C. WENDE.

SIGNAL ATTACHMENT FOR AUTOMOBILES AND THE LIKE.

APPLICATION FILED APR. 30, 1914.

1,198,495.

Patented Sept. 19, 1916.

5 SHEETS—SHEET 1.

Fig. 1.

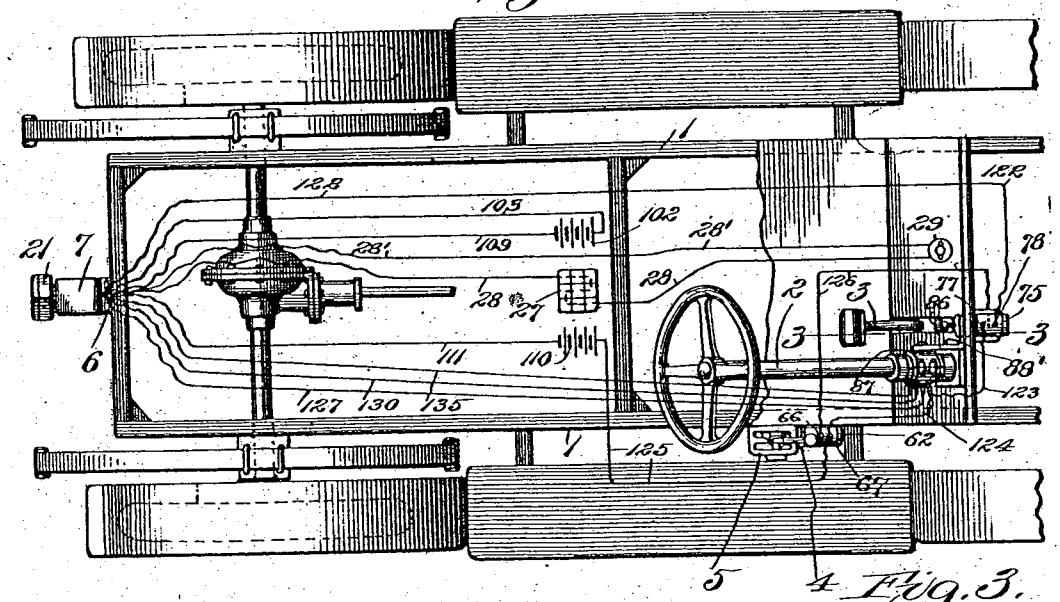


Fig. 3.

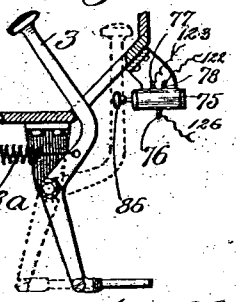


Fig. 2.

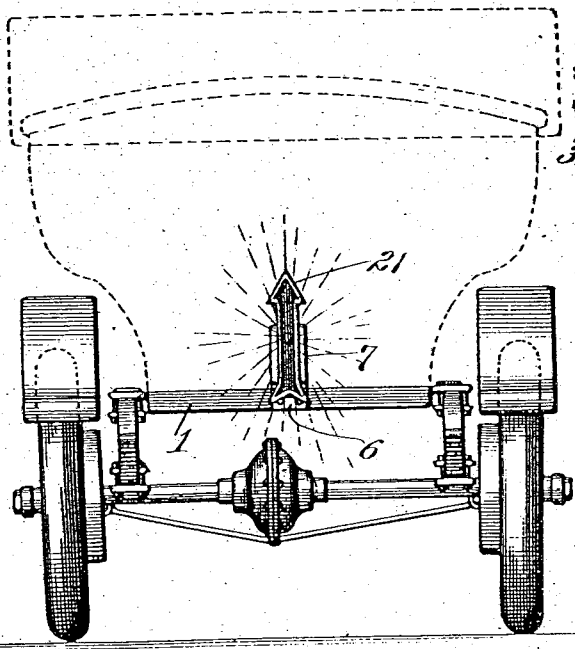


Fig. 2b.

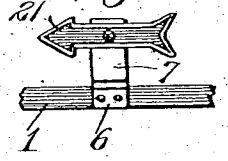


Fig. 2c

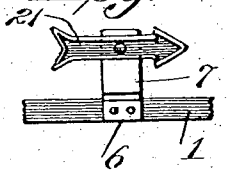
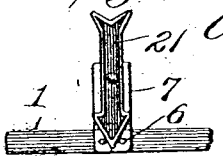


Fig. 2a



Attest:

Wm. H. Scott.

Lelia Hauk

Inventor:

Charles Wende,

Ralph Lavin

Atty.

C. WENDE.

SIGNAL ATTACHMENT FOR AUTOMOBILES AND THE LIKE.

APPLICATION FILED APR. 30, 1914.

1,198,495.

Patented Sept. 19, 1916.

5 SHEETS—SHEET 2.

Fig. 4.

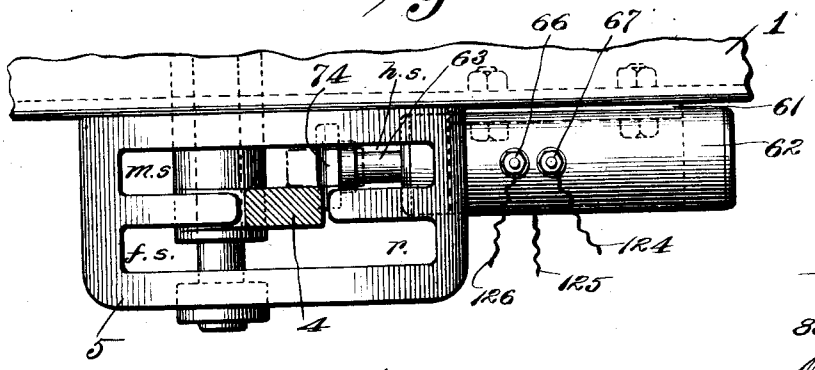


Fig. 5.

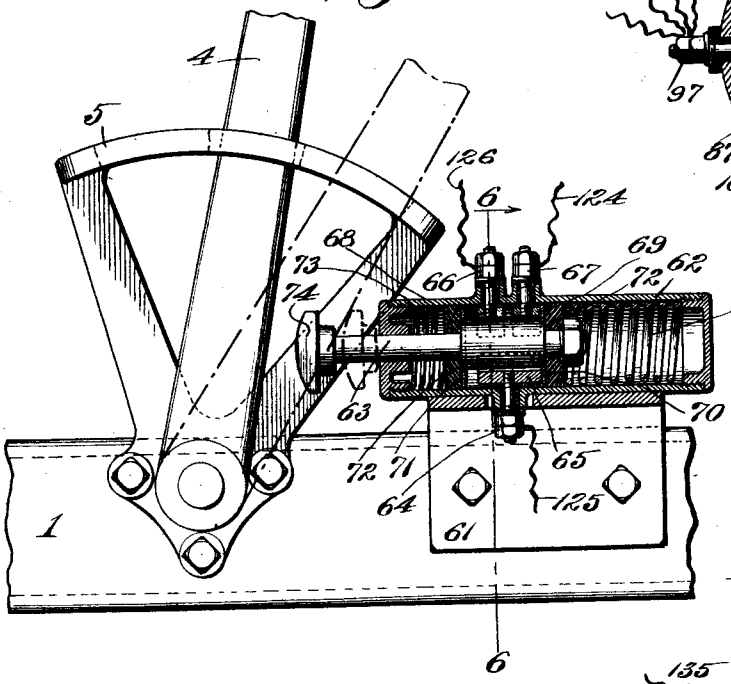


Fig. 7.

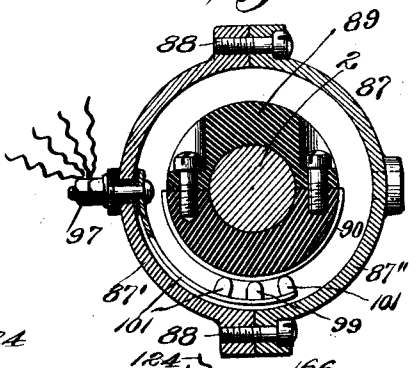


Fig. 6.

