

July 31, 1951

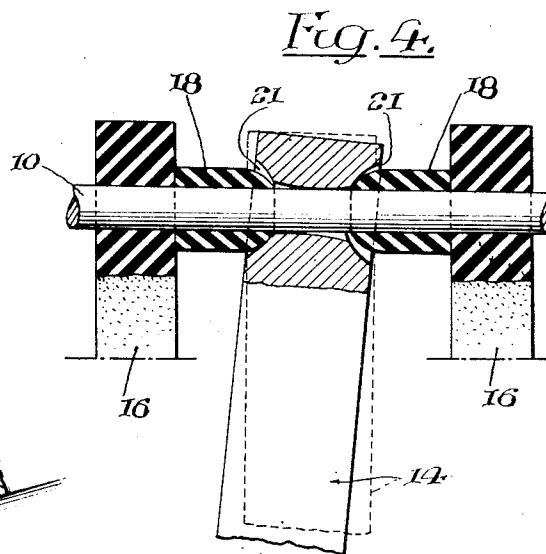
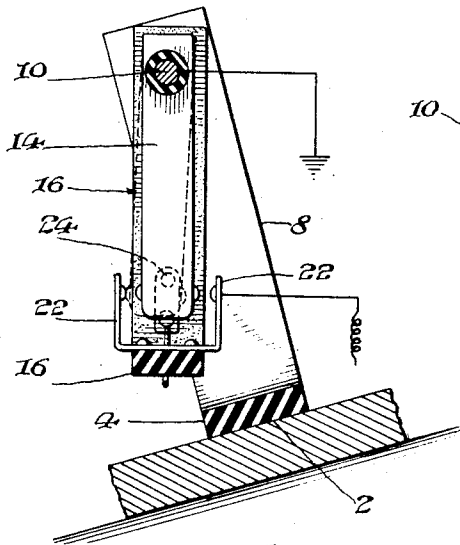
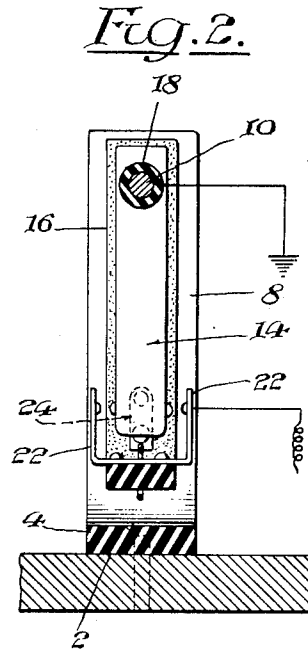
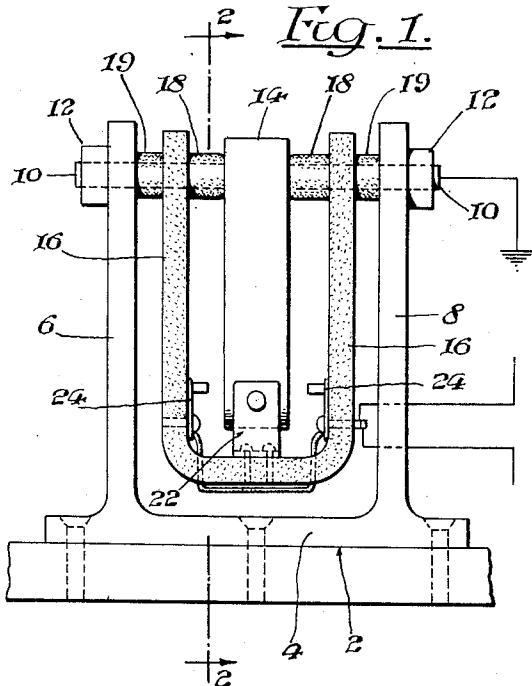
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MOMENTARY CONTROL SWITCH

