July 27, 1954 B. PUTTERMAN 2,684,601

AUTOMOBILE DIRECTIONAL SIGNAL

Filed Feb. 26, 1953

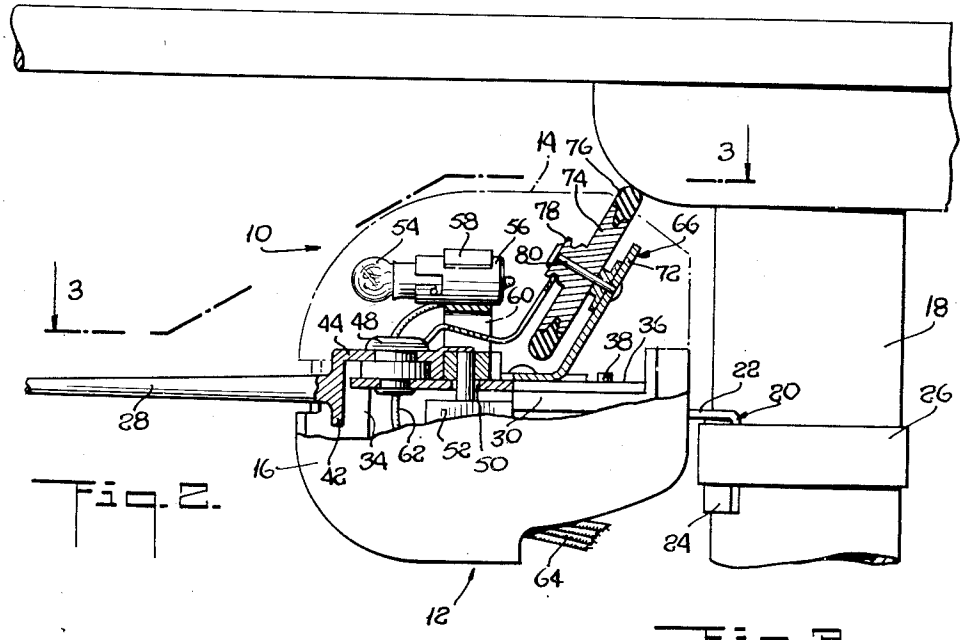


Fig. 2.

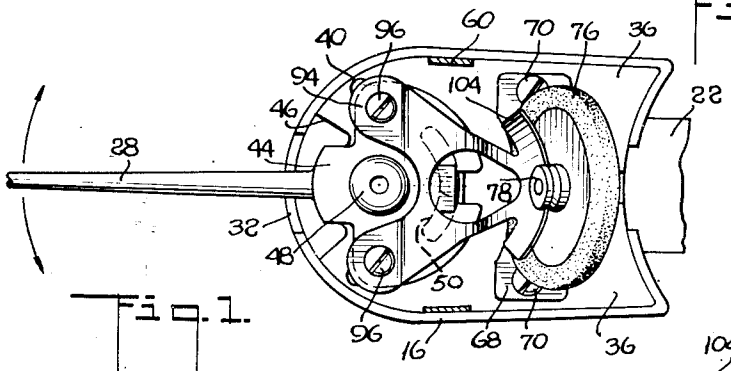


Fig. 3.

Fig. 1.

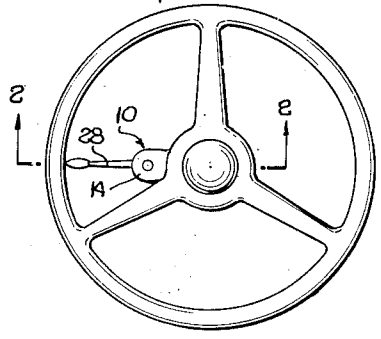
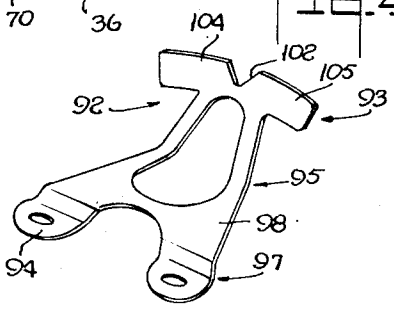


Fig. 4.



INVENTOR.
BENJAMIN PUTTERMAN
BY William F. Gluck
ATTORNEY

Patented July 27, 1954

2,684,601

UNITED STATES PATENT OFFICE

2,684,601

AUTOMOBILE DIRECTIONAL SIGNAL

Benjamin Putterman, Norwalk, Conn., assignor to Yankee Metal Products Corp., Norwalk, Conn., a corporation of New York

Application February 26, 1953, Serial No. 339,147

12 Claims. (Cl. 74—484)

1

This invention relates to self-cancelling automobile directional signal controls, and more particularly to that type of directional signal control which is designed to be affixed by the consumer to a car after delivery from the manufacturer.

It is an object of the present invention to provide a novel and improved self-cancelling mechanism for a directional signal control of the character described.

Another object of the present invention is to provide a mechanism of the character described which is simple and inexpensive to manufacture.

