April 7, 1942. J. NICHOLSON 2,279,011

SWITCH OPERATING MECHANISM

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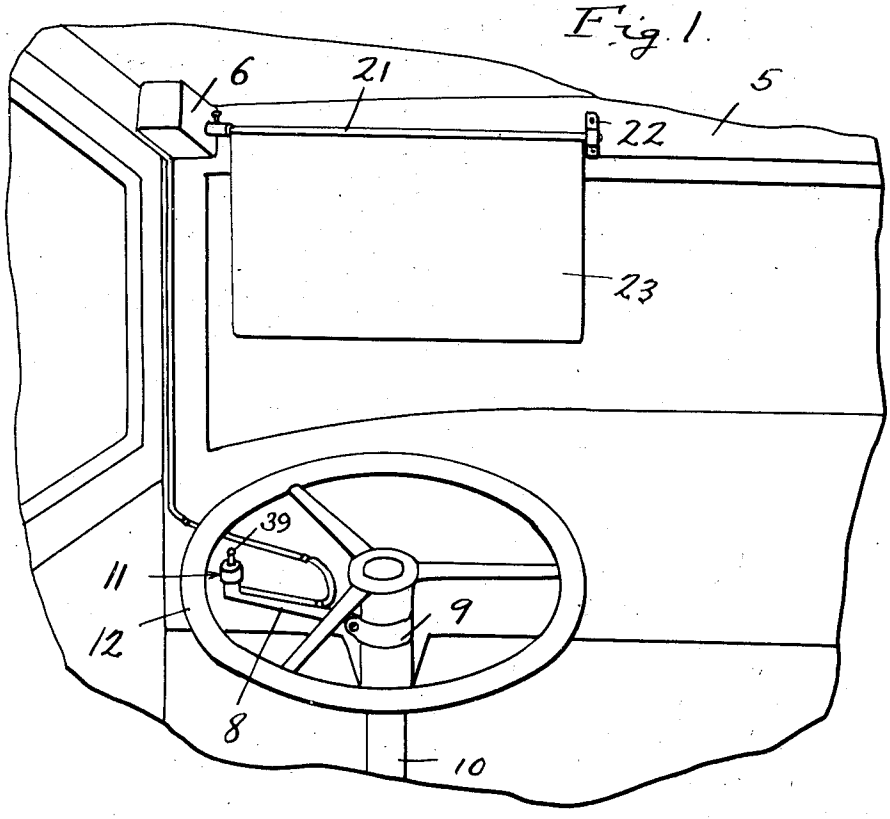
Fig. 1.



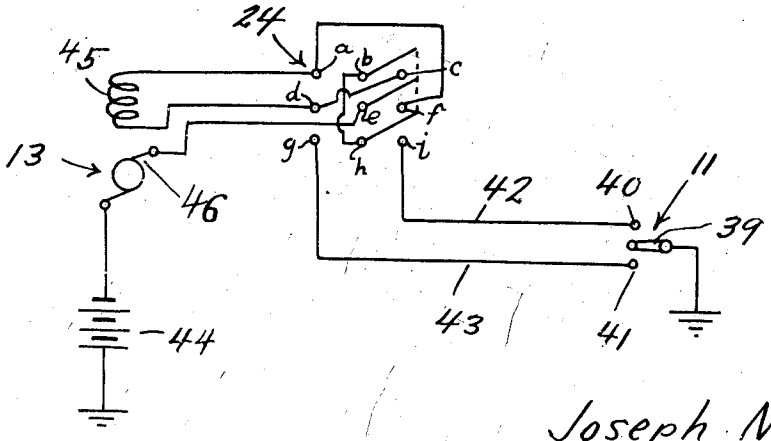


Fig. 5.

