R. G. SMITH.

SIGNALING DEVICE.

APPLICATION FILED AUG. 12, 1919.

1,417,419.

Patented May 23, 1922.

3 SHEETS—SHEET 1.

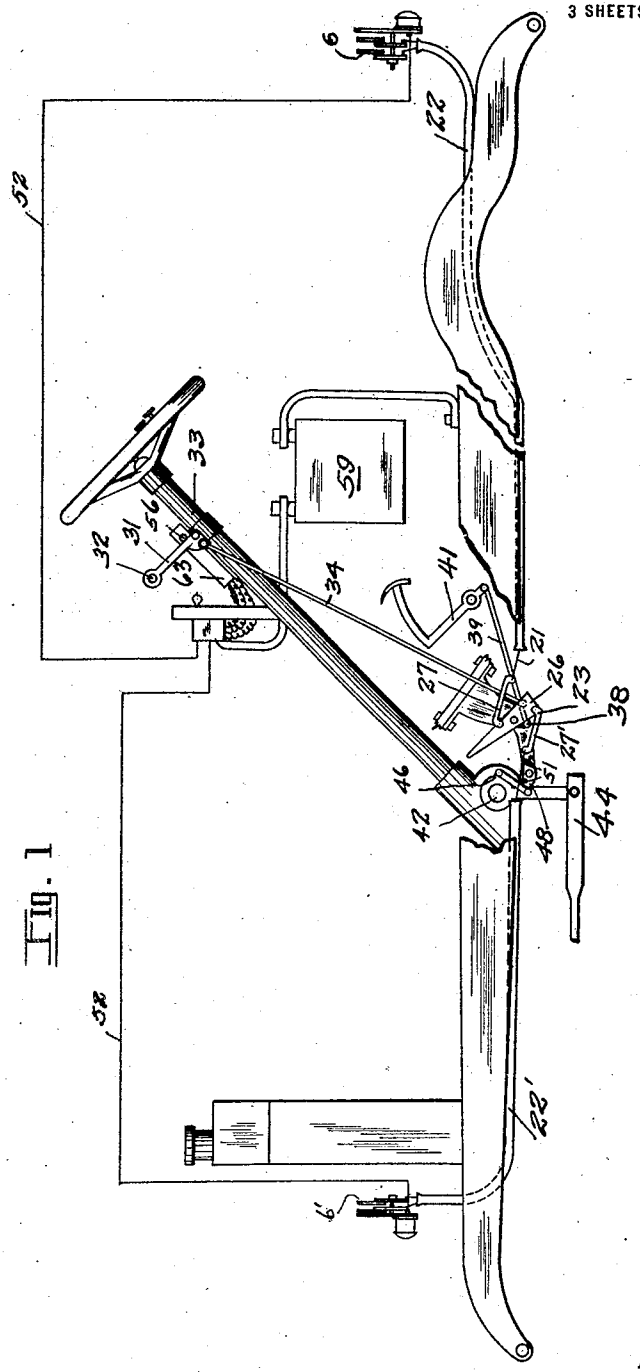


Fig. 1

WITNESS:
C. S. Evans

INVENTOR.
R. G. SMITH.
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his ATTORNEYS.

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3 SHEETS—SHEET 2.