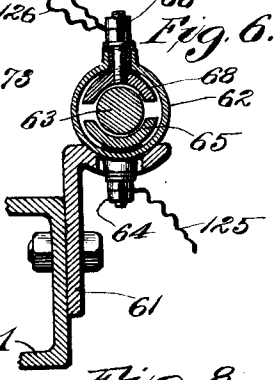
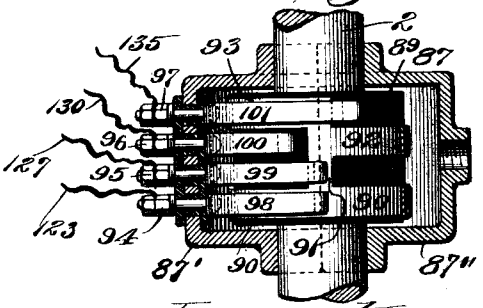


Fig. 8.



Attest:
Wm. H. Scott.
Lelia Hauk.

Inventor:
Charles Wende,
by Ralph Kirsch
Atty.

C. WENDE.

SIGNAL ATTACHMENT FOR AUTOMOBILES AND THE LIKE.

APPLICATION FILED APR. 30, 1914.

1,198,495.

Patented Sept. 19, 1916.

5 SHEETS—SHEET 3.

Fig. 9.

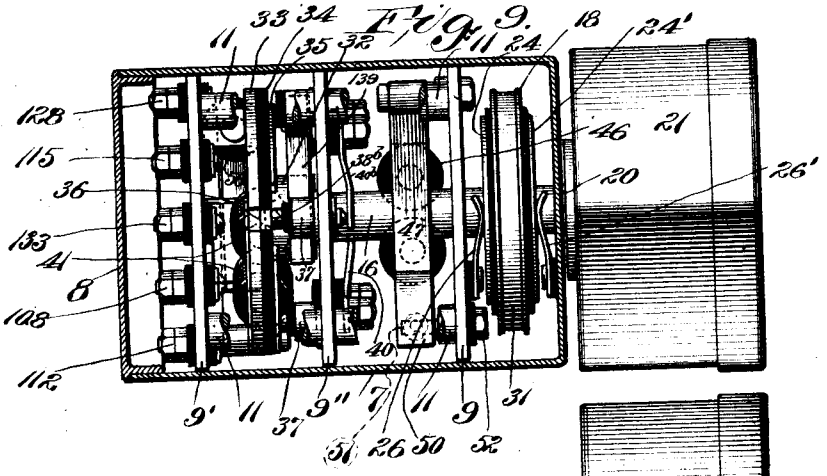
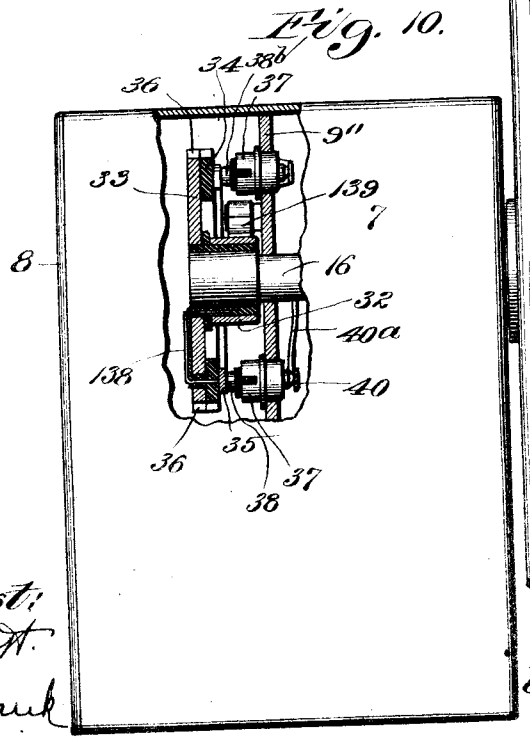
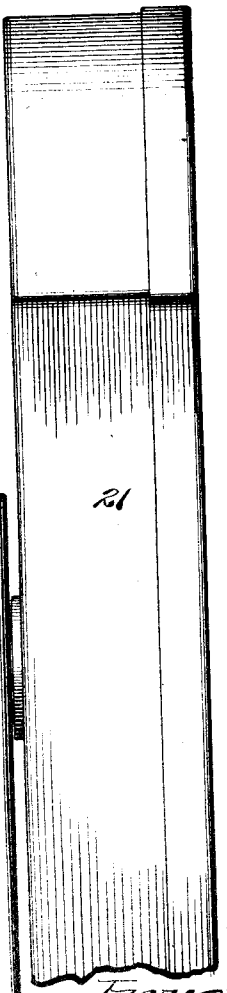


Fig. 10.





Attest:
Wm. H. Hart.
Leha Hauk

Inventor:
Charles Wende,
by Ralph Kaish
Atty

C. WENDE.

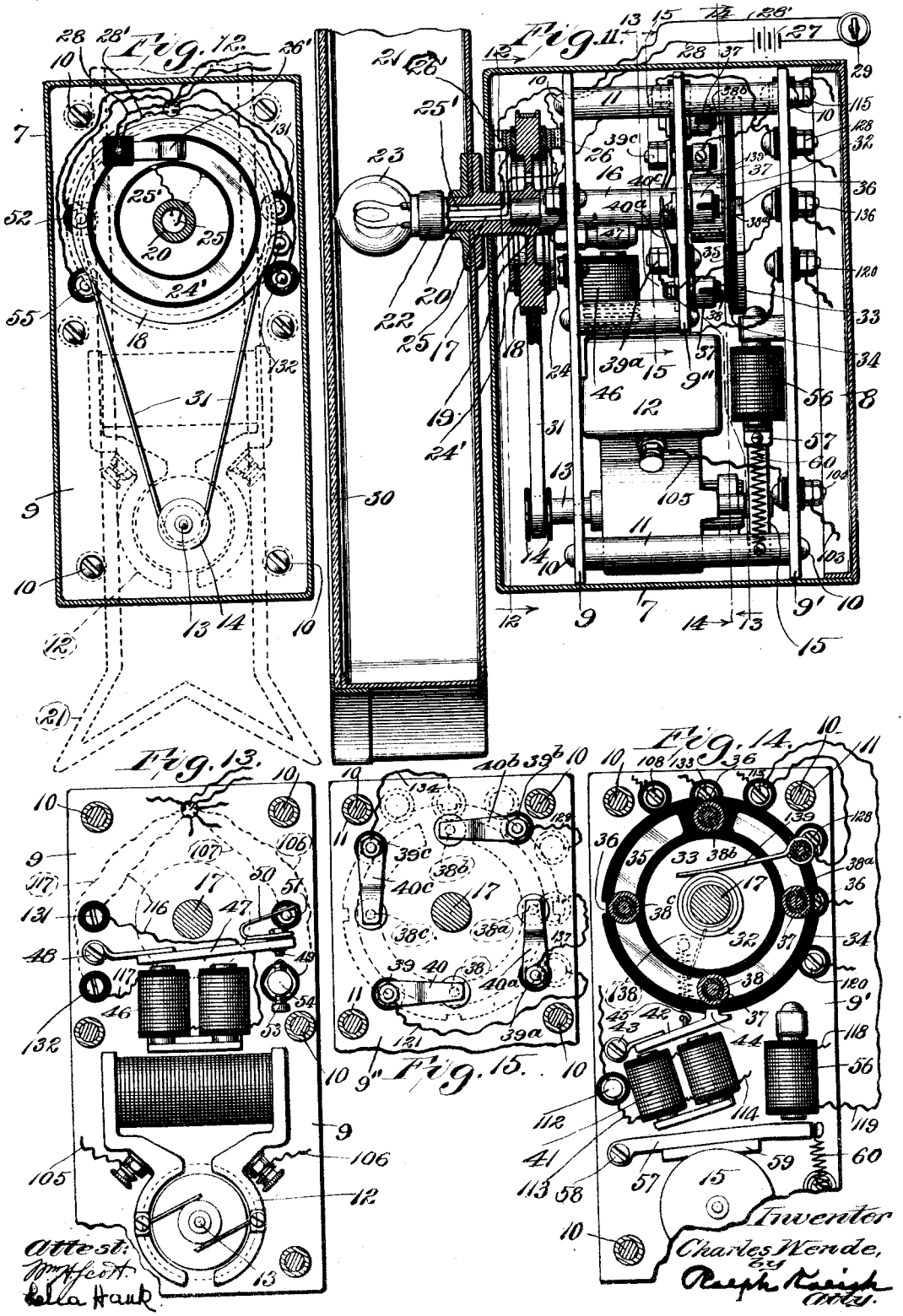
SIGNAL ATTACHMENT FOR AUTOMOBILES AND THE LIKE.

APPLICATION FILED APR. 30, 1914.

1,198,495.

Patented Sept. 19, 1916.

