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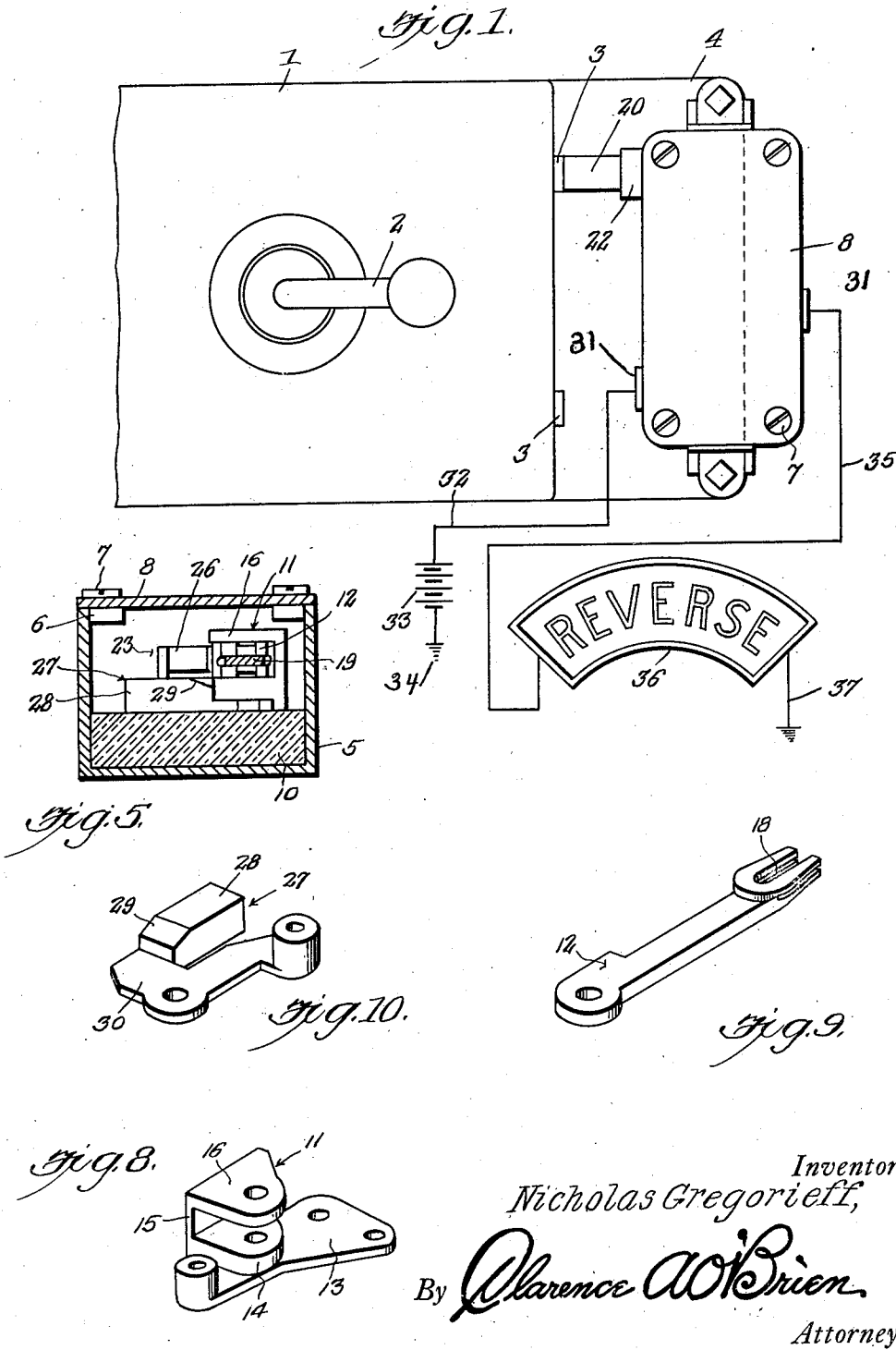
N. GREGORIEFF