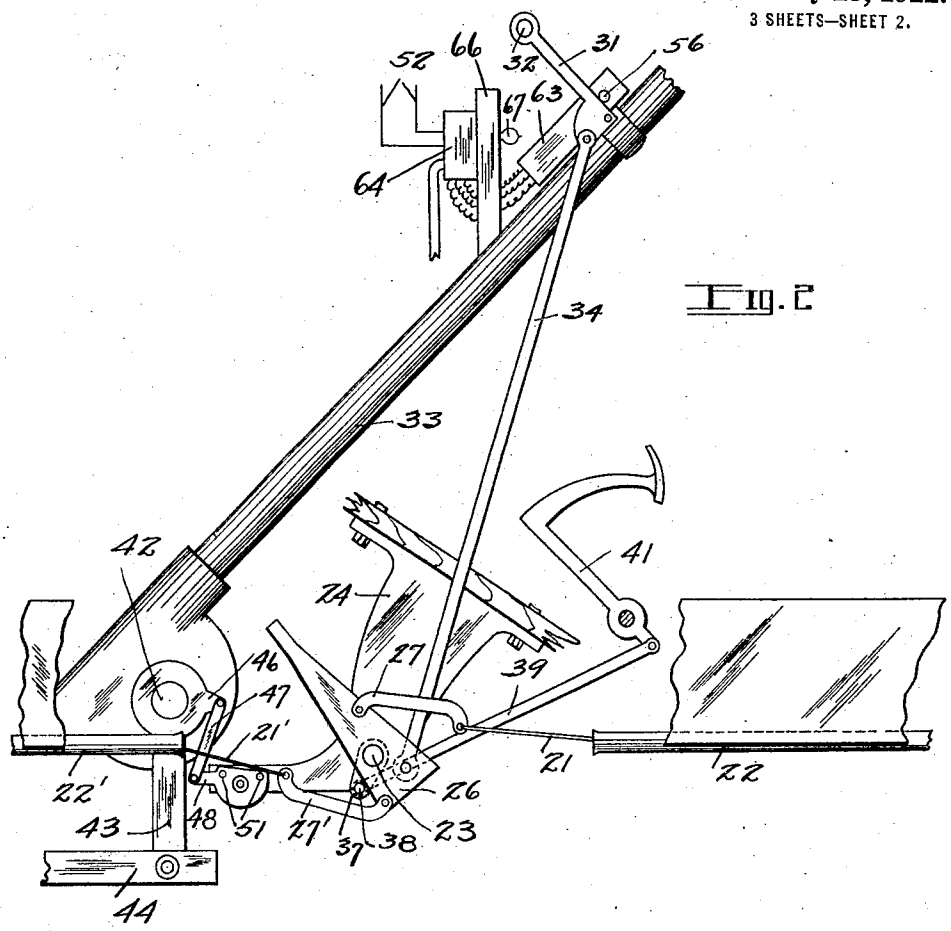


Fig. 2

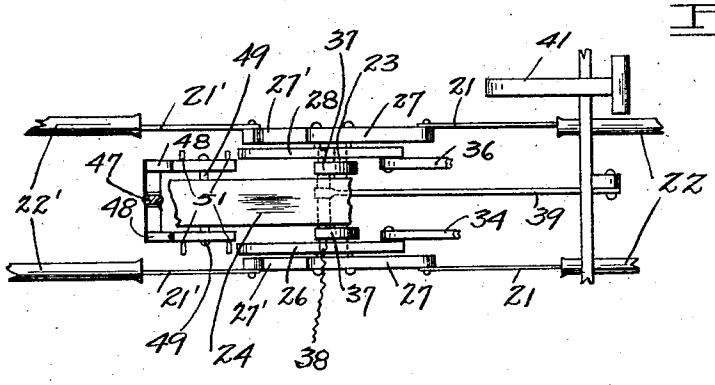


Fig. 3

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3 SHEETS—SHEET 3.

Fig. 4

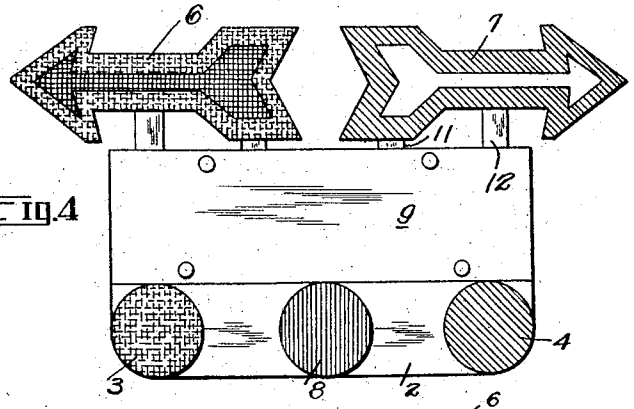


Fig. 5

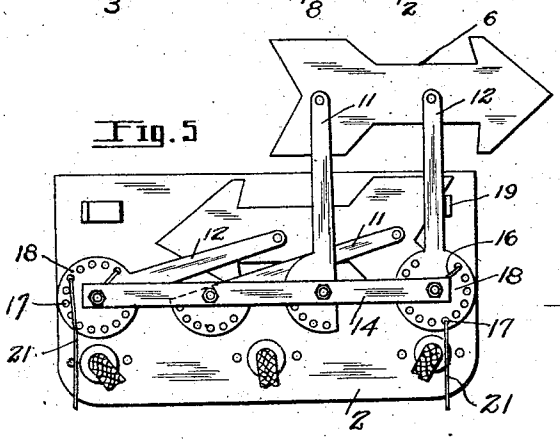
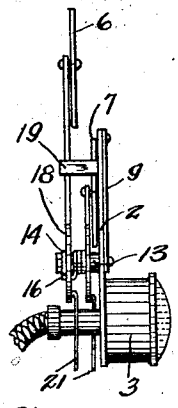