5 SHEETS—SHEET 4.



C. WENDE.

SIGNAL ATTACHMENT FOR AUTOMOBILES AND THE LIKE.

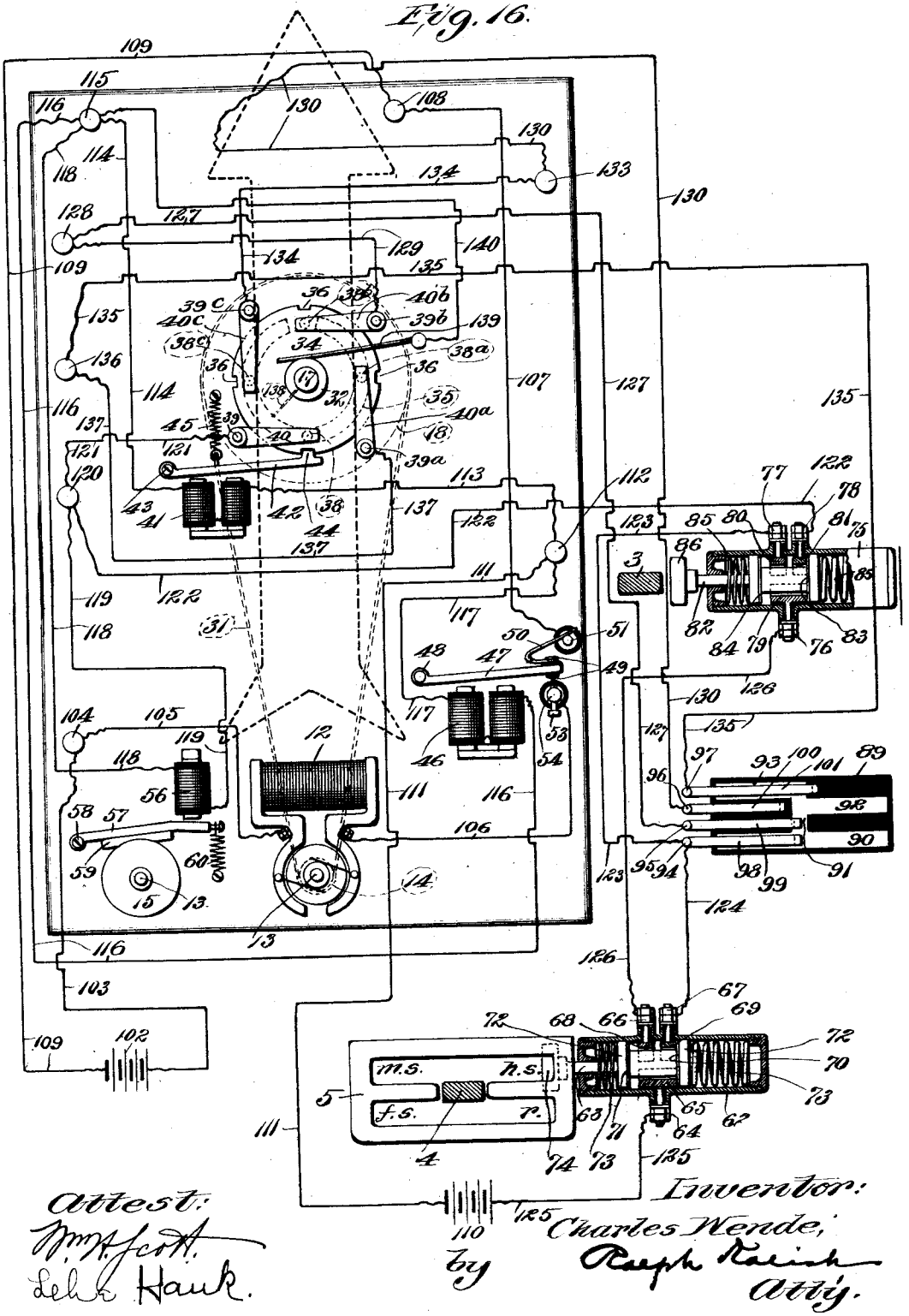
APPLICATION FILED APR. 30, 1914.

1,198,495.

Patented Sept. 19, 1916.

5 SHEETS—SHEET 5.

Fig. 16.



Attest:
Wm. A. Scott.
Lehr Hauk.

Inventor:
Charles Wende,
by Ralph Kaiser
Atty.

UNITED STATES PATENT OFFICE.

CHARLES WENDE, OF ST. LOUIS, MISSOURI.

SIGNAL ATTACHMENT FOR AUTOMOBILES AND THE LIKE.

1,198,495. Specification of Letters Patent. Patented Sept. 19, 1916.

Application filed April 30, 1914. Serial No. 835,466.

To all whom it may concern:

Be it known that I, CHARLES WENDE, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Signal Attachment for Automobiles and the like, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention relates to a certain new and useful attachment for automobiles and the like adapted to indicate or signal the occupants of following cars or traffic that the automobile or car equipped with my new attachment is about to stop or slacken speed or to turn to the right or to the left, and so on, as the case may be, an object of my present invention being briefly to provide an electrically-operated attachment of the kind and for the purposes stated having signal-carrying means included in a plurality of parallel electric circuits adapted to be respectively at once completed on the positive actuation of an essential part or parts of the car, such, for instance, as the steering-wheel and clutch-operating and gear-shifting levers of a gasolene-driven car, the signal being, on the completion of one or the other of said circuits, electrically actuated to assume its corresponding indicating or signaling position and then, the said circuit being at once broken, releasably locked in such signaling position until again electrically actuated, on the completion of another of said circuits, to assume a second corresponding signaling position, and so on, the provision and use of any circuit-completing buttons, switches, and the like requiring the special attention of, or to be separately and specifically actuated by, the operator of the car to complete the said circuits to electrically cause the signal to assume its respective indicating or signaling positions being entirely obviated.

With the above and other objects in view, my invention resides in certain novel features of form, construction, arrangement, and combination of parts, all as will hereinafter be described and afterward pointed out in the claims.

In the accompanying drawings, which show the preferred embodiment of my invention, Figure 1 is a plan view of an automobile (with its body removed) equipped with my new signaling-attachment, the electric wiring and circuits forming part thereof being diagrammatically shown; Fig. 2 is a rear view of the automobile, the indicator-arrow forming part of my new attachment being shown in "up" position, as when the automobile is either standing still or running at reduced or low speed; Fig. 2^a is a detail elevational view showing the indicator-arrow in "down" position, as when the automobile is running at full or approximately full speed; Fig. 2^b is a similar view showing the indicating or signaling position of the arrow as when the automobile is about to turn to the left; Fig. 2^c is also a similar view showing the indicating or signaling position of the arrow when the automobile is about to turn to the right; Fig. 3 is an enlarged detail sectional view on the line 3—3, Fig. 1; Fig. 4 is an enlarged detail plan view showing the automobile gear-shifting lever and its slotted segment or guide and one of the circuit-changing members of my new attachment; Fig. 5 is a view showing the automobile gear-shifting lever and its segment or sector in side elevation and the said circuit-changing member of my new attachment in vertical longitudinal section; Fig. 6 is a vertical transverse sectional view on the line 6—6, Fig. 5; Fig. 7 is a transverse sectional view through the steering-post of the automobile, showing also in transverse section the circuit-changing members and their housing of my new attachment mounted thereupon; Fig. 8 is a longitudinal sectional view of the housing or casing shown in Fig. 7, a portion of the steering-post of the automobile and the circuit-changing members of my new attachment housed in said casing being shown in elevation; Fig. 9 is a plan view of the indicator-arrow and its immediate associate parts, the indicator-arrow being shown in "up" position and the casing or housing for said parts being shown in horizontal section; Fig. 10 is a side elevational view of the housing or casing shown in Fig. 9 and of the indicator-arrow in "up" position, the casing being partly broken away and parts housed therein being shown in section; Fig. 11 is a vertical sectional view taken through the indicator-arrow and said housing, parts of the mechanism housed in said housing being shown in section; Fig. 12 is a vertical sectional view taken on approximately the line 12—12, Fig. 11; Fig. 13 is a vertical sectional view taken approximately on the line 13—13, Fig. 11, the housing or casing

for the parts or mechanism shown being omitted; Fig. 14 is a vertical sectional view taken approximately on the line 14—14, Fig. 11, the housing or casing for the parts or mechanism shown being also omitted; Fig. 15 is a vertical sectional view taken on approximately the line 15—15, Fig. 11, the casing or housing for the parts shown being again omitted; and Fig. 16 is a view showing in diagrammatic form the several movable and actuating parts and circuit-changing members of my new attachment with the several electric circuits in which the same are included.

