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A. T. MERKEL
SWITCHING APPARATUS

2,647,964

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Fig. 1

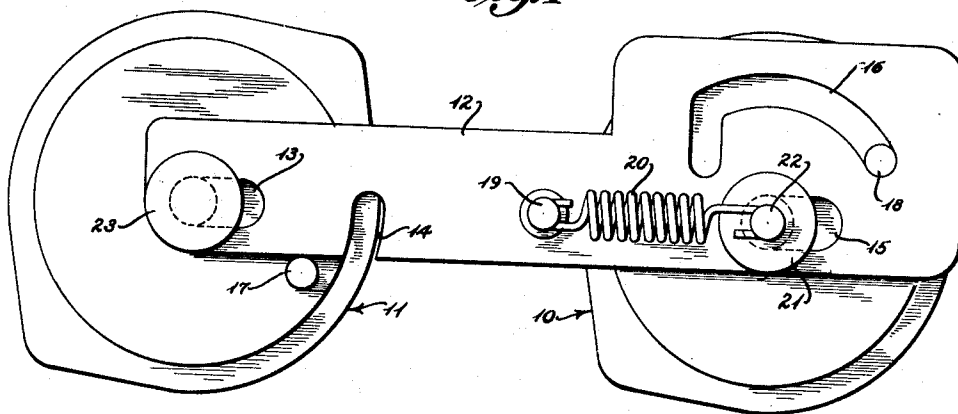


Fig. 2

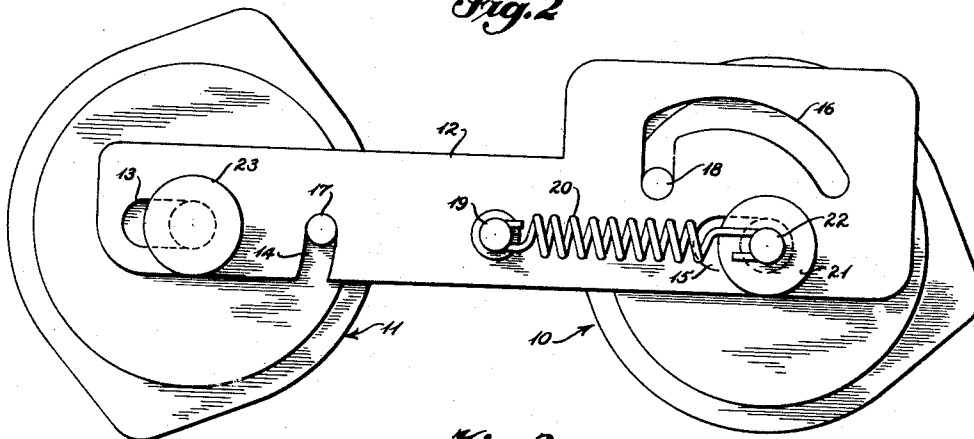
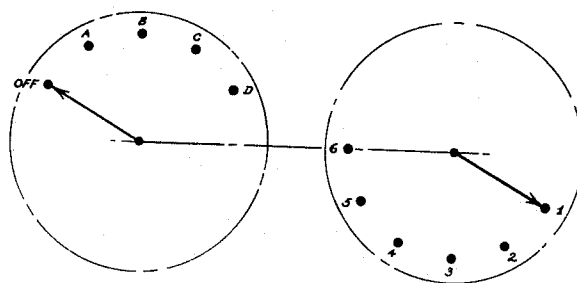


Fig. 3



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SWITCHING APPARATUS

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mesne assignments, to the United States of
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2 Claims. (Cl. 200—50)

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This invention relates to switching apparatus and more particularly to dual switching apparatus having switches with more than two positions and having mechanism for interlocking the switches.

A primary object of the instant invention is to provide new and improved switch interlocking mechanism.

Another object is to provide new and improved switch interlocking mechanism for interlocking two switches having more than two positions.

Other objects and advantages will become apparent after a consideration of the following specification taken in connection with the accompanying drawings, in which:

Fig. 1 is a rear view of the switch interlocking mechanism in one setting of the switches;

Fig. 2 is a rear view of the switch interlocking mechanism in another setting of the switches; and

Fig. 3 is a diagram illustrating the operation of the invention.

In the figures, the reference numeral 11 generally designates a first switch, and the reference numeral 10 a second switch to be interlocked with the first switch. Mounted upon the movable portions of the switches 10 and 11 are studs 18 and 17 respectively, designed to cooperate with shaped grooves or slots 16 and 14 respectively cut in the ends of a plate or link member 12 which is slidably mounted upon the ends of the two switch shafts, and having slots 15 and 13 for receiving the ends of the respective shafts. Member 23 threaded or otherwise secured to the end of the shaft of switch number 11 provides means for maintaining the link 12 on the shaft, and washer member 21 on shaft 22 of switch number 10 is held in place thereon by one end of spring 20 latched in a peripheral groove, not shown, in the shaft 22, the other end of spring 20 being attached to pin 19 fixed to link 12.

Fig. 1 shows the switches in free positions, in which slot 14 does not engage stud 17 and stud 18 is free to move in slot 16. In Fig. 2 the switches are shown in interlocked positions.

Fig. 3 is a diagram illustrating the operation of the switches of Figs. 1 and 2. Switch number 10 can rotate in all positions shown if switch number 11 is in any position between 1 and 5 inclusive. Switch number 11 cannot rotate into

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its sixth position unless switch number 10 is in the "D" position. While switch number 11 is in its sixth position, switch number 10 cannot be rotated out of the "D" position.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. In an interlocking apparatus for use with a first and a second switch, each of said switches having a plurality of switch positions, and having rotatable assemblies including shafts, in combination; a first stud mounted for rotation with and on the rotatable assembly of said first switch, a second stud mounted for rotation with and on the rotatable assembly of said second switch, a plate member having a pair of slots therein slidably receiving said shafts, said plate member also having a first slot open at one end for receiving said first stud and a second slot closed at both ends receiving and retaining captive said second stud, said second slot having a straight portion and an arcuate portion, said plate member preventing motion of said second stud and thus said second switch when said first stud is in said first slot and said second stud is disposed in said straight portion at which arrangement said first stud and hence said first switch is movable to all of its switch positions; said first stud and hence said first switch being prevented from moving to all of its switch positions by said plate member when said second stud is disposed in said arcuate portion and said second switch is movable to each of its switch positions.

2. The combination of claim 1 and, resilient means normally urging said plate member toward the shaft of said second switch.

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