Fig. 6



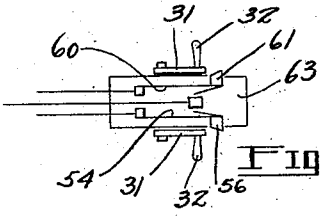


Fig. 7

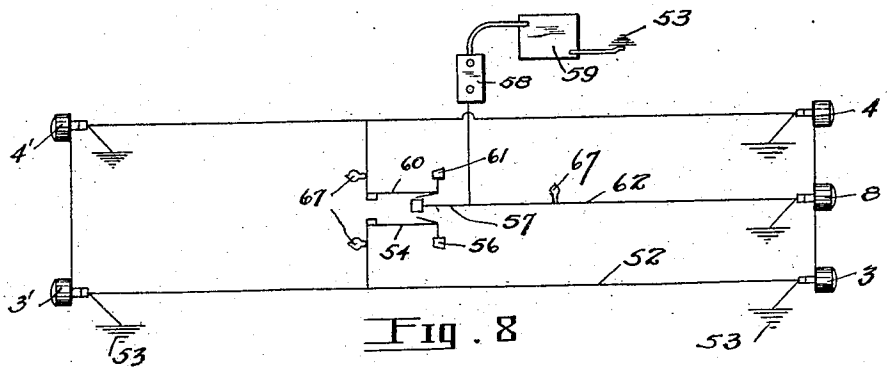


Fig. 8

WITNESS:
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UNITED STATES PATENT OFFICE.

RAYMOND G. SMITH, OF MOSS BEACH, CALIFORNIA.

SIGNALING DEVICE.

1,417,419. Specification of Letters Patent. Patented May 23, 1922.

Application filed August 12, 1919. Serial No. 317,031.

To all whom it may concern:

Be it known that I, RAYMOND G. SMITH, a citizen of the United States, and a resident of Moss Beach, county of San Mateo, and State of California, have invented a new and useful Signaling Device, of which the following is a specification.

My invention relates to direction and stop signals for automobiles.

An object of the invention is to provide a signal for indicating to an observer either ahead or behind the automobile, the intention of the driver as to turning or stopping.

Another object of the invention is to provide a signal which is automatically cleared as soon as the turn is begun.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of my invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood that I do not limit myself to the showing made by the said drawings and description, as I may adopt variations of the preferred form within the scope of my invention as set forth in the claims.

Referring to the drawings:

Figure 1 is a side elevation of the signaling device as applied to an automobile, of which only such parts are shown as are needed to make the application of the device clear. Figure 2 is a side elevation of a portion of the apparatus shown in Figure 1, but on a larger scale. Figure 3 is a plan view of the mechanism shown in Figure 2. Figure 4 is a front elevation of the signal frame, showing the movable signals exposed to indicate "stop" or "slow down." Figure 5 is a rear elevation of the signal frame, showing a rear signal exposed to indicate a turn to the left. Figure 6 is an end elevation of the structure shown in Figure 5. Figure 7 is a plan view partly in diagrammatic form showing the electric control switch of the signal lamps. Figure 8 is a diagram of the electric circuits in my signaling device.