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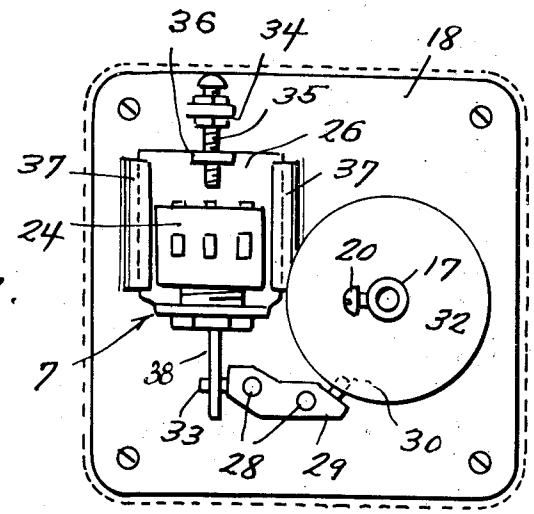

Fig. 2.

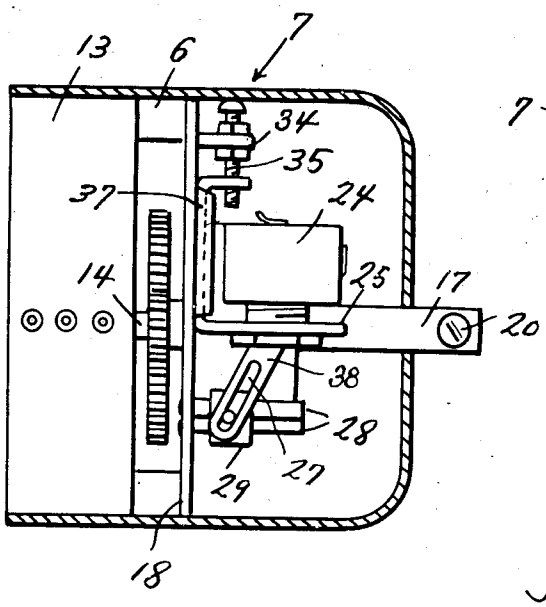

Fig. 3.

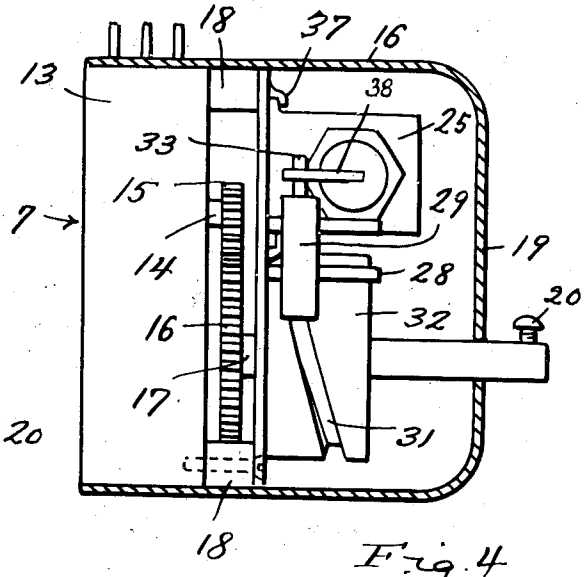

Fig. 4

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SWITCH OPERATING MECHANISM

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Application July 7, 1938, Serial No. 218,011

2 Claims. (Cl. 200—17)

This invention appertains to new and useful improvements in anti-glare shields especially adapted for motorists.

The principal object of the present invention is to provide a shield of the character stated which is electrically operated and conveniently controlled by a push button located in close proximity to the driver's hands, as for instance on the usual steering column.

Another important object of the invention is to provide control means for anti-glare shields which can be electrically elevated or lowered without any manual effort on the part of the motorist.

These and other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:

Figure 1 represents a fragmentary perspective view showing the anti-glare shield and control means.

Figure 2 is a front elevational view of the control mechanism.

Figure 3 is a vertical sectional view through the control mechanism.

Figure 4 is a horizontal sectional view through the control mechanism.

Figure 5 is a diagrammatic view disclosing the electrical connection between the electrical devices involved.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 represents the usual windshield frame to which is secured the box 6 which controls the operating mechanism generally referred to by numeral 7 (see Figures 2, 3 and 4).

