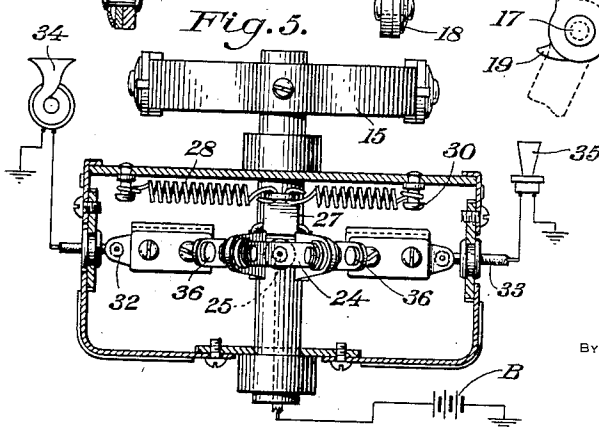
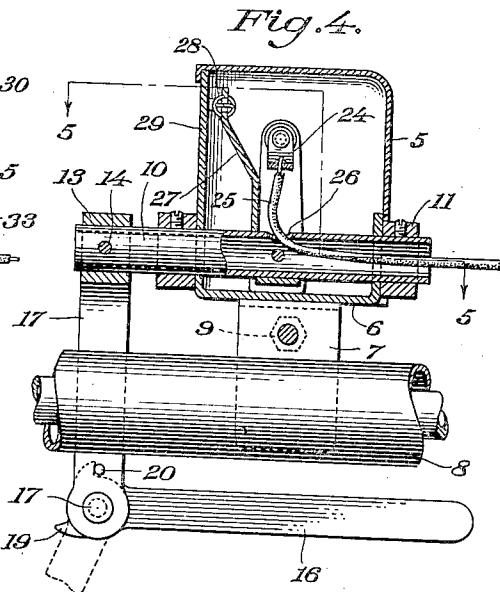
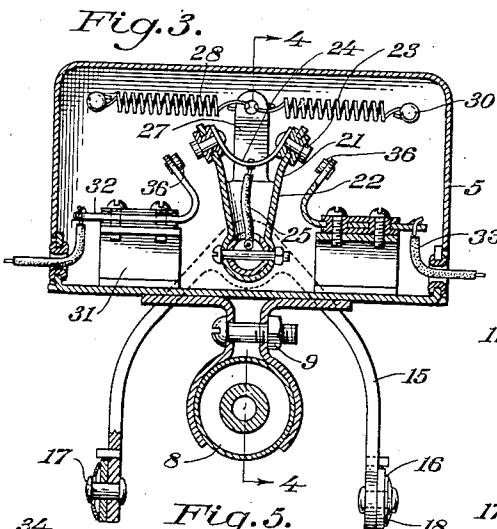
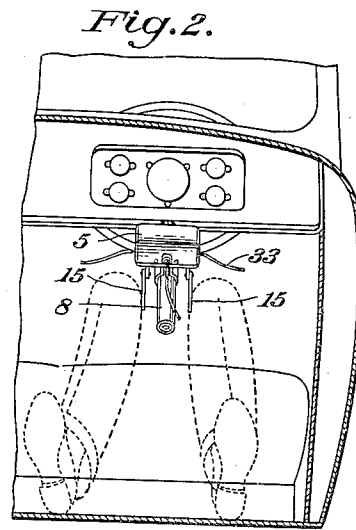
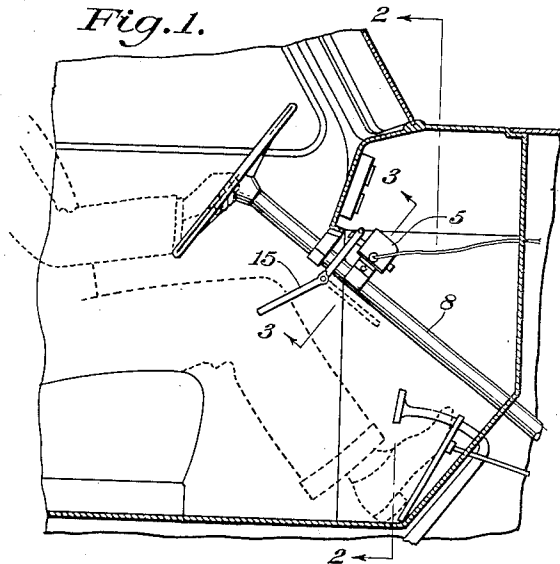