Referring first to Figures 4, 5 and 6, which show the construction of the signaling means. Suitably secured on the rear end of the car is a plate 2 upon which lamps 3 and 4 and movable signals 6 and 7 are arranged. Preferably also a tail lamp 8 and license number plate 9 are disposed on the plate 2. Each signal 6 and 7 is preferably formed as an arrow and preferably is colored. For instance, signal 6 may be yellow with a black center, and signal 7 may be green with a white center as indicated in Figure 4. Similarly the lamps 3 and 4 are colored yellow and green respectively, since signal 6 and lamp 3 act together, both conveying to the observer the same information. Similarly signal 7 and lamp 4 are coordinated. Each movable signal 6 and 7 is mounted on parallel arms 11 and 12 which are pivotally mounted on the studs 13 arranged on the plate 2. A bar 14 connects all the studs and retains the arms 11 and 12 thereon. A coil spring 16 is interposed between each arm 12 and its stud and these springs are placed in tension when the signal is exposed. One end of each of the springs 16 is preferably engaged in one of the series of apertures 17 formed in the enlarged circular end 18 of each arm 12, and adjustment of the tension is conveniently secured by shifting the spring to engage in the desired aperture. The signals 6 and 7 and their supporting arms are arranged in different planes so that either signal or both together may be exposed or concealed without interference. A stop 19 limits the exposing movement of the signals.

Means are provided for operating each signal 6 and 7 separately or together. When separately exposed, they indicate a turn in the direction of the arrow. Together they indicate "slow down" or "stop," or an intention to back up. Attached to the head 18 of the arm 12 of the signal 6 is a cable 21 which passes through the conduit 22 conveniently disposed in the frame of the automobile. Pivotally mounted on the shaft 23 secured in the bracket 24 which is suitably fixed on a convenient portion of the car, is a lever 26. The cable 21 is connected to the lever by the U-form link 27, so that when the lever is turned to expose or raise the signal 6, the point of pivotal connection with the link passes the dead center, the parts being then retained in position, the signal 6 exposed, by the tension of the spring 16. When the lever is moved in the

opposite direction off the dead center, the spring 16 insures the movement of the signal to concealed position behind the plate 2.

At the front end of the car is preferably arranged a signal apparatus similar to that at the rear end and the corresponding movable signals 6′ and 7′ are similarly connected to lever 26 by cable 21′ and link 27′, the cable passing through the conduit 22′. Thus when the lever is turned to expose the signals, it rotates past its dead center in respect of both links 27 and 27′. The movable signal at the rear of the car which when exposed alone indicates a turn to the right, and the corresponding signal at the front of the car, are similarly connected to a lever 28, Figure 3, mounted on the shaft 23 and similar to and spaced a short distance from the lever 26. There are thus two sets of signals, one at each end of the car, and corresponding signals of the two sets are connected for unitary operation so that the intention of the driver as to turning or stopping may be shown at both front and rear ends of the car.

Means are provided for manually controlling or actuating the levers 26 and 28, and this means also is in duplicate so that each lever may be actuated separately. A lever 31 provided with a handle 32 convenient to the hand of the driver is pivotally fixed on the steering post 33 of the automobile, and is connected by link 34 with lever 26 in such manner that when the lever 31 is pulled upwardly the lever 26 is rotated to expose the signals 6 and 6′. A similar lever and handle is provided for the movement of lever 28 and is connected to that lever by the link 36, the lower portion of which is shown in Figure 3.

Obviously either of the pairs of signals may be exposed separately or both pairs together by manual operation of the handles 32, but preferably means are provided for coordinating the application of the brakes and the display of the "slow down" or "stop" signal. Mounted pivotally on the shaft 23 on each side of the bracket 24 are lever arms 37. The lever arms are connected by a pin 38 which extends outwardly below the edges of the levers 26 and 28 and also acts as a pivot pin connecting the two levers 37 with a link 39 attached at its other end to the brake pedal lever 41. Movement of the brake pedal to apply the brakes thus swings the levers 37, engaging the pin 38 with both levers 26 and 28 and turning them to effect the exposure of the front and rear signals of both pairs, thus indicating a stopping or slowing down of the car. Release of the brake pedal permits the signals to return to concealed position.