Referring now to the said drawings, in which like reference characters refer to like parts throughout the several views, 1 indicates the chassis or frame, 2 the steering-post, 3 the clutch-operating foot-lever, and 4 the speed or gear-shifting lever of a gasolene-driven automobile of any approved construction. I may here state, however, that, while I have herein shown my new attachment in connection with a gasolene-driven car, it may be equally well attached to and employed in connection with an electric or steam-driven automobile, the controller and brake-lever of the electric car and the throttle and brake-levers of a steam-driven car corresponding, respectively, with the clutch-operating and gear-shifting levers 3 and 4 of the gasolene car herein mentioned.

As is well known in automobile construction, the clutch- (not shown) operated or actuated by lever 3 operatively connects the engine of the car with the transmission-shaft and normally, under the pull of a spring or other suitable means 3^a, yieldingly occupies the position shown in full lines in Figs. 1 and 3, the engine and transmission-shaft of the car being in operative engagement.

The gear-shifting lever 4, as is also common in automobile construction, is pivotally shiftable in a slotted segment or guide 5 fixed to chassis or frame 1 and, when the machine is in halt position or standing still, occupies the central or neutral position indicated in Figs. 4 and 16. When it is desired that the machine or car run at first or low speed, lever 4 is shifted in segment or guide 5 to, say, the position indicated by the letters *f. s.*, Fig. 16, to shift the gears accordingly; to, say, the position indicated by the letters *m. s.*, Fig. 16, when it is desired that the machine run at medium speed; and to the position indicated by the letters *h. s.*, Fig. 16, when it is desired that the machine run at full or high speed, all as will be well understood. When it is desired to reverse the direction of the machine, lever 4 is shifted from neutral position to, say, the position indicated by the letter *r*, Fig. 16.

Suitably fixed on chassis or frame 1, as by means of a bracket 6, at a convenient point preferably in the rear of the machine, as clearly seen in Fig. 2, is a suitable preferably rectangular casing or housing 7 preferably having a removable side or portion 8, whereby access may be had to the interior thereof.

Fitting within casing 7, as seen particularly in Fig. 11, is a frame composed of parallel outer plates 9—9′ and an intermediate approximately half-length plate 9″, plates 9, 9′, and 9″ being fixed together in spaced-apart relation by means of bolts or the like 10 and spacing-members 11 sleeved lengthwise on bolts 10 between said plates.

Located between plates 9 and 9′ and preferably below plate 9″, and having its frame suitably fixed on the inner face of, say, plate 9, see Fig. 11, is a motor 12 of any suitable or approved design having its armature-shaft 13 extended at one end to rotatably project through plate 9, as shown. Fixed on said projecting end of armature-shaft 13 is a preferably small belt-pulley 14. At its opposite end, armature-shaft 13 is also outwardly extended and has fixed thereon a suitable brake-wheel 15.

Having its ends projecting through, and supported by, plates 9 and 9″, is a fixed tubular shaft-supporting or bearing member 16, and rotatably mounted within, but having its opposite ends projecting beyond the opposite ends of, member or sleeve 16 is a shaft 17. Located intermediate the rear wall of housing 7 and plate 9, and suitably fixed on one of the projecting ends of said rotatable shaft 17, is a preferably large belt-pulley 18 having its hub 19 integrally or otherwise provided with a tubular extension 20 rotatably projecting exteriorly of casing or housing 7, as clearly seen in Fig. 11.

Suitably fixed on the projecting end of hub-extension 20 exteriorly of housing 7 and rotatable therewith, is an indicating or signaling member 21 preferably in the form, as shown, of a hollow arrow made up from suitable sheet metallic material. Fixed on hub-extension 20 within the interior of arrow member 21 and rotatable with said hub-extension 20, is a socket or the like 22 adapted to firmly electrically support an incandescent electric bulb or the like 23. Fixed on, but insulated from, the opposite flat faces of pulley 18 are annular contact-members 24—24′, from which extend through hub-extension 20 to socket 22, as seen in Fig. 11, suitable short conducting wires 25—25′. Fixed at one end to, but insulated from, plate 9 and the rear wall of housing 7, and in electrical contact at their free ends with said contact members 24—24′, are, respectively, suitable brushes 26—26′ included with a suitable storage-battery or other source of current 27 and conducting wires 28—28′ in a suitable lighting circuit controlled by a switch or the like 29 suitably carried by the automoble conveniently to the

operator thereof. Thus, arrow or indicating member 21 having an outer wall 30 of preferably colored glass or other analogous material, it will be evident that arrow or indicator 21 may not only be visually observed in the day-time, but also in the night-time, switch 29 being operated to "on" position to include lamp 23, through its said electrical connections, in said circuit. Operatively connecting pulleys 14 and 18 is a suitable driving-belt 31.

Located intermediate plates 9'' and 9' and having a rearwardly projecting hub portion 32 fixed on the other end of shaft 17, is a preferably metallic disk 33. Fixed on the rear face of disk 33 at its perimeter is an annular section or disk of insulation material 34, and fixed on the exposed or rear face of insulation section 34 is an interrupted or gapped annular contact-member or strip 35. At their periphery, disks 33 and 34 are cut-away or notched, as at 36, there being preferably four such notches 36 equidistant apart to correspond with and regulate or control the preferably four signaling positions of the indicator-arrow 21 as hereinafter more fully appearing.

Projecting through, and arranged in the form of an annular series on the front face of, plate 9'' in operative position relatively to contact-strip 35, are short fixed tubular members 37, of which members 37 there are also preferably four in number equidistant apart, as clearly seen in Fig. 14. Slidable lengthwise in, but preferably insulated from, said members 37, are preferably cylindrical contact-members 38, 38^a, 38^b, and 38^c. Fixed at suitable points on the rear face of, and insulated from, plate 9'', are suitable binding-posts 39, 39^a, 39^b, and 39^c, and having one end fixed to, and in electrical connection with, said binding-posts, respectively, are preferably resilient conducting members 40, 40^a, 40^b, and 40^c, which at their free ends, respectively, electrically contact with, and yieldingly bear upon, said contact-members 38, 38^a, 38^b, and 38^c and thereby maintain said members 38, 38^a, 38^b, and 38^c in proper contacting and conducting position relatively to said annular contact-strip 35.

Suitably mounted preferably on the rear face of plate 9' in operative position relatively to disk 33, is an electro-magnet 41 having a preferably elongated armature 42 operatively swingably supported at one end relatively to the cores of the coils of magnet 41 by means of a stud or the like 43 fixed on plate 9'. On its upper face and adjacent its free end, armature 42 is provided with an enlargement or lug 44 adapted, the circuit hereinafter described being broken, to yieldingly, under the resiliency or pull of a spring 45, fit in said respective notches 36 and thereby engage with disk 33, rotatory movement of shaft 17 and its carried indicator-arrow 21, as will be seen, being prevented when armature 42 through its said lug 44 is in engagement with said respective notches 36 and indicator-arrow 21 being thereby locked in its corresponding indicating or signaling position.

Suitably mounted in proper position preferably on the front face of plate 9 is a second electro-magnet 46 similarly provided with a preferably elongated armature 47 operatively swingably supported at one end by means of a stud or the like 48 fixed on plate 9. At its free end armature 47 is preferably transversely provided with a contact-pin 49. Fixed at one end on the upper face of armature 47 and in electrical contact therewith through pin 49, is a preferably yielding conducting-contact member 50 having preferably the bent shape or form seen in Figs. 13 and 16. At its free end this member 50 yieldingly bears upon, and electrically contacts with, a conducting-extension 51 of a binding-post 52 mounted on plate 9. At its lower end, said pin 49, when the circuit hereinafter described is completed, is adapted to electrically contact with a contact-pin 53 carried by a conducting-extension 54 of a second binding-post 55 also mounted on plate 9. Also mounted at a suitable point preferably on the rear face of plate 9', is an electro-magnet or solenoid 56 similarly having a preferably elongated armature 57 operatively swingably supported at one end relatively to the core of magnet 56 and to said brake-wheel 15 by means of a stud or the like 58 fixed on plate 9'. On its under face, armature 57 is provided with a section of leather or other suitable preferably fibrous material 59 adapted to frictionally bear upon the periphery of brake-wheel 15 to stop rotatory movement of armature-shaft 13 on the motor-circuit hereinafter described being broken, armature 57 and its said fibrous portion 59 being normally yieldingly held in such frictional engagement with wheel 15 by means of a coiled-spring or the like 60 having one end suitably attached to the free end of armature 57 and its other end to a suitable fixed point—as, for instance, one of said spacing-members 11, as seen clearly in Fig. 11.

