Sept. 3, 1940. J. Q. CUMMINGS 2,213,625

SWITCH

Filed May 10, 1938

Fig. 3.

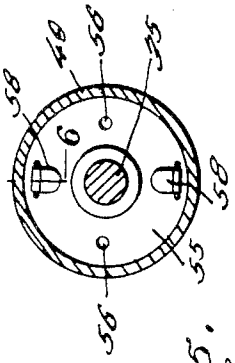


Fig. 2.

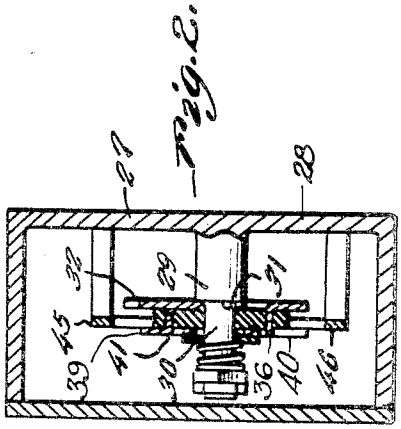


Fig. 6.

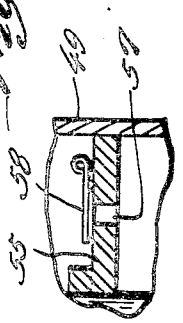


Fig. 5.

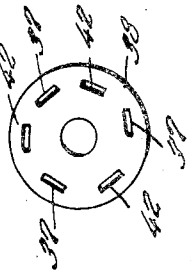


Fig. 1.

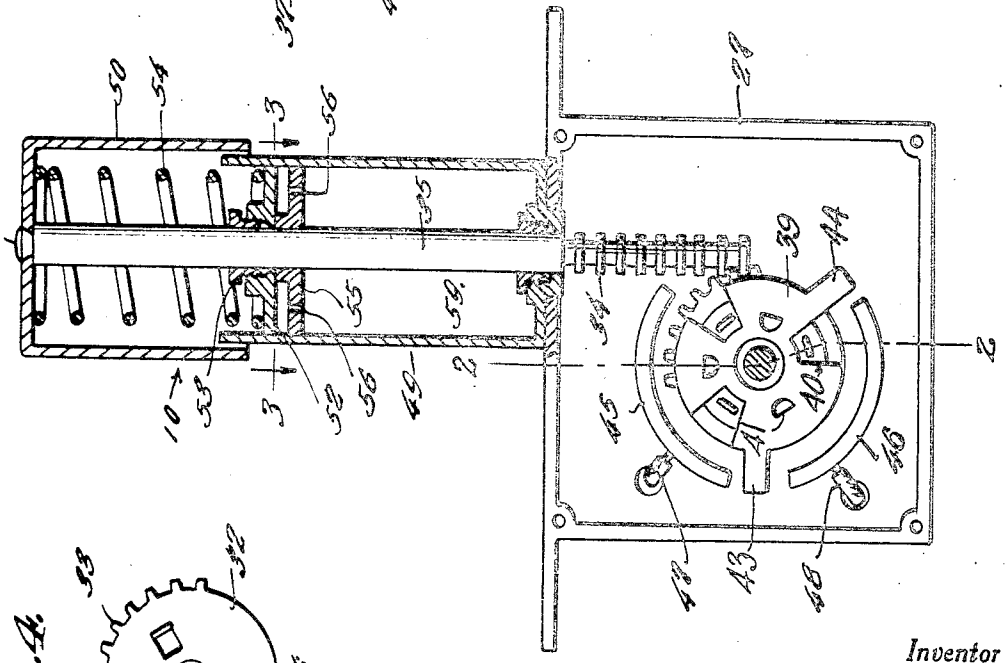
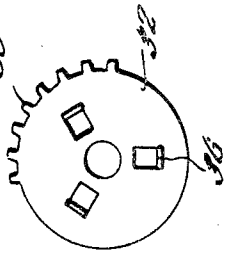


Fig. 4.