Means are provided for automatically clearing the signal after the evolution indicated has been performed, although of course the signal may also be cleared by movement of the handles 32 back to first position. This automatic clearing preferably depends on the movement of the steering wheel, so that the mere act of turning the steering wheel is accompanied automatically by a clearing of the signal. Fixed on the horizontal shaft 42 which is mediately connected to the steering wheel by the usual worm wheel, worm, and steering rod, and which is also mediately connected to the steering knuckles of the front wheels by the usual steering lever 43 and link 44, is a lever arm 46 connected by link 47 with a pair of levers 48. The levers 48 are pivoted on pins 49, one on each side of the bracket 24 and each lever 48 is provided with pins 51 spaced on each side of the pivot pin 49. The position of the levers 48 is such that the pins 51 underlie the upper ends of the levers 26 and 28, so that when those levers are turned down to expose the signals, the upper ends thereof engage the two pins 51 on each lever. Normally the levers 48 are in horizontal position and when either or both levers 26 and 28 are turned down they pass the dead center before engaging the pins 51. From the above it will be seen that movement of the steering wheel in either direction will tip the levers 48 and move either one or the other of the pins 51 upwardly, thus throwing the engaged lever 26 or 28 upwardly and off dead center so that the lever returns to normal position and the signal to concealed position.

Means are provided for operating the lamps 3 and 4 of each signaling device in conjunction with the movable signals when it is desired to do so. These lamps not only convey information similar to that of the signals but also help to illumine the movable signals, so that at such times both are visible. The lamp 3 at the rear of the car and lamp 3′ at the front are connected in parallel by the conductor 52, the circuit being grounded at 53. A spring switch 54 closed by pressure on the button 56 provides connection between the conductor 52 and the conductor 57 connected through switch 58 to the battery 59 which is also grounded at 53. Similar connections including the switch 60 operated by the button 61 are provided for the lamps 4 and 4′ in the rear and front signals respectively. The tail lamp 8 is also connected in parallel with the other lamps by conductors 62, this circuit being also grounded.

The two switches 54 and 60 are enclosed in a box 63 arranged on the steering column so that the buttons 56 and 61 which are beveled are engaged and pressed inwardly by the signal control levers when the latter are raised to operate the movable signals. Thus, when lever 31 is pulled upwardly, not only are the movable signals 6 and 6′ ex-

posed but the button 56 is pressed inwardly, closing the switch 54 and if the control switch 58 be closed, lighting the lamps 3 and 3'. The several circuits are connected into a suitable fuse box 64 set on the back of the instrument board 66, and pilot lights 67 are preferably disposed in each circuit.

In order that lights and signals of the same color may point always in the same direction relative to the observer whether he is behind or in front of the car, the front left signal and lamp and the rear right signal and lamp are of the same color, in the present instance green. Similarly the front right signals and the rear left signals are of the same color.

I claim:

1. In a signaling device for automobiles, a pivotally mounted lever, a U-form link pivotally attached at one end to said lever, a normally concealed signal mediately connected to the other end of said link, means operated by the driver for turning said lever past its dead center to expose said signal and retain it in exposed position, a second lever pivotally mounted adjacent said first lever, means connecting said second lever with the steering wheel and means on said second lever for moving the first lever off its dead center when said second lever is moved in either direction by the steering wheel.

2. In a signaling device for automobiles, a normally concealed signal, a spring for resiliently retaining the signal in concealed position, a pivotally mounted lever connected to said signal and rotatable past its dead center to expose said signal and retain it in exposed position by the tension in said spring, means operated by the driver for rotating said lever, and means actuated by the steering wheel for rotating said lever off its dead center to permit said spring to effect the movement of said signal to concealed position.

3. In a signalling device for automobiles, a normally concealed signal, a pivotally mounted lever connected to said signal and rotatable past its dead center to expose said signal, manually operated means for rotating said lever, a spring tensioned by the movement of said lever toward its dead center, pivotally mounted stops for limiting the movement of said lever past its dead center, and means actuated by the steering wheel for moving one of said tops to rotate said lever off its dead center to permit said spring to effect the recovery of said lever and the movement of said signal to concealed position.

4. In a signaling device for automobiles, a pair of normally concealed signals, a pivotally mounted lever connected to each signal and rotatable past its dead center to expose the associated signal, manually operated means for rotating said lever, a spring tensioned by the movement of each lever toward its dead center, a pair of pivotally mounted stops for limiting the movement of each lever past its dead center, means actuated by the steering wheel for moving said stops to rotate the lever or levers in engagement therewith off dead center, and means actuated by the brake for simultaneously rotating both said levers past their dead centers.

In testimony whereof, I have hereunto set my hand at San Francisco, California, this 25th day of July, 1919.

RAYMOND G. SMITH.

In presence of—
C. S. EVANS.