Another object of the present invention is to provide a mechanism of the character described which is smooth and foolproof in its operation.

Other objects of the invention will in part be obvious and in part will be pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the device hereinafter described and of which the scope of application will be indicated in the appended claims.

In the accompanying drawings in which is shown one of the various possible embodiments of the invention:

Fig. 1 is a top view of a steering wheel to the steering column of which there is attached a directional signal control embodying the present invention;

Fig. 2 is an enlarged sectional view taken substantially along the line 2—2 of Fig. 1;

Fig. 3 is a sectional view taken substantially along the line 3—3 of Fig. 2; and

Fig. 4 is a perspective view of an element of the self-cancelling mechanism.

Referring now in detail to the drawings, the reference numeral 10 denotes a directional signal control constructed in accordance with the present invention. Said control includes a casing 12 having an upper half 14 and a lower half 16. The casing is attached to the steering column 18 by an L-shaped bracket 20 which includes a lateral arm 22 adjustably secured to the lower casing half in a manner hereinafter described in detail. The bracket also includes a downwardly extending leg 24 detachably secured to the steering column by a flexible clinch band 26.

The end of the casing remote from the steering column will be referred to as the front of the control; the other end will be referred to as

2

the rear. An actuating arm 28 projects from the front of the casing, said arm having a central inoperative (neutral) position and two operative positions, to wit, upper and lower positions, corresponding to signals indicating a right and a left turn (Fig. 3).

The base of the lower casing half is elevated near its rear to provide a pair of platforms 30 a short distance below the top of said half. A notch 32 at the front end of the top edge of the lower casing half accommodates the arm 28 in its various positions. Internal shoulders 34 integral with the casing near the front and on each side thereof are level with the platforms 30 and have tapped bores therein. Each platform has a clear hole therethrough.

A switch mounting plate 36 is seated on the shoulders and platforms. Said plate has openings registered with the holes and bores in the platforms and shoulders respectively. The openings in registry with the holes in the platforms are threaded to receive bolts 38 from beneath. The openings in the registry with the bores in the shoulders are clear to pass bolts 40 screwed into said bores.

The bracket arm 22 is held between the heads of the bolts 38 and the elevated undersurface of the lower casing half, said arm having slots therein to pass the shanks of the bolts 38 so that the distance between the control and the steering column may be adjusted. The actuating arm is integral at its rear end with and perpendicular to a flange 42 projecting downwardly from the front edge of a pivot plate 44. Said flange swings in a recess 46 provided in the front edge of the switch mounting plate.

The pivot plate is rotatably secured near its front to a pivot pin 48 carried by the switch plate and a transverse slot 50 is formed near the front of the switch mounting plate, a conventional electric switch 52 being disposed below the slot on the undersurface of the switch plate.

The electric switch is actuated from the pivot plate by a structure which is conventional and well known in the art.

A pilot light 54 fits in a socket 56 held by a clamp 58 which is disposed on top of a resilient bridge 60 detachably attached to the switch mounting plate. Said light is connected by a wire 62 to the switch for energization when the switch is actuated and the proper signal is in operation. In the embodiment shown, the wire 62 passes through the hollow center of the pivot pin 48. The wires 64 from the electric switch

to the main circuit pass through a suitable opening in the lower casing half.

Pursuant to the instant invention, novel and improved means is provided for automatically holding the switch 52 in operative position after it has been so disposed by movement of the arm 28 and for automatically cancelling said switch, i. e. returning the same to neutral position, when the wheels of the automobile are turned in a direction opposite to that for which the signal is indicating a turn. Said means comprises an upright support 66 having feet 68 secured, as by bolts 70, to the switch mounting plate near the rear of said plate. The support includes an upwardly and rearwardly slanting reach 72 on which a wheel 74 is rotatably journalled on the spindle 80. The wheel is provided with an elastic tire 76.

The sliding journal is effected by mounting the hub 78 of the friction wheel on the spindle 80 so that the hub 78 will turn when the friction wheel 74 is turned. The tire 76 of the wheel 74 is in frictional contact with the hub H of the steering wheel so that a turn of the steering wheel will drive and turn the friction wheel 74 and the hub 78.

The resilient cantilevered interrupted gear member 92 is provided to control the cancelling mechanism. The gear member 92 comprises a head part 93, a body part 95, a resilient portion 98, and the base part 97. The head part 93 consists of the interruption 102 flanked by the operative gear portions 104 and 105. The head is curved around a radius of the pivot 48. The base part has two legs 94 which are adapted to be secured to the pivot plate by screws 96 so that the body and head of the gear member 92 and the actuating arm 28 are on opposite sides of the pivot 48 and so that the gear member 92 is adapted to turn around the pivot 48. The body part 95 consists of two upright legs 100 which are parallel to the friction wheel 74. The base part 97 and the body part 95 are substantially parallel to each other.