Filed May 31, 1949

2 Sheets-Sheet 1



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2,562,567

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2 Sheets-Sheet 2

*Fig. 6.*

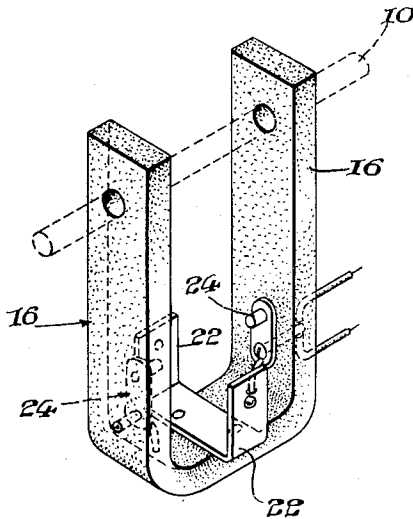


*Fig. 5.*

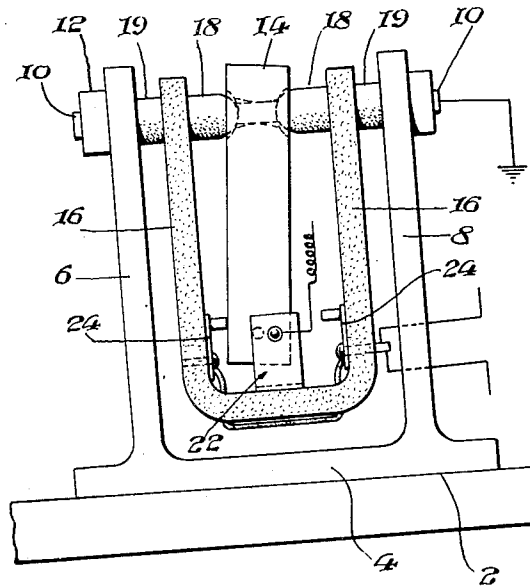
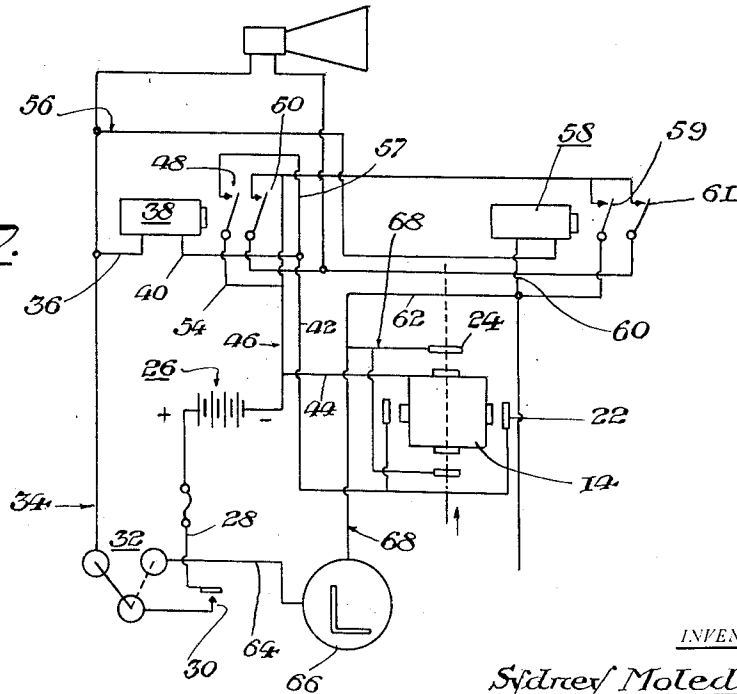


*Fig. 7.*



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## UNITED STATES PATENT OFFICE

2,562,567

## MOMENTARY CONTROL SWITCH

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Application May 31, 1949, Serial No. 96,280

3 Claims. (Cl. 200—52)

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This application is a continuation-in-part of and an improvement upon my co-pending application, Serial Number 78,483, title Contact Switch for Electrical Contacts, filed February 26, 1949, and relates to improvements of the invention disclosed therein, consisting of a momentary control switch.

Generally, the present invention relates to a momentary control switch and more specifically to a momentary switch that is sensitive to sidewise motion, therefore the principal object of the invention resides in the provision of a switch having electrical contacts thereon which will engage and establish a circuit to alarm means when said switch is tilted past a predetermined degree.

Another object provides for means which will visually indicate the tilting of said switch.

A further object provides for the combining of a switch having electrical contacts thereon that are sensitive to sidewise motion with a switch having electrical contacts that are sensitive to forward or rearward motion.

A still further object resides in the provision of adjustable means whereby the angle of engagement may be predetermined.

Other ancillary objects will be apparent from the following description when read in the light of the drawings, in which

Fig. 1 is a front elevation of the invention illustrating normal, or inoperative position thereof.

Fig. 2 is a sectional view thereof taken along lines 2—2 of Fig. 1.

Fig. 3 is a side view illustrating those contacts closed by forward motion.

Fig. 4 is a cross sectional view illustrating in detail the improved mounting of the pendulum arm.

Fig. 5 is a front elevation of the invention illustrating the electrical contacts sensitive to sidewise motion in engaged relationship.

