4, looking in the direction of the arrows in both instances;

Fig. 7 is a view corresponding to Fig. 4, but showing an automatic means for opening and closing the signal light circuit;

Fig. 8 is a transverse sectional view taken on the line 8—8 of Fig. 7;

Fig. 9 is a diagrammatic view of one method of wiring the signal system when automatic control of the lights is desired.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

My improved signaling system preferably includes a pair of supporting members or bars 10 which are mounted to extend longitudinally of the vehicle, one at either side, and which, at their ends, are upturned to provide standard supporting guides 11 and 12 disposed at the front and rear of the vehicle. The upturned end portions of the bars 10 are either U-shaped in section or carry spaced guide strips 13 connected at their upper ends by a cross piece forming a retainer 14 and adjacent their lower ends by a similar cross piece 15. Intermediate these cross pieces are opposed retaining members 16, the adjacent ends of which are spaced for a reason which will be later apparent. The upturned ends 11, at the front of the vehicle, may be disposed adjacent either side of the radiator or near the dash, as preferred, and preferably project in a vertical direction, while the upturned ends 12, at the rear of the vehicle, are preferably inclosed in the vehicle body and project upwardly and outwardly at an angle in conformance to the contour of the body.

Brackets 17, carried by the side bars or frame members 11, together with the up-

turned ends of the frame members journal longitudinally extending parallel shafts 18 which, at their front and rear ends, carry crank arms 19 normally depending downward. Pivot bolts 20 are passed through the free ends of links 21, through spacer collars or sleeves 22 and through the free ends of the crank arms 19 and secured by nuts 23 or other suitable retaining means. Pivot bolts 24 are passed through the free ends of the links 21 and into the lower portions of standards 25 which are reciprocally mounted in the guideways formed at the front and rear of the vehicle by the upturned portions 11 and 12 and the guide strips and retainers carried thereby. Obviously, it will be apparent that the turning of either shaft 18 will act through its crank arms and connected links 21 to raise the standards 25 and so project their upper ends at a considerable distance above the guideways, the pivot bolts 24 passing freely between the spaced ends of the retaining members 16 during this movement of the standards. If, therefore, any suitable signal, such as a hand, arrow or light, is mounted upon each standard, it will be clear that both signals at the right or both signals at the left of the vehicle may be raised by proper turning of their controlling shaft.

As a means for selectively turning the shafts to raise and lower the standards, I provide each shaft with a pinion 26 which meshes with a toothed sector 27 swingingly supported by a bracket 28 carried by the adjacent side bar 10 and provided with an arm 29 extending in the direction opposite to the toothed terminal and carrying a foot plunger 30 which projects through the floor of the vehicle and which serves as a means for swinging the toothed sector 27 to turn the shaft with which it coöperates. These foot plungers or pedals are secured to the arms 29 by bolts or other suitable fastening devices 31 which also serve to support counterweights 32. These weights should be of sufficient weight to each nearly counterbalance the weight of one pair of signals, of the type employed, and their operating mechanism so that after such pair of signals has been raised by a depression of the foot pedal, the signals will be gradually lowered to place upon release of the pedal.

Although any suitable signal may be mounted upon each of the standards 25, I prefer to employ the usual head or side lights of the vehicle, the usual tail light and a supplemental tail light. In the drawings, the headlights are shown at 33 and the tail lights at 34. Obviously, the condition of all lights, as far as appearance is concerned, will be the same as during the day all lights will be extinguished and during the night all lights will be illuminated. The signaling is, therefore, accomplished not

by the appearance of certain of the lights with respect to the others, but by their position with respect to the others. For instance, if the lights at one side of the vehicle are raised, attention will be called to them and they will serve to indicate an intent upon the driver's part to turn in that direction. If all the lights are raised, they will show intent to stop the vehicle or to back it. This signal will, obviously, be displayed at both the front and rear of the vehicle and will warn drivers of other vehicles approaching from either direction, as well as pedestrians at street crossings and the like.