Suitably fixed on chassis or frame 1 as by means of a bracket 61 in operative position relatively to gear-shifting lever 4 and its slotted segment 5, is a tubular member or cylinder 62, slidably movable in which is a plunger or circuit-changing member 63. Suitably mounted on cylinder 62 at one side thereof is a suitable binding-post 64 provided interiorly of cylinder 62 with a preferably arcuate-conducting member 65 suitably insulated from the wall of cylinder 62. Also mounted on cylinder 62 preferably opposite binding-post 64 is a pair of similar binding-posts 66^a—67 likewise provided inte-

riorly of cylinder 62 with preferably arcuate-conducting members 68—69, respectively, suitably insulated from cylinder 62. Carried by plunger 63 interiorly of cylinder 62 is a conducting-member 70 adapted, when plunger 63 is in normal outer position relatively to cylinder 62, to contact with said contact-members 65 and 69 to complete therethrough the circuit hereinafter described. Also carried by plunger 63 interiorly of cylinder 62 is a second contact-member 71 adapted, when plunger 63 is in inner position relatively to cylinder 62, to contact with said contact-members 65 and 68 to complete therethrough the circuit hereinafter described. Interposed within cylinder 62 between said conducting-members 70 and 71 and the respective opposite ends of cylinder 62 are suitable insulation pieces 72 and coiled springs or the like 73 adapted normally to yieldingly hold plunger 63 in outer position with its said contact-member 70 contacting with said contact-members 65 and 69. At one end and exteriorly of cylinder 62, plunger 63 is provided with a suitable head or button 74 adapted to be engaged by said lever 4 and plunger 63 thereby depressed or moved to inner position in cylinder 62 when lever 4 is thrown or shifted in its segment 5 to high-speed or *h. s.* position. Also mounted on chassis or frame 1 and in operative position relatively to clutch-operating lever 3 is a second tubular member or cylinder 75 substantially similar in all respects to said cylinder 62, cylinder 75 being similarly provided with binding-posts 76, 77, and 78 carrying, respectively, within cylinder 75 preferably arcuate-conducting or contact-members 79, 80, and 81. Likewise, slidable within cylinder 75 is a plunger or circuit-changing member 82 provided interiorly of cylinder 75 with a contact-member 83 adapted, when plunger 82 is in outer or normal position in cylinder 75, to contact with said contact-members 79 and 81 and a second contact-member 84 adapted, when plunger 82 is in depressed or inner position relatively to cylinder 75, to contact with said contact-members 79 and 80, suitable coiled springs 85 being interposed between, and similarly insulated from, said contact-members 83 and 84 and the respective ends of cylinder 75 to yieldingly maintain plunger 82 in outer or normal position with its said contact-member 83 contacting with said arcuate-conducting members 79 and 81. Similarly carried by plunger 82 exteriorly of cylinder 75 is a head or button 86 adapted to be engaged by said lever 3 and plunger 82 thereby depressed or moved to inner position relatively to cylinder 75 when lever 3 is thrown to disengage the transmission-shaft from the engine of the automobile, as when, for instance, in changing from low to high speed or from high to low speed.

Loosely fitting on and around steering-post 2 is a preferably cylindrical housing 87 formed preferably of two approximately semi-cylindrical members 87′ and 87″ secured together by means of securing screws or the like 88. In order to prevent this housing 87 shifting on the rotatory movements of steering-post 2, the same has preferably bolted or otherwise fixed thereto a bracket 88′ fixed to the chassis or body of the automobile.

Fixed on steering-post 2 within housing 87 is a preferably insulation drum 89. Fixed on, and having a length preferably equal to half of the circumference of drum 89, is a horizontally-disposed contact-strip 90. Likewise fixed on the circumference of drum 89 is a vertically-disposed contact-strip 91 having electrical connection with contact-strip 90. Also fixed on the circumference of drum 89 are horizontally-disposed contact-strips 92 and 93 having electrical connection with, but projecting on opposite sides from, said vertically-disposed contact-strips 91, as seen clearly in Fig. 8, these strips 92 and 93 being approximately half the length of strip 90.

Suitably mounted on housing 87 are binding-posts 94, 95, 96, and 97, and carried by said binding-posts interiorly of, but suitably insulated from, housing 87, are, respectively, preferably yielding brushes 98, 99, 100, and 101 adapted, on rotatory movements of steering-post 2, to electrically engage and contact with, respectively, said contact-strips 90, 91, 92, and 93; and it may be here stated that said contact-strips 90, 91, 92, and 93 and said brushes 98, 99, 100, and 101 are so coöperatively arranged and mounted that, steering-post 2 being capable in the running of the automobile only of turning through an arc of 180°, but two of said brushes, brush 98 and one or the other of said brushes 99, 100, or 101, are in electrical contact with said strip 90 and one or the other of said strips 91, 92, or 93, as the case may be, at one and the same time throughout the rotatory movements of steering-post 2.

Suitably carried by the automobile chassis or frame 1 is a suitable battery or other source of electric current 102 having one of its sides electrically connected by means of a conducting wire 103 to a suitable binding-post 104 fixed on plate 9′ and, in turn, electrically connected by means of a wire 105 with one side of motor 12.

106 indicates a conducting wire which electrically connects the other side of motor 12 with said binding-post 55 and its said extension 54 and pin 53. Electrically connected at one end to said binding-post 52 and its extension 51, is a conducting wire 107 electrically connected at its other end to a suitable binding-post 108 mounted on plate 9′. Electrically connected at one end to said binding-post 108 and its other end to

the other side of battery 102, is a suitable conducting wire 109. Also suitably carried by the automobile chassis or frame 1 is a second battery 110. Electrically connected at one end to one side of battery 110 is a conducting wire 111 electrically connected at its other end to a suitable binding-post 112 fixed on plate 9′. Having one end electrically connected to said binding-post 112 is a conducting wire 113 electrically connected at its other end to one of the terminals of the coil windings of magnet 41. Electrically connected to the other terminal of the coil windings of magnet 41 is a conducting wire 114 electrically connected at its other end to a suitable binding-post 115 fixed on plate 9′. Forming substantially a continuation of wire 114 and extending from binding-post 115 to, and electrically connected with, one of the terminals of the coil windings of magnet 46 is a conducting wire 116, as diagrammatically seen in Fig. 16; as seen in Fig. 13, this terminal of magnet 46 is preferably directly attached electrically to a binding-post 131 fixed on plate 9 and which, in turn, is electrically connected by said wire 116 to post 115 on plate 9′. Electrically connected to the other terminal of the coil windings of magnet 46 is a conducting wire 117 electrically connected at its opposite end to said post 112; as also diagrammatically seen in Fig. 16; as seen in Fig. 13, this terminal of magnet 46 is preferably directly attached electrically to a binding-post 132 fixed on plate 9 and which, in turn, is electrically connected by said wire 117 to said binding-post 112 on plate 9′. Also electrically connected at one end to, and extending from, binding-post 115 is a conducting wire 118 electrically connected at its other end to one side or terminal of the coil winding of magnet 56. Extending from, and electrically connected to, the other terminal of the coil winding of magnet 56 is a conducting wire 119 electrically connected at its other end to a suitable binding-post 120 fixed on plate 9′.

Electrically connected at one end to binding-post 120 and at its other end to binding-post 39 and its brush 40 is a conducting wire 121. Also electrically connected at one end to, and extending from, binding-post 120 is a conducting wire 122 electrically connected at its other end to said binding-post 78 carried by said cylinder 75. Electrically connected at one end to, and extending from, binding-post 77 carried by cylinder 75 is a conducting wire 123 electrically connected at its other end to binding-post 94. Also electrically connected at one end to said binding post 94 is a conducting wire 124 electrically connected at its other end to binding-post 67 carried by cylinder 62. Electrically connected to binding-post 64 on the opposite side of cylinder 62 is a conducting wire 125 electrically connected at its opposite end to the other side of battery 110. Electrically connected at one end to said binding-post 66 of cylinder 62 is a conducting wire 126 electrically connected at its other end to binding-post 76 carried by cylinder 75.

Electrically connected at one end to binding-post 95 is a conducting wire 127 electrically connected at its other end to a suitable binding-post 128 fixed on plate 9′ and electrically connected by a conducting wire 129 with said binding-post 39^b and its said brush 40^b.