An arm 8 is suitably secured as at 9 to the steering column 10 and has the switch 11 mounted on the outer end thereof adjacent the annulus of the steering wheel 12 in immediate reach of the driver's hands.

Referring to the operating mechanism, it can be seen that the box 6 contains the electric motor 13 from which extends the shaft 14 carrying the pinion 15, which pinion meshes with the gear 16 on the shaft 17. The shaft 17 extends through the partition 18 which is spaced from the motor 13 by spacers 18 and also extends through the end wall 19 of the shell 6. This shaft has its free end hollow and is equipped with a set screw 20 so that the rod 21 is received and retained. The free end of the rod 21 is journaled in the bearing 22 secured to the frame 5. The rod 21 has the anti-glare shield 23 secured thereto.

Numeral 24 represents a reversing switch unit mounted on the outstanding flange 25 of the plate 26 and is of the triple-pole, double-throw type. This switch 24 has the contactor arm 38 extending downwardly therefrom and this arm is slotted as at 27.

A pair of pins 28 extend laterally from the partition plate 18 and through openings in the block 29, the block being slidable on the pins 28. One end of the block 29 has a pintle 30 for engagement into the spiral groove 31 of the rotor 32, which is suitably secured as by keying to the shaft 17. The other end of the block 29 has the pintle 33 disposed into the slot 27 of the switch arm 38.

The partition 18 has a lug 34 extending laterally therefrom and through which is disposed the screw 35. The screw 35 is swivelly disposed through the lug 34 but threadedly engaged into the lug 36 which projects laterally from the switch carrying plate 26. By adjusting the screw 35, the time limit for the throw of the switch unit 24 can be regulated.

Flanges 37—37 are provided on the partition 18 to form a guideway for the switch carrying plate 26.

The switch 11 consists of the contactor 39 and the contacts 40 and 41. Wires 42 and 43 extend from the contacts 40 and 41 to the reversing switch 24 and from the reversing switch wires extend to the field coil 45 and one brush 46 of the motor generally referred to by numeral 13. Numeral 44 represents a source of current to the electric motor.

Thus it can be seen that when the switch 11 is operated manually, the contactor arm 39 contacts either the contact 40 or the contact 41 assuming the contacts *b*, *c*, *e*, *f*, *h* and *i*, are in closed circuit position, the circuit will be closed with the motor 13. Thus the motor is energized. The switch 24 is adjustable by the screw 35 to throw when the glare screen reaches a desired position. When the switch 24 throws, contacts *a*, *b*, *d*, *e*, *g* and *h* assume circuit closed position, thus resulting in the open circuit disposition of the contacts *b*, *c*, *e*, *f*, *h* and *i*. This breaks the circuit to the motor 13 from the switch 11, thus stopping the motor 13 and setting the circuit so that the motor will reverse when it is again energized by moving the contactor arm 39 of the switch 11 to the contact 41. Thus when the motor is energized again, the glare screen is moved back to the original position. In this operation the switch 24 is again thrown so that

it will be ready to begin the same cycle of operation again.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

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

1. An electric motor reversing mechanism comprising a spirally grooved rotor, switch operating means riding the groove of the rotor, said means comprising a slidably mounted block having a pin projecting therefrom and disposed in the groove of the rotor, a switch operating arm formed with a slot and a pin projecting from the block into the slot, a panel on which the rotor is mounted, a switch mounted on the panel and having the switch operator contactor arm associated therewith, and guide means projecting from the panel and having the said block mounted thereon.

2. An electric motor reversing mechanism comprising a spirally grooved rotor, switch operating means riding the groove of the rotor, said means comprising a slidably mounted block having a pin projecting therefrom and disposed in the groove of the rotor, a switch operating arm formed with a slot and a pin projecting from the block into the slot, a panel on which the rotor is mounted, a switch mounted on the panel and having the switch operator contactor arm associated therewith, and guide means projecting from the panel and having the said block mounted thereon, said block and guide means being interposed between the switch and the rotor.

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