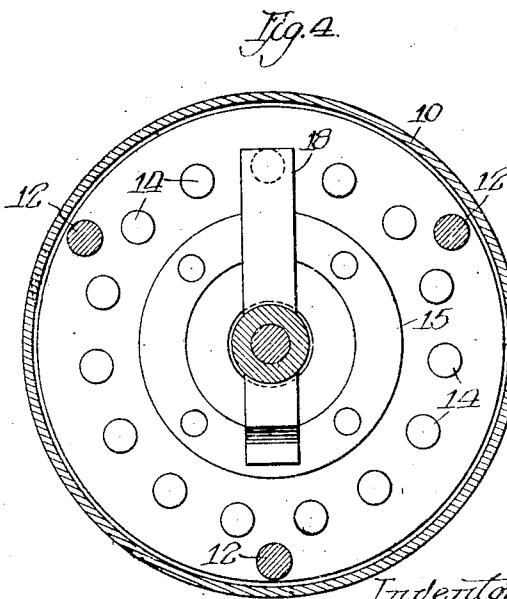
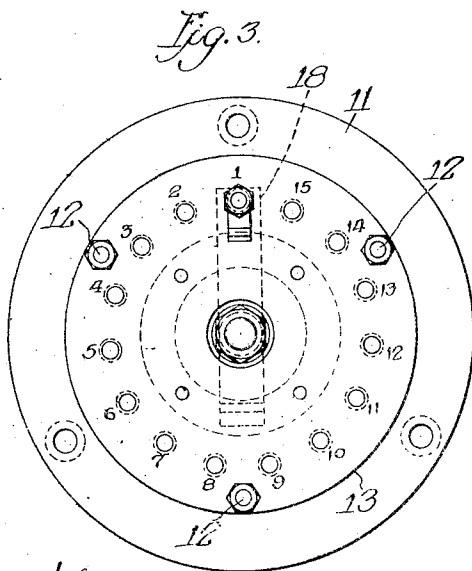
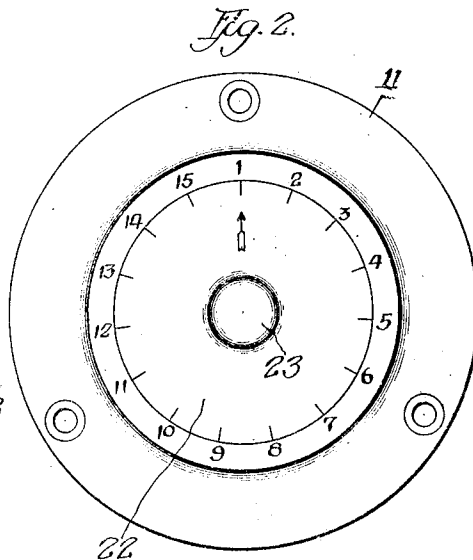
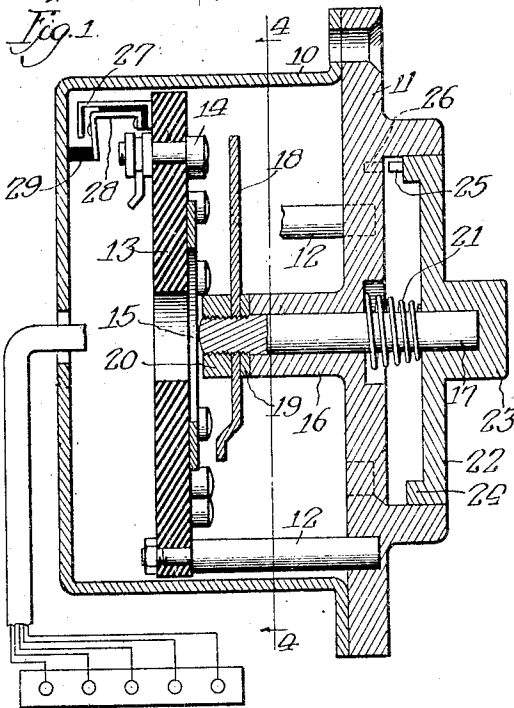


T. H. NELSON.
SELECTIVE SWITCH.
APPLICATION FILED FEB. 12, 1917.

Patented Dec. 2, 1919.

1,323,716.



Witness:

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UNITED STATES PATENT OFFICE.