Electrically connected at one end to said binding-post 96 is a conducting wire 130 electrically connected at its other end to a suitable binding-post 133 fixed on plate 9′ and electrically connected by a suitable conducting wire 134 with said binding-post 39^c and its brush 40^c.

Electrically connected at one end with said binding-post 97 is a conducting wire 135 electrically connected at it other end to a suitable binding-post 136 having electrical connection through a conducting wire 137 with said binding-post 39^a and its said brush 40^a.

Electrically contacting with said disk-hub 32, which is in electrical connection with said strip 35 by means of a conducting member 138, is a brush 139 suitably carried by plate 9″ and electrically connected by means of a conducting wire 140 with said binding-post 115.

Thus, reference being particularly had to the diagrammatic illustration of Fig. 16, it will be seen that the motor-circuit for rotatably actuating shaft 17 and its carried parts, including disk 33 and arrow 21, directly comprises or is made up of battery 102, wire 103, binding-post 104, wire 105, motor 12, wire 106, binding-post 55 and its extension 54 and pin 53, pin 49, contact-member 50, binding-post 52 and its extension 51, wire 107, binding-post 108, and wire 109, this motor-circuit being completed when, armature 47 being attracted by the cores of the coils of magnet 46, its carried contact-pin 19 electrically contacts with fixed pin 53 and broken when pin 49 is out of electrical contact with pin 53, as in Fig. 16. It will also be seen that the several magnets 41, 46, and 56 are electrically connected in parallel, the circuit from one side of battery 110, in which circuit said magnets are included, to said gapped or interrupted contact-strip 35 carried on disk 33, being as follows, this part or portion of the so called or designated magnet-circuit being, as it might be said, fixed: from battery 110 through wire 111 to post 112, then through wire 113 and the coils of magnet 41 and wire 114 to post 115, then through wire 116 and the coils of magnet 46 and wire 117 back to binding-post 112; also from binding-post 115 through wire 118,

magnet 56, and wire 119 to binding-post 120; also from binding-post 115 through wire 140, brush 139, hub 32, and conducting-member 138 to strip 35.

The automobile illustrated is presumed to be in a standing-still or halt position, clutch-lever 4 being in normal or neutral position and plungers 63 and 82 in outer position with their respective contact-members 70 and 83 contacting, respectively, with said contact-members 65 and 69 and 79 and 81. The automobile standing-still, steering-post 2 is also in normal straight-ahead position, brushes 98 and 99 electrically engaging, respectively, with said strips 90 and 91 mounted on drum 89. Again, the automobile standing-still, arrow 21 is in "up" position, as shown, contact-member 38^b yieldingly bearing upon insulation disk 34 through the gap in strip 35, the magnet-circuit, from the other side of battery 110, being consequently broken, and armature 42 engaging through its lug 44 with disks 33 and 34 and thereby releasably locking the arrow 21 in such "up" position and armature 57 frictionally engaging with brake wheel 15 to retard or prevent rotatory movement of armature-shaft 13. It will further be seen that, under the conditions stated, the other, or, as it might be said, changeable, part of the magnet-circuit from battery 110 through the several circuit-changers to contact-member 38^b extends from battery 110 through wire 125 to post 64 and its carried contact-member 65, then through plunger-contact-member 70 to contact member 69 and its said post 67, then through wire 124 to post 94 and its carried brush 98, then through contact-strips 90 and 91 to brush 99 and its post 95, then through wire 127, post 128, wire 129, post 39^b, and brush 40^b to contact-member 38^b.

Now, the transmission-shaft and the engine of the automobile being operatively engaged, to start the automobile lever 4 is shifted in its segment 5 from neutral position to first or *f. s.* position. On such shifting of lever 4, however, the automobile now running straight ahead at first speed, the magnet-circuit is not in any way affected and consequently arrow 21 remains in its said signaling or "up" position. To increase the speed of the automobile, lever 4 is now usually shifted in its segment 5 from first speed to second speed position; this further shifting of lever 4, the automobile still running straight ahead, also does not affect the magnet-circuit as described and arrow 21 remains in its said signaling or "up" position. Should it, however, be now desired to increase the speed of the automobile to high or full speed, lever 4 is shifted in its segment 5 to high speed or *h. s.* position, whereupon plunger 63 will be depressed or moved inwardly in cylinder 62, its contact-member 70 thrown out of contact with said contact-members 65 and 69, and its said contact-member 71 thrown into contact with said contact-members 65 and 68; consequently, the automobile now running straight ahead at full speed, the circuit from the right side (reference being had to Fig. 16) of battery 110 will be immediately changed to cut out said contact-member 38^b and to bring into the circuit the contact-member 38, the magnet-circuit from the right side of battery 110 then extending from battery 110 through wire 125 to post 64 and its contact-member 65, then through contact-members 71 and 68 to post 66, then through wire 126 to post 76 and its contact-member 79, then through contact-members 83 and 81 to post 78, and then through wire 122, post 120, wire 121, and post 39 and its brush 40 to contact-member 38. Immediately thereupon, contact-member 38 electrically contacting with said strip 35, the magnet-circuit will be completed through the said fixed portion thereof back to battery 110 and the several armatures 47, 42, and 57 will be electrically or magnetically attracted by their several respective magnets to, respectively, close the motor-circuit and permit shafts 17 and 13 to rotate. On the rotation then of armature-shaft 13, shaft 17 will be rotatorily moved through its said belt-connection with shaft 13 and arrow 21 consequently rotatorily moved to "down" or full speed position. As soon, however, as the gap in contact-strip 35, on the rotation of disks 33 and 34, reaches contact-member 38, the magnet-circuit will be at once again broken, whereupon armature 47 through its yielding contact-member 50 will break the motor-circuit, armature 42 through its said lug 44 will again engage with said disks 33 and 34 to releasably lock arrow 21 in its said "down" position, and armature 57 will again frictionally engage with brake-wheel 15 to retard or prevent further rotatory movement of armature-shaft 13.

In the running of the automobile, it frequently happens that the operator of the car wishes to slacken or reduce the speed of the car, the gear-shifting lever 4 of the car remaining in its high speed position. This may be done by actuating lever 3 to disengage the engine of the car from the transmission-shaft. Clutch-operating lever 3 being so actuated to disengage the engine from the transmission-shaft, plunger 82 will be correspondingly depressed or moved inwardly in its cylinder 75, its said contact-member 83 being thrown out of contacting-engagement with said contact-members 79 and 81 and its said contact-member 84 thrown into contacting-engagement with said contact-members 79 and 80, whereupon the magnet-circuit will be at once changed, the automobile yet running straight ahead,

to cut out of the circuit said contact-member 38 and to again bring or cut into the magnet-circuit, and complete the same through, said contact-member 38^b, which is now electrically engaging with strip 35, and arrow 21 thereby caused, through its said connections with motor 12, to again assume "up" position, the changeable part of the magnet-circuit then extending from binding-post 76 and its contact-member 79 (the electrical connections between binding-post 76 and its contact-member 79 and the right side of battery 110 remains unchanged) through contact-members 84 and 80 to post 77, then through wire 123, post 94, brush 98, contact-strips 90 and 91, brush 99, post 96, wire 127, post 128, wire 129, and post 39^b and its brush 40^b, to contact-member 38^b. On clutch-operating lever 3 being again actuated to operatively engage the engine and transmission-shaft of the car and plunger 82 accordingly permitted to assume its normal position, the automobile now again running straight ahead, the changeable part of the motor-circuit will be again changed to cut out of the circuit said contacting-member 38^b and to again bring or cut into the magnet-circuit, and again complete the same through, said contact-member 38, whereupon the arrow 21 will be caused, as before described, to assume its corresponding "down" position. Should, however, the operator of the car prefer to reduce the speed thereof by shifting lever 4 in its segment 5 from high speed or *h. s.* position to one or the other of its said positions in segment 5, plunger 63 will at once, on lever 4 being so shifted, assume normal outer position in cylinder 62, whereupon contact-member 71 will be carried out of contacting-engagement with contact-members 65 and 68, contact-member 70 brought into contacting-engagement with said contact-members 65 and 69, wire 122 and contact-member 38 cut out of the magnet-circuit, and contact-member 38^b, through its said electrical connections with post 95 again brought into the magnet-circuit, the magnet-circuit being hence again completed and arrow 21 again, through its described connections with motor 12, rotatorily moved from "down" to, and then again releasably locked in, "up" position.