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Patented Sept. 3, 1940 2,213,625

UNITED STATES PATENT OFFICE

2,213,625

SWITCH

John Quentin Cummings, Albany, N. Y.

Application May 10, 1938, Serial No. 207,129

1 Claim. (Cl. 200—156)

This invention appertains to new and useful improvements in switch devices mainly intended for actuating signal means of vehicles, the general object of the invention being to provide a switch device actuated by the foot of the driver, with means for quickly closing an electric circuit when the device is pressed upon by the foot, with means for delaying opening of the circuit when the device is released from pressure by the foot.

Another important object of the invention is to provide an apparatus of the character stated which will be of simple construction and not susceptible to the ready development of defects.

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

In the drawing:

Figure 1 is a vertical sectional view through the switch.

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

Figure 3 is a cross sectional view on the line 3—3 of Figure 1.

Figure 4 is a side elevational view of one of the gears.

Figure 5 is a side elevational view of the insulating spacer disk.

Figure 6 is a sectional view on the line 6—6 of Figure 3.

Referring to the drawing wherein like numerals designate like parts, it can be seen in Figure 1 the switch generally referred to by numeral 10 consists of a box structure 27 from one wall 28 of which extends the stub shaft 29 which has a reduced portion 30 defining the shoulder 31 against which abuts the gear 32. This gear has a section of teeth 33 adapted to mesh with the rack 34 at the lower end of the vertically movable shaft 35. The gear 32 is struck out to provide the laterally disposed tongues 36 which are disposed into the openings 37 of the disk 38 of insulation which is located on the reduced portion 30 of the shaft 29.

Numeral 39 represents the contactor which has the cut out portions 40 to avoid the tongues 36 of the gear 32. The remaining portions of the contactor 39 are stamped to provide tongues 41 which are disposed into the openings 42 of the aforementioned disk 38. Thus the contactor is adequately insulated from the gear 32. The contactor 39 carries a pair of arms 43—44 for riding engagement with the arcuate-shaped contacts 45 and 46, respectively, one of which is connected to a battery by the conductor 47 and the other to a signal by a conductor 48.

Rising from the top of the box 27 is the barrel 49 over the upper end of which is slidably disposed the tubular cap 50 to the top of which the shaft 35 is secured as at 51.

A partition 52 is provided in the upper portion of the barrel 49 and has a packing gland 53 therein through which the shaft 35 is slidable. A coiled compressible spring 54 is interposed between the partition 52 and the top of the cap 50 for normally holding the cap 50 in elevated position.

A plunger plate 55 is carried by the shaft 35 and has openings 56 and also additional openings 57 covered by swingable flaps 58. Obviously on the down stroke of the cap 50 fluid in the chamber 59 will pass upwardly through all of the openings 56 and 57. The contactor 39 will be rotated so as to bridge the contacts 45—46 and result in the energization of the signal. However, when the operator lifts his foot from the cap 50 and the spring 54 begins to retrieve the shaft 35 for swinging the contactor to switch open position, the action will be slow in that fluid will only be able to pass through the two openings 56 and not through the openings 57 covered by the flaps 58. Thus the signal will remain active for a substantial period of time, that is, sufficient time to execute the turn desired by the operator.

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:

A switch structure of the class described comprising a casing, a stationary shaft in the casing, a gear rotatably supported on the shaft and having teeth on a part of its circumference and tongues projecting from one face thereof, a disk of non-conducting material on the shaft having slots therein, some of which receive the tongues of the gear, a contactor disk on the shaft having tongues extending from one face thereof and fitting in the other slots of the disk of insulating material, said disk being located between the gear and the contactor disk, said contactor disk having notches therein arranged in alignment with the tongues of the gear for preventing said tongues from contacting the contactor disk, a pair of arcuate contact strips in the casing, arms extending from the contactor disk for engaging the strips and a manually operated plunger member having a rack portion for engaging the teeth of the gear for actuating the parts to move the arms of the contactor disk into and out of engagement with the strips.

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