THEODORE H. NELSON, OF CHICAGO, ILLINOIS.

SELECTIVE SWITCH.

1,323,716.

Specification of Letters Patent.

Patented Dec. 2, 1919.

Original application filed January 29, 1916, Serial No. 74,962. Divided and this application filed February 12, 1917. Serial No. 148,083.

To all whom it may concern:

Be it known that I, THEODORE H. NELSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Selective Switch, of which the following is a specification.

My invention relates to an improved construction of switching mechanism for use in selectively controlling a plurality of circuits, so that by the operation of the same devices any one of a desired number of circuits may be selected and closed. I am aware that selective switching mechanism of this class has been constructed heretofore in the art and I do not, therefore, broadly claim such a switching mechanism as my invention, but, on the other hand, my invention consists in a particular construction of such switching mechanisms by which a single element or device, which may have the form of a circular dial, is employed to select the circuit to be controlled by rotating the dial, and the closure of the circuit is effected by moving the dial longitudinally upon its axis. The switching mechanism is preferably provided with a metallic casing constructed so that it may be used in exposed locations without danger of the switching mechanism becoming disturbed or deranged and I preferably employ in the casing safety contacts so that if an attempt is made to open the casing by an unauthorized person, the safety contacts may control the closure of an alarm circuit to indicate the tampering.

My invention is particularly adapted for use in connection with my burglar alarm system, constituting the subject matter of co-pending application, Serial No 74,962, filed January 29, 1916, of which application this is a divisional application.

My invention will best be understood by reference to the accompanying drawings in which—

Figure 1 shows in a vertical sectional view the detail construction of the switching mechanism,

Fig. 2 shows the switching mechanism in front elevation,

Fig. 3 shows the switching mechanism in rear elevation with the casing removed, and

Fig. 4 shows the switching mechanism in front elevation with the front plate removed.

Similar numerals refer to similar parts throughout the several views.

In these figures the casing 10, which is cylindrical in form, is secured by screws as indicated to the front plate 11 which supports by a plurality of posts 12 the insulating disk 13 which constitutes the support for the contacts 14 and conducting ring 15, these contacts and conducting ring being located on the front side of the disk. The front plate 11 has extending rearwardly from it a central boss 16 in which a cylindrical rod 17 is mounted so as to be freely rotatable. The inner end of the rod 17 has mounted upon it a contact blade 18 which is secured in place between a collar 19 and nut 20 carried by said rod. One end of the contact blade 18 is arranged to engage the contact ring 15 and the other end of said blade is arranged to engage desired ones of the contacts 14, the conducting ring and contacts being in different planes so that the contact engaging end of the contact blade does not engage the conducting ring. In its normal position the contact blade 18 is held away from the contacts and conducting ring by a spring 21 located in a suitable recess in the front plate 11 between said plate and the inner face of the dial 22 rigidly secured to the outer end of the rod 17. The central portion of the dial 22 is formed into a hub 23 by which the dial may be rotated. At its outer edge the dial has an inwardly extending flange 24 to increase the bearing surface between it and the cylindrical bore formed therefor in the front plate 11. The flange 24 has projecting rearwardly from it a pin 25 for entering the holes 26 formed in the front plate to permit the dial to be pushed rearwardly only when the contact blade 18 is angularly aligned with desired ones of the contacts 14. The edge of the dial and the adjacent edge of the front plate are provided with graduations and suitable indications as, for example, numbers, so that the dial, rod and contact blade may be turned to bring the contact blade opposite any desired contact 14, for which condition, as a result of the co-operation of the pin 25 with the corresponding one of the holes 26, the dial may be pushed rearwardly against the action of the spring 21 to bring the contact blade 18 into engagement with the selected contact 14 and at the same time with the conducting ring

15 which serves to electrically connect the selected contact with said conducting ring. The pin 25 serves to prevent holding the dial 22 in its rearward position and sweep-
 5 ing the contact blade over the contacts one after the other and necessitates angular adjustment of the dial to a desired position before the dial can be moved to the rear to close the circuit controlled by the selected contact.