Now, presume the operator of the car is about to turn to the right. In the usual proper or safe running of the car, the operator first slackens the speed of the car as before described, either by disconnecting the engine from the transmission-shaft, lever 4 remaining in high speed position, or by shifting lever 4 out of high speed position, arrow 21 being consequently, on the slackening of the speed of the automobile, caused to assume "up" position as also before described. Immediately then on steering-post 2 being rotatorily moved to turn the car to the right, brush 99 will be carried out of electrical contact with strip 91 and brush 100 brought into electrical contact with strip 92, whereupon contact-member 38^b and its said electrical connections will be cut out of the magnet-circuit and contact-member 38^c, which is in electrical contact with strip 35, cut into the magnet-circuit, the magnet-circuit from the right hand side (reference being had to Fig. 16,) of battery 110 being then completed, beginning with post 94, from post 94 through brush 98 and contact-strips 90 and 92 to brush 100 and its post 96, and then from post 96 through wire 130, post 133, wire 134, post 39^c, brush 40^c, and contact-member 38^c to contact-strip 35. The magnet-circuit being so completed, and the motor-circuit being consequently also at once completed through contact-pins 49 and 53, arrow 21 will, through its said connections with motor 12, be rotatorily moved to assume its corresponding signaling position as shown in Fig. 2^c and then, as before described, releasably locked in such position. Immediately upon steering-post 2 being rotatorily moved to again direct the automobile in a straight-ahead direction, contact-strip 92 and its brush 100 together contact-member 38^c and the said electrical connections therebetween will be cut out of the magnet-circuit and the magnet-circuit again completed through brushes 98 and 99 and strips 90 and 91 to contact-member 38^b and arrow 21 consequently again caused to rotatorily move to assume its "up" position as before described.

Now, again, presume the operator of the car is about to turn to the left. The operator of the car, again, first slackens the speed of the car as before described, either by disconnecting the engine from the transmission-shaft, lever 4 remaining in high speed position, or by shifting lever 4 out of high speed position, arrow 21 being consequently, on the slackening of the speed of the automobile, caused to rotatorily move to assume "up" position as also before described. Immediately then on steering-post 2 being rotatorily moved to turn the car to the left, brush 99 will be carried out of electrical contact with strip 91 and brush 101 brought into electrical contact with strip 93, whereupon contact-member 38^b and its said electrical connections will be cut out of the magnet-circuit and contact-member 38^a, which is in electrical contact with strip 35, cut into the magnet-circuit, the magnet-circuit from the right hand side (reference being had to Fig. 16) of battery 110 being then completed, beginning with post 94, from post 94 through brush 98 and contact-strips 90 and 93 to brush 101 and its post 97, and then through wire 135, post 136, wire 137, post 39^a, brush 40^a, and contact-member 38^a to contact-strip 35. The magnet-circuit being

so completed, and the motor-circuit being consequently also at once completed as before described, arrow 21 will, through its said connections with motor 12, be rotatorily moved to assume its signaling position as shown in Fig. 2[b] and then, as before described, releasably locked in such position. Immediately upon steering-post 2 being rotatorily moved to direct the automobile in a straight-ahead direction, contact-strip 93 and its brush 101 together with contact-member 38[a] and the said electrical connections therebetween will be cut out of the magnet-circuit and the magnet-circuit again completed through brushes 98 and 99 and strips 90 and 91 to contact-member 38[b] and arrow 21 again caused to rotatorily move to assume its "up" position as before described.

My new signaling-attachment is adapted, as will be evident from the foregoing, to promptly signal all the possible running or standing-still conditions of the automobile, and, while I have herein shown and described arrow or signal-attaching member 21 as being located at the rear of the automobile, it is to be understood that the same might be equally well located at other places on the automobile, should it be so desired, as, for instance, on the front of the car to correspondingly indicate or signal to traffic officers, and that changes in the form, construction, arrangement, and combination of the several parts of my new signaling-attachment or means may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a signaling device for automobiles and the like, a casing, a rotatable shaft journaled in said casing, said shaft having a portion projecting exteriorly of the casing, a signaling-member fixed on the projecting portion of the shaft exteriorly of the casing, a first normally open electric-circuit including a motor arranged within the casing, the armature-shaft of said motor having driving connection within the casing with said shaft, a second normally open electric-circuit including a magnet-coil and its armature also arranged within the casing, the armature of said coil being adapted to electrically close said first circuit on the closing of said second circuit, a disk fixed on said shaft within the casing and bearing upon its face an interrupted annular contact-strip, said strip being included in said second circuit, a plurality of stationary contact-members within the casing adapted each to electrically contact with said strip, and means including a movable part exterior of the casing adapted to include one or the other of said stationary contact-members in said second circuit to close the same, the signaling position of said signaling-member being changed as said second-circuit is closed through one or the other of said stationary contact-members; substantially as described.

2. In a signaling device for automobiles and the like, a casing, a rotatable shaft journaled in said casing, said shaft having a portion projecting exteriorly of the casing, a signaling-member fixed on the projecting portion of the shaft exteriorly of the casing, a first normally open electric-circuit including a motor arranged within the casing, the armature-shaft of said motor having driving connection within the casing with said shaft, a second normally open electric-circuit including a magnet-coil and its armature also arranged within the casing, the armature of said coil being adapted to electrically close said first circuit on the closing of said second circuit, a disk fixed on said shaft within the casing and bearing upon its face an interrupted contact-member, said contact-member being included in said second-circuit, a plurality of stationary contact-members within the casing adapted each to electrically contact with said interrupted contact-member, and means including an actuating-member exterior of the casing adapted to include one or the other of said stationary contact-members in said second-circuit to close the same, the signaling position of said signaling-member being changed as said second-circuit is closed through one or the other of said stationary contact-members, said circuit-closing means including also a movable member having operative connection with said actuating-member, a first contact-strip carried by said movable member, a first fixed brush included in said second-circuit and electrically engaging with said first contact-strip, a plurality of second contact-strips also carried by said movable member and having electrical connection with said first strip, and a plurality of second fixed brushes each having electrical connection with respective stationary contact-members and being adapted to electrically coöperate with said second contact-strips, respectively, one or the other of said second contact-strips being adapted to electrically engage with its respective fixed brush as said movable member is actuated; substantially as described.

3. In a signaling device for automobiles and the like, a casing, a rotatable shaft journaled in said casing, said shaft having a portion projecting exteriorly of the casing, a signaling-member fixed on the projecting portion of the shaft exteriorly of the casing, a first normally open electric-circuit including a motor arranged within the casing, the armature-shaft of said motor having driving connection within the casing with said shaft, a second normally open electric-circuit in-

cluding a magnet-coil and its armature also arranged within the casing, the armature of said coil being adapted to electrically close said first circuit on the closing of said second circuit, a disk fixed on said shaft within the casing and bearing upon its face an interrupted annular contact-strip, said strip being included in said second circuit, a plurality of stationary contact-members within the casing adapted each to electrically contact with said strip, and means including an actuating contact-member exterior of the casing adapted to include one or the [illegible] of said stationary contact-members in said second-circuit to close the same, the signaling-position of said signaling-member being changed as said second-circuit is closed through one or the other of said stationary contact-members, said circuit-closing means including also a first contact-member included in said second-circuit, a second contact-member having electrical connection with one of said stationary contact members, and a third contact member having electrical connection with another of said stationary contact-members, said actuating contact-member being adapted to electrically engage with either said first and second contact-members or said first and third contact-members; substantially as described.

4. In a device of the kind described, the combination with a rotatably movable signaling-member, of means including an electric motor and its electric circuit adapted to rotatably move said member, said motor-circuit being normally open, a normally open magnet-circuit, said motor-circuit being electrically closed on the closing of said magnet-circuit, an interrupted contact-member included in said magnet-circuit and rotatably movable with said signaling-member, a plurality of stationary contact-members adapted each to electrically contact with said interrupted contact-member, and means adapted to include one or the other of said stationary contact-members in said magnet-circuit to close the same, the signaling position of said signaling-member being changed as said magnet-circuit is closed through one or the other of said second contact-members, said circuit-closing means including a first contact-member included in said magnet-circuit, a second contact-member having electrical connection with one of said stationary contact-members, a third contact-member, a fourth contact-member having electrical connection with said third contact-member, a fifth contact-member having electrical connection with said second contact-member, a sixth contact-member having electrical connection with another of said stationary contact-members, a first movable contact-member adapted to electrically engage with either said first and second contact-members or said first and third contact-members, and a second movable contact-member adapted to electrically engage with either said fourth and fifth contact-members or said fourth and sixth contact-members; substantially as described.