If desired, lights in addition to the usual head or side lights and tail lights of the vehicle may be employed for the signaling system and if such is the case I preferably provide means for automatically opening and closing the light circuits when the signal lights are in normal or in danger position. In Figs. 7 to 9 of the drawings I have illustrated a system in which one of the signal lights 35 has one of its bulb terminals grounded and has a wire 36 leading from its other terminal through a channel or bore 37 formed in the standard 25 to a binding post 38 carried by a contact brush 39 mounted in the standard and insulated therefrom by a sleeve 40. Mounted in the upstanding arm or guide 11, adjacent its upper end, is a sleeve of insulating material 41 into which is threaded a metallic cup 42 formed with an opening through which projects a contact pin 43, the head 44 of which seats in the cup. A binding post 45 is threaded into the open end of the cup and engages against a leaf spring 46 which in turn engages the contact pin. It will, therefore, be clear that when the standard 25 is raised, the contact brush 39 will engage the contact pin 43. Current is supplied to the light through any suitable conductor connected to the binding post 45.

In Fig. 9 I have shown diagrammatically one wiring system which may be employed, in which the lights 47 are grounded, as shown at 48, and provided with leads 36 connecting the brushes 39. A wire 49 connects the binding post 45 of the signals at one side of the vehicle, while a wire 50 connects the binding post at the other side of the vehicle. A wire 51 connects the wires 49 and 50 and a branch wire 52, including in its length a manually operable switch 53, leads from the wire 51 to one pole of a battery 54, the other pole of which is grounded as shown at 55. In place of the battery, current may be supplied by a magneto or dynamo, if desired. With the above described wiring, it will be clear that if the switch 53 is closed, any signal lights which are raised will be connected in grounded circuit with the battery. Opening of the switch 53 will cut out

all the lights so that the signal may be employed in the daytime without waste of current.

Inasmuch as numerous signal devices proper may be employed with my system and various ways of wiring the system, if electric signal devices are utilized, may be designed, I do not wish to limit myself to the specific details of construction and particular arrangement of parts shown, but reserve the right to make any changes, within the scope of the appended claims, without in the slightest degree departing from the spirit of my invention.

For instance, springs 56 may be provided to normally hold the pedals in raised position to prevent undesired movement of the lights, due to jolting of the vehicle, and the shanks of the pedals may be notched so that they may be swung into engagement with the latches 57 to hold the pedals in lowered position against the springs if the driver wishes to keep the signals in raised position for any length of time.

Having thus described the invention, what is claimed as new is:

1. In direction signals for vehicles, guides mounted at the front and rear of the vehicle, signal carrying standards reciprocally mounted in the guides, and means for reciprocating the standards, said means including a rock shaft, crank arms carried by the rock shaft, links connecting the free ends of the crank arms with the standards, and means for rocking the shaft.

2. In direction signals for vehicles, guides mounted at the front and rear of the vehicle, signal carrying standards reciprocally mounted in the guides, a rock shaft, crank

arms carried by the rock shaft, links connecting the crank arms and standards, a pinion fixed upon the rock shaft, a counterweighted sector meshing with the pinion, and means for swinging the sector.

3. In direction signals for vehicles, reciprocally mounted signal elements, a rock shaft, crank arms carried by the rock shaft adjacent the signal elements, links operatively connecting the crank arms with the signal elements, a pinion fixed on the shaft, a counterweighted segment operatively mounted and meshing with the pinion, and a foot pedal operatively connected to the counterweighted end of the segment.

4. In direction signals for vehicles, reciprocally mounted signal elements, a rock shaft, crank arms carried by the rock shaft adjacent the signal elements, links operatively connecting the crank arms with the signal elements, a pinion fixed on the shaft, a counterweighted segment operatively mounted and meshing with the pinion, a foot pedal operatively connected to the counterweighted end of the segment, and a spring for normally holding the pedal in one position.

5. In a direction signal for vehicles, a guide provided in one face with an open channel, retaining elements secured to the guide and projecting partially across the channel, a standard reciprocally mounted in the guide, a stud projecting from the standard and movable past the retaining elements, a signal element carried by the standard, and means operatively connected to the stud for reciprocating the standard.

In testimony whereof I affix my signature.

PAUL W. VANDERHOFF. [L.S.]