Fig. 6 is an isometric projection of the U-shaped pendulum and the electrical contacts mounted thereon, and

Fig. 7 is a wiring diagram of the invention incorporated in an alarm circuit.

The invention comprises a switch having a pair of arms capable of swinging in the same direction in the nature of pendulums and one of said arms also capable of swinging in a sidewise direction relative to the travel of said other arm. The said switch is primarily adaptable to be attached to a vehicle such as an automobile or truck and which will operate to sound an alarm if the vehi-

cle is jarred, moved or if raised by a conventional jack.

The switch comprises a U-shaped frame member 2 of non-conductive material, as shown in Fig. 1, having a base 4 and a pair of upstanding arms 6 and 8. Said frame member 2 is adapted to be secured to any suitable but inaccessible part of a vehicle.

Mounted in the upper portions of arms 6, 8 is a conducting rod 10 secured at the ends thereof by suitable fastening means 12 to the outer sides of arms 6 and 8.

Journalled on rod 10 is a U-shaped member 16 of non-conductive material and by means of insulated bushings 18 member 16 is positioned between arms 6, 8 of frame 2.

Also journalled on rod 10 and centrally located between the arms of member 16, by means of bushings 19, is an arm 14 of conductive material.

Arm 14 and U-shaped member 16 are capable of swinging in the same direction in a manner like that of a pendulum, however, arm 14, as shown in Fig. 4 is free to swing at right angles relative to the path of travel of member 16. This is made possible by means of sockets 21 recessed in arm 14 co-acting with the tapered ends of the bushings 18, in effect to form a ball and socket joint, or by enlarging the bore in member 14 and allowing clearance between said member and the bushings 18.

Secured to the base of U-shaped member 16 are two pairs of contacts 22, 24. As apparent from Fig. 6, pair 22 is positioned at right angles to rod 10, while pair 24 is positioned on a plane paralleling the axis of rod 10. The individual contacts of each pair are connected together by wire or other conductive means, however, pair 22 is insulated from pair 24, the purpose of which will be hereinafter apparent.

The supporting material for contacts 22 is of light construction and may be readily bent to vary the clearance between arm 14 and said contacts. Likewise, contacts 24 are of the similar type, therefore they too may be adjusted to provide a variable clearance with said arm.

The wiring diagram, Fig. 7, illustrates the electrical circuit employed with the switch to complete an alarm system.

The member 2 is secured in any suitable manner to a stationary part of a vehicle inaccessible to tampering in such a manner that it will permit the vehicle to be left standing at an incline either forward or backward and permit the members 14 and 16 to swing free in unison.

However, should the vehicle be suddenly jarred

or moved by being run into or started by means other than the ignition key, the arm 14, being heavier than the member 16 as well as the difference between the length of the arms from the pivot to the center of gravity, will cause arm 14 to engage contacts 22 thereby completing a circuit and sounding an alarm. The circuit is traced as follows (see Fig. 7):

From the positive terminal of battery 26, over conductor 28, through switch 30 hidden at some secret place unknown to strangers through switch 32, over conductors 34, 36, the coil of relay 38, over conductors 40, 42, through contacts 22, arm 14, conductors 44, 46 to the negative terminal of battery 26, thus energizing relay 38. The momentary energizing of relay 38 attracts an armature closing contacts 48, 50. Contacts 48 provide a holding circuit for relay 38 as follows:

From battery positive over conductor 28, through switch 30, switch 32, over conductors 34, 36, the coil of relay 38, conductors 40, 57 closed contacts 48, conductors 54, 46 to negative.

The contacts 50 are employed to close a circuit which actuates the horn or other alarm means. Therefore, the alarm is sounded and remains actuated until switch 30 or 32 is opened.

In a similar manner, if the vehicle was raised by a jack or other device, for the purpose of removing a tire by someone not so authorized, a second alarm circuit would be completed as follows:

From battery positive, over conductor 28, through switches 30, 32, conductors 34, 56, coil of relay 58, conductors 60, 62 contacts 24 and arm 14, conductors 44, 46 to negative, thus energizing relay 58.

Relay 58 actuates a plurality of contacts 59 and 61, one pair of which establishes a holding circuit for said relay in manner similar to that described above. The other pair of contacts engaged by the energizing of relay 58, completes the hereinbefore described alarm circuit thereby sounding the alarm, which as before remains operated until switch 30 is opened.