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H. LEVICH
KNEE ACTUATED SWITCH

2,239,155

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ATTORNEYS

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KNEE ACTUATED SWITCH

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Application April 1, 1940, Serial No. 327,317

2 Claims. (Cl. 200—59)

My invention relates to knee actuated switches and has as one of the principal objects thereof the provision of a switch of the above described character so constructed and arranged whereby the same may be secured to the steering column of a motor vehicle and operated by the knees of the driver for effecting actuation of signals, for instance horns, lights and the like, without the necessity of the driver removing his hands or feet from the usual controlling devices of the vehicle.

Another object of my invention is to provide a switch of the above described character which is simple in construction, durable in use, efficient in operation and economical in manufacture.

Other objects and advantages will be apparent from the following description, appended claims and annexed drawing.

Referring to the drawing wherein like reference characters designate like parts throughout the several views:

Figure 1 is a longitudinal sectional view of a portion of a motor vehicle illustrating my invention attached to the steering column.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a detail sectional view, on an enlarged scale, taken on the line 3—3 of Figure 1.

Figure 4 is a sectional view taken on the line 4—4 of Figure 3.

Figure 5 is a sectional view taken on the line 5—5 of Figure 4.

In practicing my invention, as illustrated in the drawing, I provide a casing 5 of a substantially rectangular configuration and which is provided with a bottom wall 6 having fixed thereto a subjacent disposed bracket 7. The bracket 7 comprises a pair of arms having arcuate outer ends embracing a steering column 8 of a motor vehicle or the like and which arms are clamped about said steering column 8 through the medium of a bolt and nut 9, the bolt extending through the inner ends of the arms as illustrated in Figure 3 of the drawing. The bracket 7 thus serves to clamp or secure the casing 5 fixed to the steering column prejacant the knees of the operator.

Extending centrally through the lower section of the casing 5 and arranged in substantial parallelism with the column 8 is a hollow shaft 10, the outer ends of which have fixed thereto collars 11 for maintaining said shaft against axial displacement with respect to the casing and permitting rotation of the shaft relative to the casing. The outer end of the shaft has secured

thereto knee actuatable means 12, the latter comprising a sleeve 13 pinned to the shaft as at 14. The sleeve has integrally connected thereto the upper outwardly diverging end sections of a pair of arms 15, the lower end sections of which are disposed in substantial parallelism and spaced relation with respect to each other.

The lower ends of the arms 15 have pivoted thereto fingers 16 for disposal between the knees of the operator for engagement by the latter to effect rotation of the shaft 10. The fingers are connected to the arms 15 by means of rivets 17 and interposed between the heads of the rivets and the fingers 16 are spring washers 18, the latter serving to frictionally maintain the fingers in a desired adjusted position with respect to the arms 15 as clearly illustrated in full and dotted lines in Figure 4 of the drawing. Each finger adjacent the respective rivet 17 is fashioned with a projection or stop 19 coacting with a pin 20 fixed to the respective arm 15 to limit the movement of the finger in one direction relative to the respective arm and thus enable the fingers to be quickly moved to positions between the knees of the driver.

Bolted to the shaft 10, within the casing, is a substantially U-shaped bracket 21 having upwardly and outwardly diverging sections 22, the upper ends of which have extending there-through and insulated therefrom contacts 23, the latter being connected together by an arcuate-shaped bus bar 24. The bus bar 24 intermediate its ends has connected thereto one end of an insulated wire 25, the latter extending through an opening 26 formed in the shaft 10 and through said shaft to one terminal of a battery B as diagrammatically illustrated in Figure 5 of the drawing, the other terminal of the battery B being grounded.