The resilient portion 98 is interposed between the body part 95 and the base part 97 and is substantially at right angles thereto. The body part 95 and the base part 97 extend in opposite directions from each end of the resilient portion 98 at right angles thereto. The resilient portion is biased upwardly toward the hub 78 of the friction wheel 74 so as to provide an endwise engagement between a groove in the hub 78 and the top operative portion of the head part 93 of the gear member 92.

The upper housing is retained to the lower housing in any conventional manner as by screws passing through the former and fitting into tapped openings in the bridge 60.

The device operates as follows: The position of the bracket 20 is so adjusted by the screws 38 with relation to the rear of the casing that the tire will be in frictional contact with the hub of the steering wheel.

The hub 78 of the friction wheel 74 normally lies in the interruption 102 of the head part 93 so that any slight turn of the steering wheel will turn the friction wheel 74 and the hub 78 but will not affect the head part 93 of the gear member 92. However, when a right turn is to be made, the arm 28 is turned upwardly. This moves the interruption 102 out from under the groove of the hub 78. The upper operative portion 104 abuts the groove of the hub 78 and the hub 78 being stationary and the operative portion 104 being at a level higher than the interruption 102, the resilient portion 98 of the gear member 92 will be flexed or depressed downwardly and carry the body part 95 with it. This allows the operative portion 104 to be in frictional contact with the hub 78 and the electric circuit to be closed thus operating the signals. The steering wheel is now turned to make a right turn and this turns the friction wheel 74 counterclockwise and assures that the operative portion 104 of the gear member 92 will be held under the hub 78. When the steering wheel is turned back to straighten the automobile, the friction wheel 74 will be turned clockwise and this will turn the operative portion 104 downwardly in a clockwise direction and will place the interruption 102 under the hub 78 and will break the electric circuit, thereby stopping the signals. The upwardly biased resilient portion 98 will be free to spring upwardly and assume normal position. When a left turn is to be made, the arm 28 is pressed down and the hub 78 rides on the lower operative portion 105. The parts thereafter operate as shown above.

I claim:

1. In a self-cancelling automobile directional signal control adapted to be disposed on the steering gear of an automobile and including an actuating arm having an inoperative and an operative position, a spindle, a friction wheel mounted on said spindle, said friction wheel being in frictional contact with the steering wheel to be driven thereby, a hub mounted on said spindle and movable with the friction wheel, an interrupted gear member secured on said actuating arm, said interrupted gear member being comprised of a resilient portion to bias said gear member toward the hub of the friction wheel to provide an endwise engagement between the hub of the friction wheel and the gear member, the interruption in the gear member normally accommodating the hub of the friction wheel, said gear member being movable by said actuating arm from normal position to operative position, the operative portion of the gear member being in abutment with the hub when the gear member is in operative position, said gear member being flexed downwardly when in operative position, said operative portion of the gear member being driven by said hub when in operative position and being movable by said hub from operative to inoperative position.

2. A device as set forth in claim 1, wherein the bias action of the gear member is in a plane parallel to the friction wheel.

3. A device as set forth in claim 2, wherein said gear member has a head part having an interruption therein said interruption being flanked by two uninterrupted operative surfaces.

4. A device as set forth in claim 3, wherein said head part is carried by a body part, said body being parallel to the friction wheel.

5. In a self-concelling automobile directional signal control adapted to be disposed on the steering gear of an automobile and including an actuating arm having an inoperative and an operative position, a spindle, a friction wheel mounted on said spindle, said friction wheel being in frictional contact with the steering wheel to be driven thereby, a hub mounted on said spindle and movable with the friction wheel, a gear member secured on said actuating arm, said gear member being comprised of a head part, a body part to carry said head part, a base part to carry

said body part, and a resilient portion to bias said head part toward the hub of said friction wheel to provide an endwise engagement between the hub and the head part, said head part being comprised of an interruption and two uninterrupted operative surfaces flanking said interruption, the interruption in the head part normally accommodating the hub of the friction wheel, said gear member being movable by said actuating arm from normal position to operative position, the operative surface of the head part being in abutment with the hub when the gear member is in operative position, said gear member being flexed downwardly when in operative position, said operative surface of the head part being driven by said hub when in operative position and being movable by said hub from operative to normal position.

6. A device as set forth in claim 5, wherein said resilient portion is interposed between the body part and the base part of the gear member.

7. A device as set forth in claim 6, wherein said body part and said base part are integral with said resilient portion and extend in opposite directions therefrom.

8. A device as set forth in claim 7, wherein said resilient portion is substantially perpendicular to said body part and said base part.

9. A device as set forth in claim 8, wherein said body part and said base part are parallel to each other.

10. A device as set forth in claim 9, wherein said body comprises two legs tapered outwardly toward the base part and defining a space therebetween.

11. A device as set forth in claim 10, wherein said base comprises two legs.

12. A device as set forth in claim 11, wherein said actuating arm and said gear member are on a common pivot and wherein said head part is uniformly curved along a radius of said pivot.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,596,440	Sampson	May 13, 1952
2,604,560	Dibelka	July 22, 1952