The above alarm circuits are prepared by switch 32, when the vehicle ignition key is in off position. However, when the vehicle is being operated and the ignition key is turned on, the alarm circuits are broken and a second pair of contacts are engaged, thereby preparing a circuit that provides a warning to the operator when the said vehicle tilts sidewise such as when making a turn at a dangerous rate of speed or a tire going flat. This circuit is as follows:

From battery positive over conductor 28, through switch 30, switch 32 (contacts closed by dotted line, Fig. 7), conductor 64, lamp 66, conductor 68, contacts 24 and arm 14, conductors 44, 46 to negative, thereby lighting lamp 66 and warning the operator to slow the vehicle. Lamp 66 may be conveniently mounted on the dashboard of the vehicle in a location that could be readily observed.

Switch 30 is included, to provide a means for disabling the entire system, and is of the key-operated type. This allows repairs, etc. to be accomplished without sounding the alarm.

While I have shown and described the preferred embodiment of the invention, it is understood that many changes or alterations could be made without deviating from the scope of the invention, in which I claim:

1. A multiple switch comprising a first pendulum member, a second pendulum member, said pendulum members of dissimilar weight and

journalled on a common rod, a plurality of non-conducting spacers for positioning said pendulum members on said rod, two of said spacers having tapered extremities co-acting with similarly formed recesses in said first pendulum member to provide a ball and socket connection, said rod journalled in a pair of upstanding arms secured to a base member, a plurality of contacting surfaces on said first pendulum member, a first plurality of contacts mounted on said second pendulum member, a second plurality of contacts mounted on said second pendulum member insulated from said first plurality of contacts, said first plurality of contacts engageable with said contacting surfaces when the moment of inertia of said first pendulum member is greater than the moment of inertia of said second pendulum members, and said second plurality of contacts on said second pendulum member are engageable with said contacting surfaces of said first pendulum member when said base member is tilted sideways to a predetermined degree.

2. A multiple switch comprising a first pendulum member, a second pendulum member, said pendulum members of dissimilar weight, and journalled on a common rod, a plurality of non-conducting spacers for positioning said pendulum members on said rod, two of said spacers having tapered extremities co-acting with similarly formed recesses in said first pendulum member to provide a ball and socket connection, said rod journalled in a pair of upstanding arms secured to a base member, a plurality of contacting surfaces on said first pendulum member, a first plurality of adjustable contacts mounted on said second pendulum member, a second plurality of adjustable contacts mounted on said second pendulum member insulated from said first plurality of contacts, said first plurality of contacts engageable with said contacting surfaces when the moment of inertia of said first pendulum member is greater than the moment of inertia of said second pendulum members, and said second plurality of contacts on said second pendulum member are engageable with said contacting surfaces of said first pendulum member when said base member is tilted sideways to a predetermined degree, said degree predetermined by varying the gap between said contacting surfaces of said first pendulum member and the contacts of said second plurality of contacts.

3. A multiple switch comprising a first pendulum member, a second pendulum member, said pendulum members of dissimilar weight and journalled on a common rod, a plurality of non-conducting spacers for positioning said pendulum members on said rod, said first pendulum members having an aperture of greater diameter than that of said rod passing therethrough, said rod journalled in a pair of upstanding arms secured to a base member, a plurality of contacting surfaces on said first pendulum member, a first plurality of adjustable contacts mounted on said second pendulum member, a second plurality of adjustable contacts mounted on said second pendulum member insulated from said first plurality of contacts, said first plurality of contacts engageable with said contacting surfaces when the moment of inertia of said first pendulum member is greater than the moment of inertia of said second pendulum members, and said second plurality of contacts on said second pendulum member are engageable with said contacting surfaces of said first pendulum member when said base member is tilted sideways to a predetermined de-

2,562,567

5

gree, said degree predetermined by varying the gap between said contacting surfaces of said first pendulum member and the contacts of said second plurality of contacts.

SYDNEY MOLEDZKY.

#### REFERENCES CITED

The following references are of record in the file of this patent:

5

Number  
1,305,352  
2,328,215  
2,370,497  
2,385,707  
2,448,597

10

Number  
408,886

6

#### UNITED STATES PATENTS

| Name                | Date           |
|---------------------|----------------|
| Gettell -----       | June 3, 1919   |
| Jacobs -----        | Aug. 31, 1943  |
| Shanklin -----      | Feb. 27, 1945  |
| Johnson -----       | Sept. 25, 1945 |
| Jolley et al. ----- | Sept. 7, 1948  |

#### FOREIGN PATENTS

| Country             | Date          |
|---------------------|---------------|
| Great Britain ----- | Apr. 19, 1934 |