1,757,014

CONTROL SWITCH FOR DIRECTION SIGNALS

Filed Nov. 15, 1926

2 Sheets-Sheet 1



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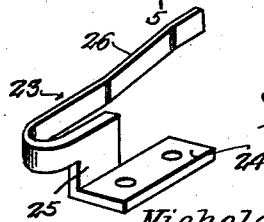
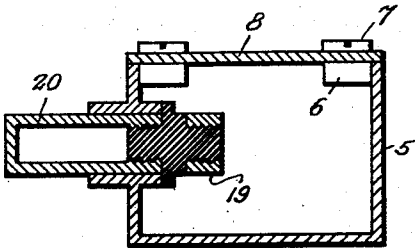
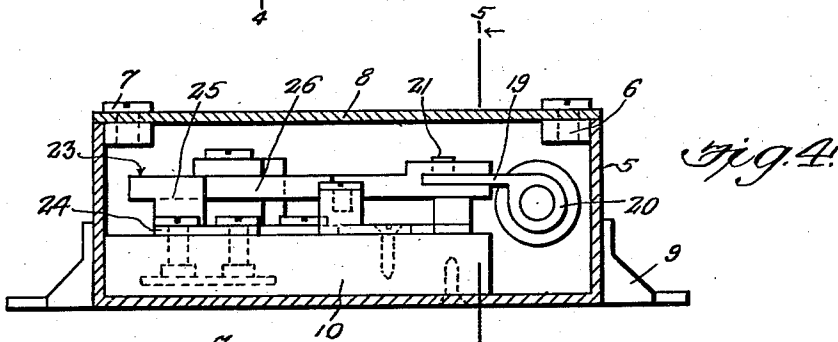
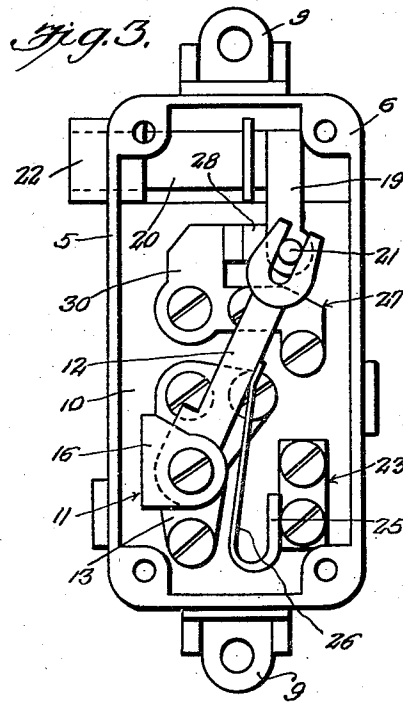
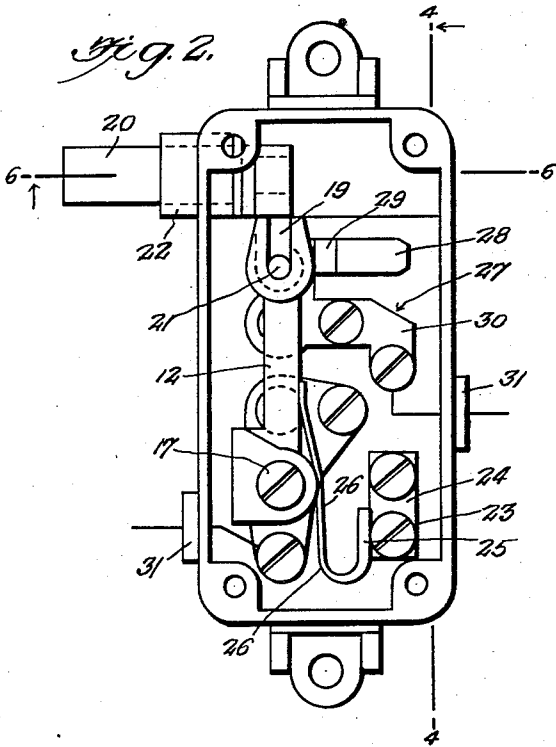
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CONTROL SWITCH FOR DIRECTION SIGNALS

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2 Sheets-Sheet 2



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CONTROL SWITCH FOR DIRECTION SIGNALS

Application filed November 15, 1926. Serial No. 148,502.