The front edges of the sections 22 have integrally connected thereto and arranged centrally therebetween an arm 27, the upper end of the latter being connected to the inner ends of a pair of oppositely disposed coil springs 28, the outer ends of the coil springs 28 being secured to the front wall 29 of the casing by means of head-pins 30.

Arranged one on each side of the shaft 10 and fixed to the bottom wall 6 of the casing are the lower ends of a pair of sidewise disposed U-shaped brackets 31, the upper or horizontal ends of which have secured thereto and insulated therefrom contact strips 32. The ends of the contact strips adjacent the side walls of the casing 5 have fixed thereto the ends of insulated

wires 33 leading without the casing and connected, as diagrammatically illustrated in Figure 5 of the drawing, to one terminal of a siren and horn 34 and 35 respectively, the opposite terminals of said siren and horn being grounded. The opposite ends of the strips 32 are inclined upwardly and outwardly and have fixed thereto contacts 36 normally spaced from the contacts 23 and for selective engagement with the latter.

In operation, movement of one knee towards the other serves to rotate the shaft against the tension of one of the springs 28 and effect engagement of one of the contacts 23 with the adjacent contacts 36, thereby completing the electrical circuit through the wires 25 and 33.

Upon release of the knee from one of the fingers 16 the tension spring 28 serves to retract the arm 27 and dispose the contacts 23 in spaced relation with the contacts 36 to break the circuit. Obviously, through the medium of the knees, the shaft 10 may be rocked in a desired direction to effect either operation of the siren 34 or horn 35.

While I have shown and described my invention in connection with a siren and horn, it will be apparent that other signal devices may be substituted therefor and selectively operated by the movement of the knees.

Without further elaboration, the foregoing will so fully explain the invention that others may by applying current knowledge, readily adapt the same for use under various conditions of service. Moreover, it is not indispensable that all the features of the invention be used conjointly since they may be employed advantageously in various combinations and sub-combinations.

It is also obvious that the invention is not confined to the herein described use therefor as it may be utilized for any purpose to which it is adaptable. It is therefore to be understood that the invention is not limited to the specific construction as illustrated and described, as the same is only illustrative of the principles of operation, which are capable of extended application in various forms, and that the invention comprehends all construction within the scope of the appended claims.

What I claim is:

1. In a leg operable switch, a casing, a rotary shaft extended through the casing, a pair of divergent contact carrying sections secured to and extending radially from the shaft, an arcuate inwardly bowed bus bar secured to and connecting the contacts on the said sections, an arm connected with the shaft, a pair of contact strips mounted in the casing at opposed sides of the shaft and arranged to make contact with the contacts on the said sections, the said strips being mounted to assume inclined positions directed outwardly of the casing so as to enable efficient electrical connection thereof with the contacts on the sections when the latter are swung to contacting position, leg operable means attached to the shaft, and means connected with the arm for yieldingly holding the contact sections in intermediate non-contacting positions.

2. In a leg operable switch, a casing, a hollow shaft extending transversely through and journaled on the casing, a bracket embracing the shaft within the casing and fastened thereto, the said bracket having a pair of elongated diverging sections extending radially of the shaft and carrying contact elements in their outer end portions, an arcuate bar electrically connecting the contacts on the sections and bowed inwardly relative to the said sections, a conductor attached to the medial portion of the said arcuate bar and extending through the hollow shaft, a pair of complementary contact strips mounted in the casing at opposed sides of the shaft, the said strips having contact elements in their outer ends and being shaped to assume inclined positions so that rocking movement of the shaft will enable efficient contact between the contact elements on the sections and the fixed elements on the strips, an upstanding arm secured to the section carrying bracket, a knee operable member secured to the outwardly extending portion of the shaft, and springs secured to the casing and connected with the bracket arm for yieldingly maintaining the section contacts in intermediate non-contacting relation with the fixed contacts.

HYMON LEVICH.