10 Since the controlling mechanism described may be located on the outside of a room or building protected by my alarm system and, therefore, accessible to any one who desires
 15 to operate it, I provide against tampering with the switching mechanism by the removal of the front plate in an attempt to disable the switching mechanism by providing the safety springs 27 and 28 on the rear
 20 face of the disk 12, which springs in an open circuit system are normally separated from each other by the engagement of an insulating plug 29 carried by the spring 28 with the inner wall of the casing 10 so that when the
 25 front plate 11 and the parts carried thereby are removed from the casing the springs 27 and 28 come together, closing the desired circuit. Similarly for a closed circuit control system the safety springs are normally
 30 held in contact with each other, and for this construction when the front plate is removed the contact springs separate from each other, opening the controlled circuit and giving the alarm.

35 From the above it will appear that the switching mechanism of my system provides a simple and convenient mechanism by which any desired circuit connected with the switching mechanism may be selected and
 40 controlled, there being but one moving part to effect both the selection and operation of the switching mechanism. The switching mechanism may thus be made compact in form and eliminate many of the difficulties
 45 found in selective switching mechanisms in which insulation is used to support the buttons actuating the switches. By my construction all insulation troubles of this kind are avoided. The construction of the device
 50 facilitates selecting the circuits in desired combinations from which, particularly if certain of the positions are inoperative or control an alarm circuit as is contemplated in my burglar alarm system referred to, I
 55 term the mechanism a "combination switch", since the operation of properly selecting the circuits is similar to the operation of a combination lock.

It will be understood that I do not limit
 60 myself in carrying out my invention to the particular embodiments above described, as I may employ equivalents thereof without departing from the spirit of my invention.

What I claim is:

65 1. In a switching mechanism, the combination of a front plate, a contact supporting

70 plate separated from the front plate and carried thereby, a casing closed by the front plate for containing the contact supporting plate, a rod carried by the front plate and capable of angular and longitudinal motion, contacts on the contact supporting plate, and a switch blade carried by said rod out of contact with the contacts on the contact supporting plate, whereby angular motion of
 75 said rod and switch blade selects a desired contact and longitudinal motion of said rod connects said switch blade with said contact, posts for securing the contact supporting plate to the front plate, and removable connections carried by said posts for permitting
 80 the ready disengagement of said contact supporting plate from said front plate.

2. In a switching mechanism, the combination of a front plate, a contact supporting
 85 plate separated from the front plate and carried thereby, a casing closed by the front plate for containing the contact supporting plate, a rod carried by the front plate and capable of angular and longitudinal motion, contacts on the contact supporting plate, and a switch blade carried by said rod out of contact with the contacts on the contact supporting plate, whereby angular motion of
 90 said rod and switch blade selects a desired contact and longitudinal motion of said rod connects said switch blade with said contact, said front plate having a circular recess in its outer surface, a disk carried by the outer
 95 end of said rod inclosing said recess, and registering devices between said disk and said front plate comprising a pin carried by one of said elements for engaging a series of holes formed in the other of said elements for permitting longitudinal motion of said
 100 rod and said disk only when said switch blade is in line with said contacts.

3. In a switching mechanism, the combination of a front plate, a contact supporting
 110 plate separated from the front plate and carried thereby, a casing closed by the front plate for containing the contact supporting plate, a rod carried by the front plate and capable of angular and longitudinal motion, contacts on the contact supporting plate, and
 115 a switch blade carried by said rod out of contact with the contacts on the contact supporting plate, whereby angular motion of said rod and switch blade selects a desired contact and longitudinal motion of said rod
 120 connects said switch blade with said contact, and a spring tending to hold said rod in its out position.

4. In a switching mechanism, the combination of a front plate, a contact supporting
 125 plate separated from the front plate and carried thereby, a casing closed by the front plate for containing the contact supporting plate, a rod carried by the front plate and capable of angular and longitudinal motion, 130

contacts on the contact supporting plate, and
a switch blade carried by said rod out of
contact with the contacts on the contact sup-
porting plate, whereby angular motion of
5 said rod and switch blade selects a desired
contact and longitudinal motion of said rod
connects said switch blade with said contact,
said front plate having a circular recess in
its outer surface, a disk carried by the outer
10 end of said rod inclosing said recess, and
registering devices between said disk and
said front plate comprising a pin carried by
one of said elements for engaging a series of
holes formed in the other of said elements
for permitting longitudinal motion of said 15
rod and said disk only when said switch
blade is in line with said contacts, and a
spring tending to hold said rod in its out-
position.

In witness whereof, I hereunto subscribe 20
my name this 30th day of January, A. D.
1917.

THEODORE H. NELSON.