This invention relates to a control switch for direction signals on motor vehicles, and particularly to a switch mechanism adapted for association with and operation by a motor vehicle transmission.

The purpose of this invention is to provide a switch mechanism adapted for mounting on a motor vehicle transmission having suitable elements operated by the shifter rod for the reverse gear of the transmission in order that a suitable signal may be energized through the closing of a switch to indicate the backing of the vehicle to the rear thereof.

The invention more particularly includes the provision of a switch mechanism having a stationary contact member and a movable contact member connected with a plunger slidably mounted in the housing for the switch member and projecting outwardly therefrom so that the housing may be suitably attached to a sliding gear transmission on the motor vehicle, with the plunger in alined relation with the shifter rod for the reverse gear of the transmission, for suitable operation thereby.

The invention comprehends numerous other objects residing in the details of construction and arrangement of the parts which are more particularly pointed out in the following detailed description and in the claims directed to a preferred form of the invention, it being understood, however, that various changes in the size, shape and relation of the parts may be made without departing from the spirit and scope of the invention as herein set forth.

In the drawings forming part of this invention:—

Figure 1 is a plan view of a sliding gear transmission showing the improved switch construction applied thereto and wiring connections for a suitable signal to be controlled by the switch.

Fig. 2 is a plan view of the switch construction shown on an enlarged scale with the cover plate removed to illustrate the position and relation of the parts of the switch in detail.

Fig. 3 is a view similar to Fig. 2, showing

the parts in operative circuit closing position.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 2.

Fig. 5 is a transverse section taken on the line 5—5 of Fig. 4.

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 2.

Fig. 7 is a detail perspective view of the operating spring for the movable switch member.

Fig. 8 is a detail perspective of the supporting member for the movable switch member.

Fig. 9 is a detail perspective of the movable switch member.

Fig. 10 is a detail perspective of the stationary contact member.

1, indicates a selective sliding gear transmission of any usual type common in the art which is provided with the shifting handle 2 adapted to control and operate the shifter rod 3. The majority of transmissions of this type used in the art are provided with an extending portion 4 housing part of the gearing of the transmission which has the upper end terminating slightly below the plane of the shifter rod 3 so that the said rod in operation projects outwardly through the casing over this projecting portion 4 as illustrated in Fig. 1.

For the purpose of the present invention, advantage is taken of this construction of transmission as now used in the art, for the control switch having suitable elements operated by the shifter rod in their projection thru the casing 1.

This invention includes a main casing 5 of elongated substantially rectangular form having the upper end open and provided with ears 6 in the corner portions formed with openings to receive the screw 7 for removably securing the cover plate 8 on the casing. At the opposite ends of the casing ears 9 are formed to receive suitable securing means for mounting the casing and the assembled switch construction in operative position on the transmission housing 1 as clearly shown in Fig. 1.

Within the housing the insulating block

member 10 is secured in the bottom portion thereof. At one end of this block adjacent one end portion of the housing, is removably mounted the supporting block 11 for the movable switch member 12. This supporting block comprises a plate member 13 adapted to seat on the insulating block 10 and which is formed with a plurality of openings to receive screws for removably mounting said plate and block on the block 10.

The central portion of the plate 13 is formed with an upwardly extending portion 14 and at one end of the projection 14 is formed the upstanding flange 15 terminating in the laterally extending ear 16 overlying the projection 14 in spaced parallel relation, and provided with an opening aligned with an opening formed in the projection 14. One end portion of the switch lever 12 is pivotally mounted between the ear 16 and the projection 14 in the supporting block and suitably supported thereby through the provision of a suitable pivot pin 17.