5. In a device of the kind described, the combination with a rotatably movable signaling-member, of means including an electric motor and its electric circuit adapted to rotatably move said member, said motor-circuit being normally open, a normally open magnet-circuit, said motor-circuit being electrically closed on the closing of said magnet-circuit, an interrupted contact-member included in said magnet-circuit and rotatably movable with said signaling-member, a plurality of stationary contact-members adapted each to electrically contact with said interrupted contact-member, and means adapted to include one or the other of said stationary contact-members in said magnet-circuit to close the same, the signaling position of said signaling-member being changed as said magnet-circuit is closed through one or the other of said second contact-members, said circuit-closing means including a movable member, a first contact-strip carried by said movable member, a first fixed brush, electrically engaging with said first contact-strip, a plurality of second contact-strips also carried by said movable member and having electrical connection with said first strip, a plurality of second fixed brushes each having electrical connection with respective stationary contact-members and being adapted to electrically coöperate with said second contact-strips, respectively, one or the other of said second contact-strips being adapted to electrically engage with its respective fixed brush as said movable member is actuated, a first-contact member included in said magnet-circuit, a second contact-member having electrical connection with said first fixed brush, a third contact-member having electrical connection with another of said stationary contact-members, and a movable contact-member adapted to electrically engage with either said first and second contact-members or said first and third contact-members; substantially as described.

6. In a device of the kind described, the combination with a rotatably movable signaling-member, of means including an electric motor and its electric circuit adapted to rotatably move said member, said motor-circuit being normally open, a normally open magnet-circuit, said motor-circuit, being electrically closed on the the closing of said magnet-circuit, an interrupted contact-member included in said magnet-circuit and rotatably movable with said signaling-member, a plurality of stationary contact-[illegible]mber adapted each to electrically contact

with said interrupted contact-member, and means adapted to include one or the other of said stationary contact-members in said magnet-circuit to close the same, the signaling position of said signaling-member being changed as said magnet-circuit is closed through one or the other of said second contact-members; said circuit-closing means including a movable member, a first contact-strip carried by said movable member, a first fixed brush electrically engaging with said first contact-strip, a plurality of second contact-strips also carried by said movable member and having electrical connection with said first strip, a plurality of second fixed brushes each having electrical connection with respective stationary contact-members and being adapted to electrically coöperate with said second contact-strips, respectively, one or the other of said second contact-strips being adapted to electrically engage with its respective fixed brush as said movable member is actuated, a first contact-member included in said magnet-circuit, a second contact-member having electrical connection with said first fixed brush, a third contact-member, a fourth contact-member having electrical connection with said third contact-member, a fifth contact-member having electrical connection with another of said stationary contact-members, a sixth contact-member having electrical connection with said first fixed brush, a first movable contact-member adapted to electrically engage with either said first and second contact-members or said first and third contact-members, and a second movable contact-member adapted to electrically engage with either said fourth and fifth contact-members or said fourth and sixth contact-members; substantially as described.

7. In a device of the kind described, the combination with a rotatably movable shaft, of a signaling-member mounted on, and rotatably movable with said shaft, a notched disk fixed on said shaft, means including an electric motor and its electric circuit adapted to rotatably move said shaft and its carried signaling-member and disk, said motor-circuit being normally open, a normally open magnet-circuit, said motor-circuit being electrically closed on the closing of said magnet-circuit, a magnet and its armature included in said magnet-circuit, said armature being adapted normally to yieldingly engage with said notched disk to releasably lock said shaft and its signaling-member against rotatory movement, and means for closing said magnet-circuit, said armature being disengaged from said notched disk on the closing of said magnet-circuit; substantially as described.

8. In a device of the kind described, the combination with a rotatably movable shaft, of a signaling-member mounted on, and rotatably movable with said shaft, a notched disk fixed on said shaft, means including an electric motor and its electric circuit adapted to rotatably move said shaft and its carried signaling-member and disk, said motor-circuit being normally open, a second normally open electric circuit including an electro-magnet and its armature, said armature being adapted, on the closing of said second circuit, to electrically close said motor-circuit, a second magnet and its armature included in said second circuit, said second armature being adapted normally to engage with said notched disk to releasably lock said shaft and its signaling-member against rotatory movement, and means for closing said second circuit, said second armature being disengaged from said notched disk on the closing of said second circuit; substantially as described.

9. In a device of the kind described, the combination with a rotatably movable signaling-member, of means including an electric motor and its electric circuit adapted to rotatably move said member, said motor-circuit being normally open, a normally open magnet-circuit, said motor-circuit being electrically closed on the closing of said magnet-circuit, a magnet and its armature included in said magnet-circuit, said armature being adapted normally to engage with the armature-shaft of said motor to prevent rotatory movement thereof, and means for closing said magnet-circuit, said armature being disengaged from said armature-shaft on the closing of said magnet-circuit; substantially as described.

10. In a device of the kind described, the combination with a rotatably movable signaling-member, of means including an electric motor and its electric circuit adapted to rotatably move said member, said motor-circuit being normally open, a brake-wheel on the armature-shaft of said motor, a normally open magnet-circuit, said motor-circuit being electrically closed on the closing of said magnet-circuit, a magnet and its armature included in said magnet-circuit, said armature being adapted normally to engage with said brake-wheel to prevent rotatory movement of said armature-shaft, and means for closing said magnet-circuit, said armature being disengaged from said brake-wheel on the closing of said magnet-circuit; substantially as described.

11. In a device of the kind described, the combination with a rotatably movable signaling-member, of means including an electric motor and its electric circuit adapted to rotatably move said member, said motor-circuit being normally open, a brake-wheel on the armature shaft of said motor, a second normally open electric circuit including an electro-magnet and its armature, said arma-

ture being adapted, on the closing of said second circuit, to electrically close said motor-circuit, a second magnet and its armature included in said magnet-circuit, said second armature being adapted normally to frictionally engage with said brake-wheel to prevent rotatory movement of said armature-shaft, and means for closing said second circuit, said second armature being disengaged from said brake-wheel on the closing of said second circuit; substantially as described.

12. In a device of the kind described, the combination with a rotatably movable shaft, of a signaling-member mounted on, and rotatably movable with, said shaft, a notched disk fixed on said shaft, means including an electric motor and its electric circuit adapted to rotatably move said shaft and its carried signaling-member and disk, said motor-circuit being normally open, a brake-wheel on the armature-shaft of said motor, a second normally open electric circuit including an electro-magnet and its armature, said armature being adapted on the closing of said second circuit, to electrically close said motor-circuit, a second magnet and its armature included in said second circuit, said second armature being adapted normally to engage with said disk to releasably lock said shaft and its carried signaling-member against rotatory movement, a third magnet and its armature included in said second circuit, said third armature being adapted normally to frictionally engage with said brake-wheel to prevent rotatory movement of said armature-shaft, and means for closing said second circuit, said second and third armatures being disengaged from said disk and brake-wheel, respectively, on the closing of said second circuit; substantially as described.

13. In a device of the kind described, the combination with a self-propelled vehicle, including its steering-post and one of its operating levers, a rotatable movable signaling-member on said vehicle, means including an electric motor and its electric circuit adapted to rotatably move said member, said motor-circuit being normally open, a normally open magnet-circuit, said motor-circuit being electrically closed on the closing of said magnet-circuit, an interrupted contact-member included in said magnet-circuit and rotatably movable with said signaling-member, a plurality of stationary contact-members adapted each to electrically contact with said interrupted contact-member, and means including said steering-post and lever adapted automatically as said steering-post is rotatably moved or said lever actuated to include one or the other of said stationary contact-members in said magnet-circuit to close the same, the signaling position of said signaling-member being changed as said magnet-circuit is closed through one or the other of said stationary contact-members; substantially as described.

14. In a device of the kind described, the combination with a self-propelled vehicle, including its steering-post and two of its operating levers, a rotatably movable signaling-member on said vehicle, means including an electric motor and its electric circuit adapted to rotatably move said member, said motor-circuit being normally open, a normally open magnet-circuit, said motor-circuit being electrically closed on the closing of said magnet-circuit, an interrupted contact-member included in said magnet-circuit and rotatably movable with said signaling-member, a plurality of stationary contact-members adapted each to electrically contact with said interrupted contact-member, and means including said steering-post and levers, adapted automatically as said steering-post is rotatably moved or said levers actuated to include one or the other of said stationary contact-members in said magnet-circuit to close the same, the signaling position of said signaling-member being changed as said magnet-circuit is closed through one or the other of said stationary contact-members; substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

CHARLES WENDE.

Witnesses:
RUTH PETERSON,
LELIA HAUK.