The opposite end of the switch lever 12 is bifurcated as indicated at 18 both vertically and horizontally as clearly illustrated in Fig. 9. The horizontal bifurcations receive the laterally projecting plates 19 on the operating plunger 20, while the vertical bifurcations receive the stubs 21 on the end portion of the plate 19. The operating plunger 20 is slidably mounted in the sleeve member 22 mounted in the housing 5 in one side thereof adjacent one end of said housing. This operating plunger 20 in the position of the switch shown in Fig. 2, normally projects beyond the end of the sleeve 22 and in the position of the parts as shown in Fig. 1, engages the ends of the shifter rod 3 controlling the reversing gear so that in the projection of said rod for moving the reversing gear into intermeshed relation in the transmission for reversing the direction of the vehicle equipped therewith, the plunger will be moved through the sleeve 22 inwardly in the casing from the position shown in Fig. 2 to that shown in Fig. 3.

This motion will be transmitted to the switch lever 12 through the studs 21 for moving the lever on its pivot in the supporting block 11.

A resilient operating member 23 includes a supporting plate 24 which is formed with an upwardly extending flange 25 formed at the upper end with a laterally projecting resilient arm 26 which is bent upon itself adjacent the connection with the projection 25 as clearly illustrated in Fig. 7. The plate portion 24 is suitably secured to the insulating block 10 as shown in Figs. 2 and 3, while the resiliently projected arm 26 engages the switch lever 12 for normally moving said lever to the position shown in Fig. 2, and

normally moving the operating plunger 20 to retain it in engagement with the shifter rod 3, as shown in Fig. 1.

A stationary contact member 27 illustrated in detail in Fig. 7, includes a contact block 28 beveled at one end as indicated at 29 where it is secured to the securing plate 30 formed with openings to receive suitable screw members for removably securing the stationary contact to the insulating face 10. This stationary contact member is positioned under the bifurcated end portion of the lever 12, so that the contact block 28 thereof lies in the path of movement of the bifurcated end of the switch lever with which it engages when moved into the position shown in Fig. 3. The beveled end 29 permits the bifurcated end of the lever when operated by the plunger 20 to freely move over the upper portion of the block 28, while in the position shown in Fig. 2, the switch lever overlies the securing plate 30 of the contact and breaks the circuit which overlies the securing plate 30 but does not engage the stationary contact member, and thereby breaks the circuit controlled through the switch arm and stationary contact.

Suitable insulating bushings 31 are mounted in the sides of the housing 5 through which the circuit wires for connecting the switch mechanism in circuit with a suitable signal extend. With particular reference to Fig. 1, it will be noted that the movable switch arm is connected to a suitable source of supply through the wire 32 such as the battery 33 of the motor vehicle, which is grounded as indicated at 34 while the stationary contact 27 is connected by the wire 35 to the signal device 36 which is grounded as indicated at 37. The signal device 36 may be of any suitable and desired character known in the art provided for electrical operation through the control of the energization of the circuit thereto.

With the above described construction, a highly efficient control switch is provided adapted for removable mounting on a transmission for operation by the shifter rod for controlling the reverse gear thereof, so that a circuit to a suitable indicator is made or broken for operating the indicator to display a signal of a suitable character to indicate to the rear of the vehicle that it is about or in the act of moving rearwardly.

This invention in addition provides a novel switch construction having a plunger operating member slidably mounted in the casing containing the switch for moving the pivoted switch arm to engage or disengage the stationary contact.

Having thus described my invention, what I claim as new is:—

A circuit closer, comprising a casing, an insulating block mounted in said casing, a stationary contact member mounted on one

end portion of said insulating block and provided with a beveled edge, a switch lever, a supporting block pivotally supporting one end of the switch member and secured to the opposite end portion of said insulating block, said stationary contact and said supporting block having terminals providing circuit wire attaching means, said switch member being arranged with its free end engageable with the stationary contact and adapted to ride upon the beveled edge thereof, a plunger slidable in the casing and operable outwardly thereof, said plunger being composed of inner and outer sections, an insulation coupling for said sections, a lateral projection on said inner section, means pivotally connecting said projection to the free end of the switch lever for operating said lever by the movement of the plunger and resilient means mounted on said insulating block engaging the lever for yieldably maintaining the lever out of engagement with said stationary contact with the plunger projected outwardly of the casing.

In testimony whereof I affix my signature.
NICHOLAS GREGORIEFF.